Review of the retail leased lines, symmetric broadband origination and wholesale trunk segments markets

Final Statement and Notification

Identification and analysis of markets, determination of market power and setting of SMP conditions

Contents

Summary

A new regulatory regime

S.1 A new regulatory framework for electronic communications networks and services entered into force in the UK on 25 July 2003. The basis for the new framework is five new EU Communications Directives that are designed to create harmonised regulation across Europe. Four of these Directives have been implemented in the UK via the new Communications Act 2003 ("the Act"). The fifth was implemented on 31 October 2003.

S.2 The Act provides for functions, powers and duties to be carried out by Ofcom which include, *inter alia*, functions, powers and duties flowing from the four EC Communications Directives referred to above. Certain existing functions are also transferred to Ofcom.

S.3 The new Directives require National Regulatory Authorities ("NRAs"), *inter alia*, to carry out reviews of competition in communications markets to ensure that regulation remains appropriate in the light of changing market conditions. For a limited period, while those reviews are conducted and until the new SMP conditions are imposed, some of the regulatory regime which existed before 25 July 2003 continues in force by virtue of Continuation Notices which have been made by Ofcom's predecessor, the Office of Telecommunications ("Oftel"). These continuation notices can be found on Ofcom's website at http://www.ofcom.org.uk/static/archive/oftel/publications/eu_directives/cont_notices/index.htm.

Previous consultations

S.4 On 11 April 2003, Oftel published a national consultation document entitled "Review of the retail leased lines, symmetric broadband origination and wholesale trunk segments markets". That document invited comments on its proposals for defining markets, on its conclusions about the state of competition in those markets, and on the remedies which might be applied. The period of consultation closed on 20 June 2003.

S.5 On 18 December 2003, having considered responses to the April 2003 consultation document, Oftel published a Notification under section 48(2) of the Act setting out its draft decisions in relation to those markets. As required by Article 7 of Directive 2002/21/EC on a common regulatory framework for electronic communications networks and services ("the Framework Directive") (as implemented by sections 50 and 81 of the Act), the draft decisions were also sent to the European Commission and to other NRAs as, in Oftel's opinion, the proposals may affect trade between member states. The Commission and stakeholders were given until 6 February 2004 to make representations on the draft decisions.

The present document

S.6 Having considered responses to the notifications, Ofcom is setting out in the present document the conditions that should apply in the relevant markets; the Notification under section 48(1) of the Act recording its decisions is at Annex D. As required by Article 7 of Directive 2002/21/EC on a common regulatory framework for electronic communications networks and services ("the Framework Directive") (as implemented by sections 50 and 81 of the Act), the final decisions are also being sent to the European Commission.

Summary of proposals

Identification of markets

S.7 The products and services under consideration in this document fall within the general categories of retail leased lines, wholesale symmetric broadband origination and wholesale trunk segments. Within these categories Ofcom has identified the following economic markets in accordance with competition law principles, for the purpose of ensuring that regulatory obligations are proportionate and objectively justifiable.

S.8 In the UK excluding Kingston upon Hull (except the market for wholesale trunk segments, which includes Kingston upon Hull):

- retail low bandwidth traditional interface leased lines (up to and including 8Mbit/s);
- wholesale low bandwidth traditional interface symmetric broadband origination (up to and including 8Mbit/s);
- wholesale high bandwidth traditional interface symmetric broadband origination (above 8Mbit/s up to and including 155Mbit/s);
- wholesale very high bandwidth traditional interface symmetric broadband origination (above 155Mbit/s);
- wholesale alternative interface symmetric broadband origination at all bandwidths; and
- wholesale trunk segments at all bandwidths (including Kingston upon Hull).

S.9 In the Kingston upon Hull area:

- retail low bandwidth traditional interface leased lines (up to and including 8Mbit/s);
- wholesale low bandwidth traditional interface symmetric broadband origination (up to and including 8Mbit/s);
- wholesale high bandwidth traditional interface symmetric broadband origination (above 8Mbit/s up to and including 155Mbit/s); and
- wholesale alternative interface symmetric broadband origination at all bandwidths.

S.10 The technical areas considered are:

- interconnection services, being In Span Handover (“ISH”) and Customer Sited Handover (“CSH”);
- ISH extension circuits; and
- Synchronous Transfer Mode (“STM”) - ISH and CSH handover.

These are discussed in more detail in Chapter 6.

S.11 Chapter 2 and Annex A contain detailed definitions of all markets, and the approach taken by Ofcom when identifying these markets, and they explain the differences between the market definitions identified by Ofcom and those included in the European Commission’s Recommendation on relevant markets (“Recommendation”).

Assessment of market power

S.12 Having analysed the operation of these markets, and taken due account of the Commission's "Guidelines on market analysis and the assessment of SMP" ("SMP Guidelines"), Ofcom has concluded that Significant Market Power ("SMP") is held in the following markets:

S.13 By British Telecommunications plc ("BT") in the following markets in the UK excluding the Hull Area:

- retail low bandwidth traditional interface leased lines (up to and including 8Mbit/s);
- wholesale low bandwidth traditional interface symmetric broadband origination (up to and including 8Mbit/s);
- wholesale high bandwidth traditional interface symmetric broadband origination (above 8Mbit/s up to and including 155Mbit/s);
- wholesale alternative interface symmetric broadband origination at all bandwidths; and
- wholesale trunk segments at all bandwidths (including Kingston upon Hull).

S.14 By Kingston Communications plc ("Kingston") in the following markets in the Hull Area:

- retail low bandwidth traditional interface leased lines (up to and including 8Mbit/s);
- wholesale low bandwidth traditional interface symmetric broadband origination (up to and including 8Mbit/s);
- wholesale high bandwidth traditional interface symmetric broadband origination (above 8Mbit/s up to and including 155Mbit/s); and
- wholesale alternative interface symmetric broadband origination at all bandwidths.

S.15 Full details of Ofcom's decision and reasoning are contained in Chapter 3 and Annex B of this document.

Regulatory remedies

S.16 Given the positions of dominance enjoyed by BT, i.e. its ability to behave to an appreciable extent independently of competitors, customers and ultimately consumers in the markets listed below, Ofcom is imposing the following obligations on BT.

Low bandwidth retail leased lines *(retail leased lines of bandwidths up to 8Mbit/s, including the minimum set of leased lines identified by the Commission) – discussed in Chapter 5*

S.17 Conditions

- obligation to supply on reasonable request the minimum set of retail leased lines and to continue to supply existing 8Mbit/s retail traditional interface leased lines being provided on the date the conditions enter into force;
- requirement not to unduly discriminate;
- in respect of analogue and 8Mbit/s retail traditional interface leased lines, cost orientation and a cost accounting system to take effect only if BT breaches its voluntary undertaking not to raise the combined prices of a basket of these

services by more than RPI before June 2006 or the implementation of the next market review, whichever is the earlier;
- for all leased lines in this market, a requirement to publish a reference offer (obligation to publish current prices, terms and conditions; and same day price notification); and
- requirement to publish information concerning delivery and repair times.

S.18 Ofcom will not apply any regulation to the retail high (above 8Mbit/s up to and including 155Mbit/s) bandwidth or very high (above 155Mbit/s) bandwidth traditional interface markets or the retail alternative interface market (where new products are only available at 10Mbit/s or above).

Low and high bandwidth traditional interface wholesale symmetric broadband origination services *(up to and including 8Mbit/s, and above 8Mbit/s up to and including 155Mbit/s, respectively) – discussed in Chapter 6* and
Wholesale trunk segments *(note that this market extends to the whole of the UK including Kingston upon Hull, for the reasons set out in Chapter 2) – discussed in Chapter 8* and
The technical areas identified above – *discussed in Chapters 6 and 8*

S.19 Conditions

- a general obligation to provide access on reasonable request;
- requirement not to unduly discriminate;
- basis of charges obligations (cost orientation and a cost accounting system);
- price control *(not for trunk market)*;
- accounting separation obligations;
- requirement to publish a reference offer;
- an obligation to give 90 days' notice of changes to prices, terms and conditions for existing traditional interface symmetric broadband origination services;
- an obligation to give 28 days' notice of the introduction of prices, terms and conditions for new traditional interface symmetric broadband origination services;
- same day notification of changes to prices, terms and conditions for wholesale trunk segment products;
- requirement to provide quality of service information;
- requirement to notify technical information with 90 days' notice; and
- obligations relating to requests for new network access.

S.20 Directions

- a Direction under the general access condition to provide Partial Private Circuits (PPCs) at a range of bandwidths, Radio Base Station (RBS) backhaul link products, and Local Loop Unbundling (LLU) backhaul products, subject to specific terms and conditions;
- a Direction under the cost orientation condition covering pricing matters relating to PPCs and LLU backhaul; and
- a Direction under the quality of service condition to require specific information in respect of PPCs.

S.21 Ofcom is not imposing any regulation for the very high bandwidth traditional interface symmetric broadband origination market as it is of the view that BT does not have SMP in this market.

Wholesale alternative interface symmetric broadband origination services – *discussed in Chapter 7*

S.22 Conditions

- a general obligation to provide access on reasonable request;
- requirement not to unduly discriminate;
- basis of charges obligations (cost orientation and a cost accounting system);
- accounting separation obligations;
- requirement to publish a reference offer;
- an obligation to give 90 days' notice of changes to prices, terms and conditions for existing alternative interface symmetric broadband origination services;
- an obligation to give 28 days' notice of the introduction of prices, terms and conditions for new alternative interface symmetric broadband origination services;
- requirement to provide quality of service information;
- requirement to notify technical information with 90 days' notice; and
- obligations relating to requests for new network access.

S.23 **Directions**

- a Direction under the general access condition to provide Ethernet-based LLU backhaul products, subject to specific terms and conditions; and
- a Direction under the cost orientation condition covering pricing matters relating to Ethernet-based LLU backhaul.

S.24 These conclusions remain the same as those proposed in the 18 December notification document. Minor amendments have been made to some of the specific terms within the Conditions and Directions, and these are explained in the relevant chapters below.

S.25 Given the positions of dominance enjoyed by Kingston, i.e. its ability to behave to an appreciable extent independently of competitors, customers and ultimately consumers, Ofcom is imposing the following obligations.

Low bandwidth retail leased lines *(retail leased lines of bandwidths up to 2Mbit/s, including the minimum set identified by the Commission – there are no 8Mbit/s retail leased lines in the Hull area) – discussed in Chapter 9*

S.26 Conditions

- obligation to supply on reasonable request the minimum set of retail leased lines;
- requirement not to unduly discriminate;
- basis of charges obligations (cost orientation and cost accounting); and
- requirement to publish a reference offer (obligation to publish current prices, terms and conditions); and
- requirement to publish information concerning delivery and repair times.

S.27 Ofcom is not imposing any regulation to the retail high (above 8Mbit/s up to and including 155Mbit/s) bandwidth or very high (above 155Mbit/s) bandwidth traditional interface markets or the retail alternative interface market.

Low and high bandwidth wholesale traditional interface symmetric broadband origination services *(up to and including 8Mbit/s, and above 8Mbit/s up to and including 155Mbit/s, respectively) – discussed in Chapter 9*

S.28 Conditions

- a general obligation to provide access on reasonable request;
- requirement not to unduly discriminate;
- basis of charges obligations (cost orientation);
- requirement to publish a reference offer; and
- requirement to notify technical information.

Wholesale alternative interface symmetric broadband origination services – *discussed in Chapter 9*

S.29 Conditions

- a general obligation to provide access on reasonable request;
- requirement not to unduly discriminate;
- basis of charges obligations (cost orientation);
- requirement to publish a reference offer; and
- requirement to notify technical information.

S.30 These conclusions remain the same as those proposed in the 18 December notification document. Minor amendments have been made to some of the specific terms within the Conditions and Directions, and these are explained in the relevant chapters below.

S.31 Ofcom considers that, taken as a whole, the conclusions in this notification represent a proportionate response to the market analysis carried out. The regulation follows from the finding that BT and Kingston have dominance in these markets. The retail regulatory measures will protect consumers in the absence of effective competition. The wholesale regulatory measures will promote competition in the retail markets, by allowing competitors to purchase the necessary inputs. This will bring benefits to consumers in terms of lower prices and greater choice in the retail markets which depend on those inputs.

S.32 In the Hull Area, Kingston has a similar position of dominance to BT in the markets considered. Ofcom has therefore concluded that it be subject to a similar regulatory regime, but that this should reflect matters of proportionality, recognising the smaller size of the potential market.

S.33 Full details of these new remedies, including their effect and the reasons for setting these conditions, are contained in the chapters outlined above.

S.34 Given the imposition of these new remedies, Ofcom considers that it is now appropriate to discontinue the regulation contained in continuation notices referred to at paragraph S.3 above. Copies of the discontinuation effecting this can be found in Annex F below.

Chapter 1
Introduction

1.1 A new regulatory framework for electronic communications networks and services entered into force on 25 July 2003. The framework is designed to create harmonised regulation across Europe and is aimed at reducing entry barriers and fostering prospects for effective competition to the benefit of consumers. The basis for the new regulatory framework is five new EU Communications Directives:

- Directive 2002/21/EC on a common regulatory framework for electronic communications networks and services (the "Framework Directive");
- Directive 2002/19/EC on access to, and interconnection of, electronic communications networks and associated facilities (the "Access Directive");
- Directive 2002/20/EC on the authorisation of electronic communications networks and services (the "Authorisation Directive");
- Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services , (the "Universal Service Directive"); and
- Directive 2002/58/EC concerning the processing of personal data and the protection of privacy in the electronic communications sector (the "Privacy Directive").

1.2 The Framework Directive provides the overall structure for the new regulatory regime and sets out fundamental rules and objectives which read across all the new Directives. Article 8 of the Framework Directive sets out three key policy objectives which have been taken into account in the preparation of this explanatory statement, namely promotion of competition, development of the internal market and the promotion of the interests of the citizens of the European Union. The Authorisation Directive establishes a new system whereby any person will be generally authorised to provide electronic communications services and/or networks without prior approval. The general authorisation replaces the existing licensing regime. The Universal Service Directive defines a basic set of services that must be provided to end-users. The Access Directive sets out the terms on which providers may access each others' networks and services with a view to providing publicly available electronic communications services. These four Directives were implemented in the UK on 25 July 2003. This was achieved via the Communications Act 2003. The fifth Directive on Privacy establishes users' rights with regard to the privacy of their communications. This Directive was adopted slightly later than the other four Directives and was implemented on 31 October 2003.

Implementation

1.3 The Act provides for functions, powers and duties to be carried out by Ofcom which include, *inter alia*, functions, powers and duties flowing from the four EU Communications Directives referred to above. Certain existing functions are also transferred to Ofcom. Ofcom assumed full functions under the Act on 29 December 2003. Prior to this date, transitional arrangements were in place as described below.

1.4 The Communications Act 2003 (Commencement Order No. 1) Order 2003 was made under sections 411 and 408 of the Act. This order commenced certain provisions of the Act for the purpose of enabling the networks and services functions under those provisions to be carried out by the Director General of Telecommunications ("Oftel") until such time as those functions were transferred back to Ofcom later in the year. References in those provisions of the Act to Ofcom were, for the transitional period, to be read as references to Oftel.

Market reviews

1.5 The new Directives require NRAs, such as Ofcom, to carry out reviews of competition in communications markets to ensure that regulation remains proportionate in the light of changing market conditions.

1.6 Each market review has three stages:

- definition of the relevant market or markets;
- assessment of competition in each market, in particular whether any undertakings have SMP in a given market; and
- assessment of the options for regulation and proposal of appropriate regulatory obligations where there has been a finding of SMP.

1.7 More detailed requirements and guidance concerning the conduct of market reviews are provided in the EU Communications Directives, the Act and in additional documents issued by the European Commission and Oftel. As required by the new regime, in conducting this review, Ofcom has taken the utmost account of the two European Commission documents discussed below.

1.8 On 11 April 2003, Oftel published a national consultation document, *Review of the retail leased lines, symmetric broadband origination and wholesale trunk segments markets* (referred to throughout this document as the "April 2003 consultation"). That document invited comments on proposed market definitions, assessments of SMP and appropriate remedies. The consultation closed on 20 June 2003.

1.9 Having considered responses to the April 2003 consultation, Oftel published *Review of the retail leased lines, symmetric broadband origination and wholesale trunk segments markets – Explanatory Statement and Notification* (referred to throughout this document as the "draft Notification"). That document set out Oftel's refined proposals in the form of a draft decision. The period for making representations closed on 6 February 2004.

1.10 Having fully considered all representations made, Ofcom is setting out in the present document its conclusions in the form of a final decision; the Notification is at Annex D.

Recommendation on relevant product and service markets

1.11 The European Commission has identified in its *Recommendation on relevant product and service markets*, adopted on 11 February 2003 (the "Recommendation"), a set of product and service markets within the electronic communications sector, in which *ex ante* regulation may be warranted. The Recommendation seeks to promote harmonisation across the European Community by ensuring that the same markets are subject to a market analysis in all member states. However, NRAs are able to regulate markets that differ from those identified in the Recommendation where this is justified by national circumstances and where the Commission does not raise any objections. Accordingly, NRAs are to define relevant markets appropriate to national circumstances, provided that the utmost account is taken of the markets listed in the Recommendation.

Guidelines on market analysis and the assessment of SMP

1.12 The European Commission has also issued guidelines on market analysis and the assessment of SMP (the "SMP Guidelines"). Ofcom is also required to take these guidelines into account when identifying a services market and when considering whether to make a market power determination under section 79 of the Act. Oftel produced additional guidelines on the criteria to assess effective competition, which can be found at www.ofcom.org.uk/static/archive/oftel/publications/about_oftel/2002/smpg0802.htm. These supplement the SMP Guidelines and replaced Oftel's effective competition guidelines issued in August 2000.

Obligation to inform the Commission and other NRAs

1.13 As required by Article 7 of the Framework Directive and sections 50 and 81 of the Act, draft decisions contained in the Notification were sent to the European Commission and to other NRAs. Comments received from the European Commission and other NRAs have been taken into consideration by Ofcom when reaching the conclusions made in this document.

1.14 As also required by Article 7 of the Framework Directive and sections 50 and 81 of the Act, decisions contained in this explanatory statement and notification are being sent to the European Commission.

Regulation pending the completion of market reviews

1.15 The new Directives allowed Member States to carry forward some existing regulation until the market reviews have been completed and new conditions are put in place. Continuation notices were therefore issued to relevant communications providers to maintain the effect of certain provisions contained in licence conditions that existed under the Telecommunications Act 1984 prior to 25 July 2003 until, *inter alia*, the market review process is finished. Further details on this continuation regime can be found at: http://www.ofcom.org.uk/static/archive/oftel/publications/eu_directives/cont_notices/index.htm.

1.16 As this document brings to a conclusion the review of the retail leased lines, symmetric broadband origination and wholesale trunk segments markets, Ofcom considers it appropriate to discontinue all the regulation that was carried over from the previous regime. Discontinuation notices to this effect can be found in Annex F below. The new conditions imposed by this document replace the regulations continued by those notices.

Scope of this review and the extent of existing regulation

1.17 This review examines the markets relating to the provision of symmetric broadband services in the United Kingdom, including leased lines. Asymmetric broadband services are considered in another review (see http://www.ofcom.org.uk/codes_guidelines/telecoms/netw_intercon_index/wholesalebroadbandreview/.

Retail services

1.18 This review will affect a wide range of retail services. It is helpful to distinguish between those retail services for which Ofcom believed it necessary to impose retail regulation, and those retail services which will be affected by the wholesale regulation imposed in this review.

Leased Lines

1.19 In relation to the first category, the only retail service for which retail regulation is imposed is retail leased lines. These are fixed permanent telecommunications connections providing capacity between two points. At the retail level, the main distinguishing features of leased lines are that they:

- provide capacity dedicated to the user’s exclusive use; and
- enable the user to send voice and data messages from one site to another.

1.20 For example, a bookseller might wish to connect all of its retail outlets to its central warehouse, to facilitate ordering, accounting etc. It can do this using a network of leased lines which can be provided by a communications provider. The lines are ‘always on’, so that there is no need for one site to dial up the other site before transmission of the data.

1.21 In this document the term “retail leased lines” refers to electronic communications services provided to end users, the provision of which consists of the reservation of a fixed amount of transmission capacity between fixed points on the same or different electronic communications networks.

1.22 Retail services may be either analogue or digital. Analogue leased lines allow the transmission of analogue signals typically in the frequency range 300 Hz to 3.4 kHz, although there are some, such as baseband circuits, that can be used to support a much wider range of frequencies.

1.23 Digital leased lines allow the transmission of digital signals and are provided in a range of bandwidths referring to the maximum data rate that can be transmitted. Digital leased lines are typically offered at bandwidths ranging from 64kbit/s to 622Mbit/s (though higher bandwidths are possible).

1.24 Under Article 18 of the Universal Service Directive, NRAs are required to consider the extent of competition in the provision of the minimum set of retail leased lines. That set has been defined by Commission Decision 2003/548/EC of 24 July 2003 as analogue leased lines, and digital leased lines of 64kbit/s and 2Mbit/s, and a full list is set out in the Official Journal of the European Commission. If it is found that the provision of such leased lines is not competitive, then NRAs are required to impose certain obligations on SMP provider(s). Accordingly, Ofcom has conducted an SMP analysis of these services (See Chapter 3 and Annex B).

1.25 Ofcom has automatically included circuits of bandwidths between the two identified by the European Commission (64kbit/s and 2Mbit/s) in the retail leased lines market as not to do so would be illogical. The majority of the circuits provided between 64kbit/s and 2Mbit/s are based on multiples of 64kbit/s and are commonly referred to as n*64kbit circuits. If circuits of 64kbit/s and 2Mbit/s have been identified as forming a retail market, all bandwidths between these values also fall within the same market.

1.26 The Commission has suggested in its Recommendation that retail leased lines of bandwidths above 2Mbit/s do not need to be subject to regulation, and has therefore not identified a market covering such leased lines. In the United Kingdom however, Ofcom has identified, for the reasons set out in Chapter 2 and Annex A, the appropriate upper boundary for the low bandwidth retail leased lines market as being 8Mbit/s rather than 2Mbit/s. Accordingly, in addition to imposing regulation on the minimum set, Ofcom is also imposing regulation on 8Mbit/s retail leased lines. For the purposes of market definition, Ofcom has therefore defined the relevant market as retail leased lines up to 8Mbit/s.

1.27 Ofcom does, however, agree with the Commission's suggestion that for retail leased lines above 8Mbit/s there is no need to consider the imposition of retail regulation. It agrees with the Commission that appropriate regulation at the wholesale level should address any competition concerns relating to the provision of these leased lines, since the competition problems associated with the provision of higher bandwidth circuits are typically less severe than those encountered at lower bandwidths.

Other retail services

1.28 In addition to retail leased lines this review will affect a range of other retail services. This category includes all retail services which use the wholesale input services that are part of the relevant wholesale markets i.e. symmetric broadband origination and trunk segments (see below). These services include the following:

- symmetric broadband internet access;
- virtual private networks;
- other data services; and
- mobile voice and data services.

1.29 In relation to these services, Ofcom believes that the most pertinent issue in the context of this review is not whether they should be subject to retail regulation, but ensuring that any dominance found to exist in the provision of the relevant wholesale inputs cannot be exploited through charging excessive prices, so raising the costs of the retail services to end users, or leveraged into the provision of retail services to the detriment of consumers. This issue concerning the scope of the wholesale access remedies is considered further in Chapter 6.

Wholesale services

1.30 There are two broad categories of wholesale services covered by this review: those relating to symmetric broadband origination and those relating to trunk segments. Within the first category, there are two broad sub-categories, namely traditional interface symmetric broadband origination ("TISBO") services and alternative interface symmetric broadband origination ("AISBO") services. The key differences between these categories and sub-categories are explained below.

Traditional interface symmetric broadband origination services

1.31 Traditional interface symmetric broadband origination ("TISBO") services provide symmetric capacity from a customer's premises to an appropriate point of aggregation, generally referred to as a node, in the network hierarchy. In this context, a "customer" refers to any public electronic communications network provider or end user. The capacity is symmetric because traffic can be carried at the same rate in both directions between the customer and the node (in contrast with asymmetric services, whereby, in a given time interval, a large volume of data may be sent in one direction, but a lesser volume in the other). In addition, although they are referred to as origination services, traffic is also terminated over these services. There are a number of existing and potential relevant services as described further below. The definition of the specific TISBO service sometimes varies, ultimately depending upon which of the retail services discussed above it is being used to provide.

1.32 The services may be contended or uncontended. Uncontended services provide dedicated capacity from one end of the service to the other, whilst contended services are shared by a number of services or customers, so that the transmit and receive path data rates are not guaranteed depending on the use of the service, though a minimum capacity is guaranteed.

Uncontended origination services

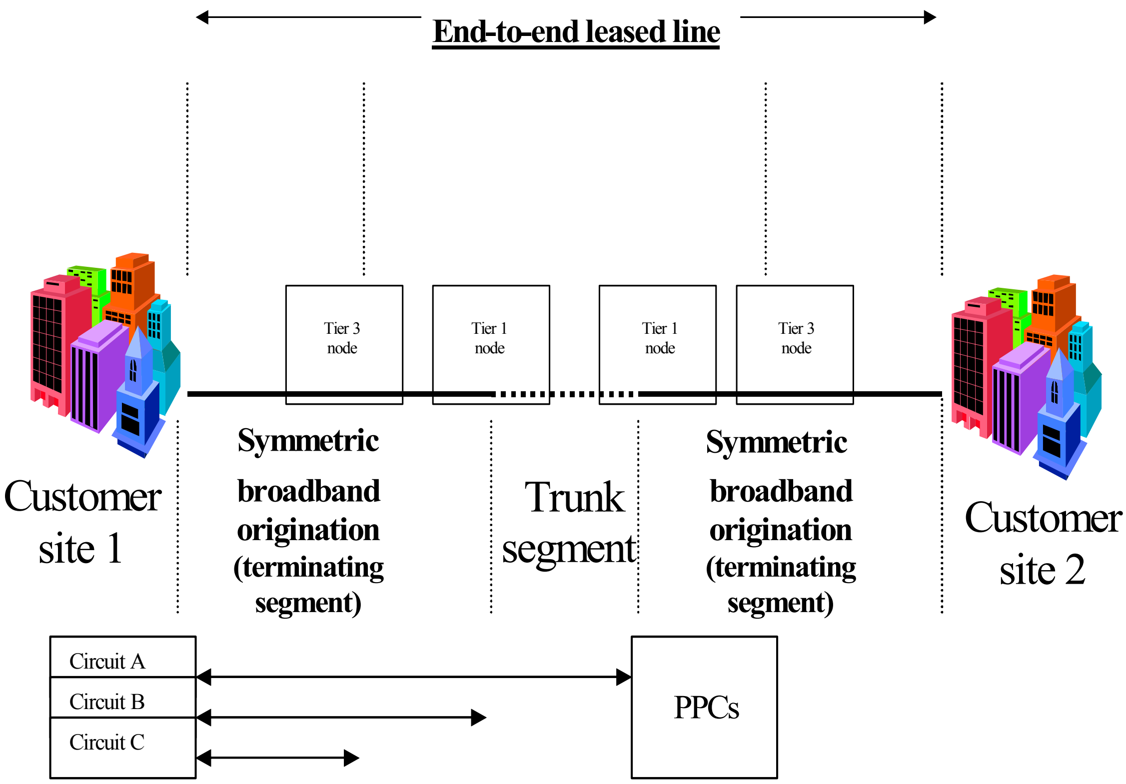
1.33 Uncontended symmetric broadband origination services include (but are not necessarily limited to) the following:

- terminating segments, which may form all or part of PPCs when supplied by a particular supplier to another communications provider;
- LLU backhaul services; and
- RBS backhaul circuits.

Wholesale terminating segment services

1.34 A communications provider can purchase a complete end-to-end leased line from another communications provider where it does not have its own network available for providing service to a customer. Alternatively, if it is able to provide the leased line partly using its own network, it has the option of purchasing the remaining parts or segments of leased lines from another communications provider. The diagram below illustrates how this works in practice.

Figure 1.1: Elements of a traditional interface retail leased line



1.35 To be more specific about the service it is helpful to refer to BT's network, since BT supplies PPCs to other communications providers where they do not have sufficient network available for providing an end to end service to a customer. The length of the PPC supplied will depend on the amount of own network used by the communications provider. In the above diagram:

- Circuit B shows the situation where a communications provider has built out to BT's main or Tier 1 node, and will need only to purchase the terminating segment;
- Circuit C shows the situation where a communications provider has built out further, for example to a Tier 3 node, and will only need to purchase a local access part of a terminating segment; and
- Circuit A shows the situation where a communications provider has built out less, and needs to purchase a trunk segment in addition to a terminating segment (see section on 'conveyance services' below).

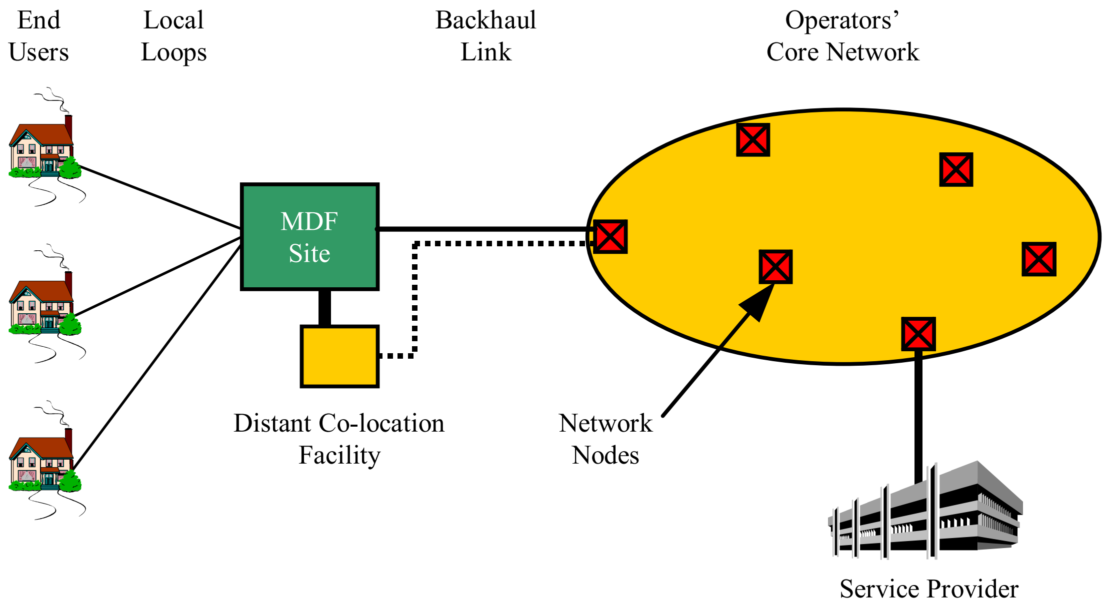
1.36 PPCs are provided at a range of bandwidths. In relation to the provision of wholesale symmetric broadband origination it is therefore necessary to consider whether separate markets exist at different bandwidths. This is discussed in Chapter 2 and Annex A.

1.37 While the discussion above has illustrated the use of this type of symmetric broadband origination service in relation to the provision of a traditional interface retail leased line, the input service is used by communications providers to provide a number of other retail services such as VPN or fixed link internet access.

LLU backhaul services

1.38 LLU backhaul services are another type of symmetric broadband origination service. Such services are the link that is used to convey digital data between another communications provider's LLU co-location facility and one of its core network nodes. Backhaul is required to connect the end users' local loop traffic to the communications provider's core network for subsequent connection to the relevant service provider. This is illustrated below.

Figure 1.2: LLU backhaul services

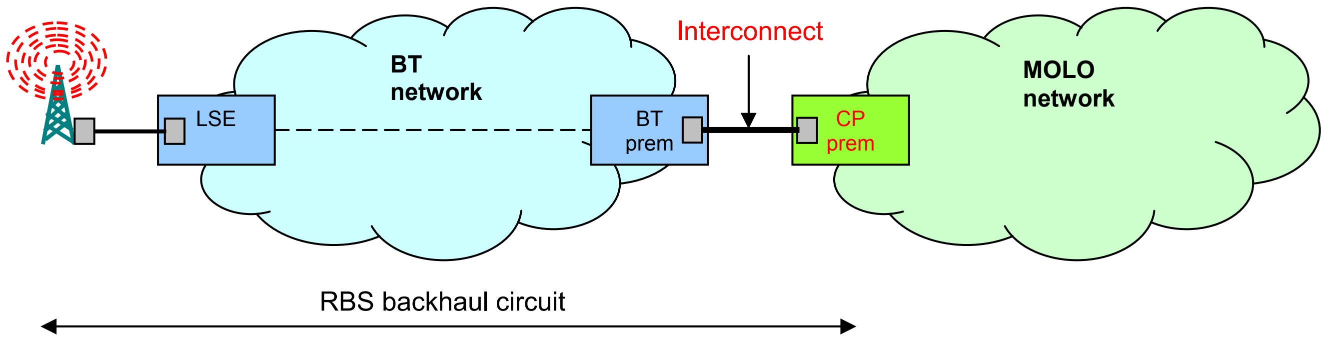


1.39 LLU backhaul services may be used as inputs to the supply of a variety of retail services, such as leased lines, symmetric broadband internet access or other data services. LLU backhaul services can be provided using traditional or alternative interfaces.

RBS backhaul circuits

1.40 A further form of symmetric broadband origination services are Radio Base Station (RBS) backhaul circuits. These provide transparent transmission capacity between a mobile communications provider's radio base station premises and that communications provider's mobile switching centre.

Figure 1.3: RBS backhaul circuits



1.41 RBS backhaul circuits are used as inputs to the supply of retail mobile voice and data services.

Contended origination services

1.42 In addition to the specific uncontended symmetric broadband origination services described above, it is likely during the period covered by this market review that other forms of symmetric broadband origination will be introduced which are both uncontended and contended. As explained in Chapter 2 and Annex A, Ofcom has concluded that contended and uncontended symmetric origination services should be considered as part of the same market. At the moment, it is possible to provide contended services using SDSL technology and such products are currently available from both BT and LLU operators.

Alternative interface symmetric broadband origination services

1.43 As well as the traditional interface symmetric broadband origination ("TISBO") services discussed above, Ofcom has identified a separate range of symmetric broadband origination services that have particular distinguishing characteristics. Ofcom is referring to these as alternative interface symmetric broadband origination ("AISBO") services.

1.44 AISBO services can be identified by the following distinguishing features *vis-à-vis* TISBO services:

- they have different (predominately Ethernet IEEE 802.3) interfaces;
- they are well suited to a particular set of end user applications (e.g. storage area networks and extending local area networks);
- they can be used to carry many types of data; and
- they can generally only be used over short distances without re-amplification – currently, up to a range of approximately 25-35km (radial distance) from the source signal (although this is not the case where such services are provided over WDM technology – see below).

1.45 In contrast, TISBO services have a CCITT G703 interface, they can easily be used to carry voice or data, they can be used over any distance, and they are generally provided using SDH technology or PDH technology. Note that although it is useful to refer to different technologies or technical specifications, AISBO is distinguished from TISBO based on the different *functionality* offered to the end user. Ofcom explains in Chapter 2 that the differences between these types of products are such that they cannot all be included within the same market from a demand-side perspective.

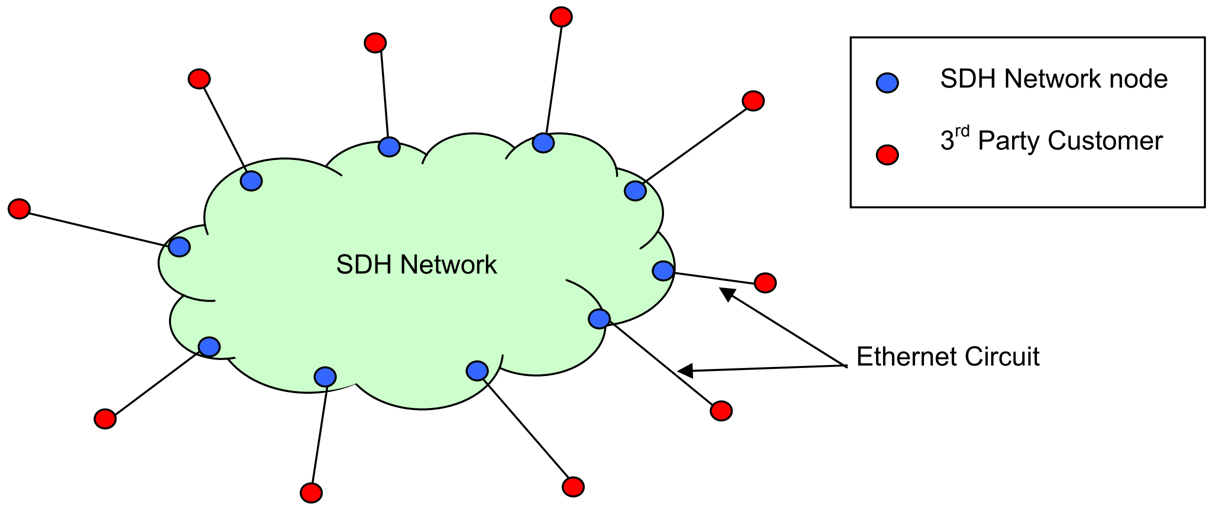
1.46 It is worth clarifying, for illustrative purposes, some of the ways in which it might be possible to use wholesale AISBO services. However, it should be noted that Ofcom is not at this stage setting out its views on the relative attractiveness of any particular options.

1.47 Firstly, at the simplest level, the services might be used by a communications provider to provide end to end leased line services to retail customers whose sites are located close together (i.e. typically, no more than 25-35km apart). Such services might consist of one link between two sites or a network of links between a collection of sites. AISBO services are currently, for example, being used to provide an alternative to SDH-based circuits for the provision of LLU backhaul.

1.48 Secondly, it might be possible for a communications provider to use these services to provide longer links by combining the wholesale AISBO service with its own network. The communications provider might choose to join the service to an Ethernet-based or an SDH-based network, and a variety of connection methods are possible. One such connection method is the subject of a current dispute raised by Energis (for details see Ofcom's competition bulletin entry http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ocases/open_all/20030723?a=87101). Ofcom will shortly be publishing a draft determination to resolve this dispute.

1.49 The diagram below shows a possible configuration of a Virtual Private Network (VPN) provided using an SDH network and Ethernet access circuits to connect third party customers to the VPN. This configuration could also be achieved using an Ethernet or ATM core network.

Figure 1.4: Possible VPN configuration



WDM services

1.50 Wave Division Multiplexed (WDM) services are services that can be used to provide transmission of multiple wavelengths of light over short or long distances using wave division multiplexers. At present, there are three broad types of wave division multiplexers available, Coarse Wave Division Multiplexer (CWDM), Dense Wave Division Multiplexer (DWDM) and Ultra Dense Wave Division Multiplexer (UDWDM).

1.51 CWDM uses lower frequency lasers and a wide spread of frequencies to enable transmission of up to 18 wavelengths over distances generally up to 60km. DWDM uses higher frequency lasers and a lower range of frequencies in order to enable transmission of up to 32 to 128 wavelengths nation-wide. CWDM is therefore cheaper and more cost effective for certain applications where fewer wavelengths and/or smaller transmission distance is needed. UDWDM, meanwhile, uses high frequency lasers and a very narrow spread of frequencies to carry a greater number of wavelengths.

1.52 Ofcom concludes in Chapter 2 that WDM services constitute an upstream market that can provide an input into both the TISBO and AISBO markets identified above. Chapter 2 sets out why this is the case and gives economic clarification of where WDM sits in relation to the other markets. It is, however, also helpful to consider this technology in terms of the Open Systems Interconnection (OSI) Reference Model.

1.53 The diagram below illustrates how the different services could fit into the OSI Reference Model with the example using Email as the application. In the case where WDM is used in the physical layer, WDM replaces Ethernet or SDH as the technology responsible for passing signals between devices via physical cables.

Figure 1.5: OSI reference model examples

OSI Model	SDH over fibre	*Ethernet over fibre*	*Ethernet over WDM over fibre*
Application	Email	Email	Email
Presentation	POP/SMTP	POP/SMTP	POP/SMTP
Session	POP	POP	POP
Transport	TCP	TCP	TCP
Network	IPv4	IPv4	IPv4
Data Link	PPP	Ethernet	Ethernet
Physical	SDH	Ethernet	WDM

POP/SMTP	Post Office Protocol/Simple Message Protocol
TCP	Transmission Control Protocol
IPv4	Internet Protocol version 4
PPP	Point to Point Protocol

Trunk Segment services

1.54 The second broad category of wholesale services covered by this review are those which provide trunk segments across core transmission networks. These trunk services are often used to provide a link between origination services where a communications provider does not have available network to its nearest point of connection. As in the case of symmetric broadband origination services, trunk segment services may be used to provide a wide range of downstream retail services.

1.55 The particular services which are provided at the moment are the same as described above for symmetric broadband origination. In the context of the provision of retail leased lines and services such as virtual private networks, PPCs which include a trunk segment (see circuit A in Figure 1.1 above) are sold. In this context the trunk segment portion is the capacity between BT's Tier 1 nodes. Additionally, LLU backhaul services and RBS backhaul circuits may, in particular circumstances, involve some trunk segment services as part of the overall service. This would correspond to intra core transmission on the BT network in Figures 1.2 and 1.3. At the moment, no standalone trunk segment services are sold to third parties, although such a service may be requested at some point in the future.

1.56 The trunk market also includes core transmission of the AISBO services mentioned above.

Existing regulation

1.57 Oftel introduced various regulatory measures over the years to promote competition and protect consumers in the UK leased lines markets, including the introduction of partial private circuits (PPCs). These measures are discussed in more detail in Chapters 4 to 9 which conclude on the need for future regulation of these markets.

Outline of this document

1.58 The rest of the document is structured as follows. Chapter 2 provides a broad overview of the market definition which is examined in detail in Annex A of this document. It examines the degree of substitutability between different services and reaches a conclusion as to how the different markets should be defined. The market definition takes into account the Commission's Recommendation and explains how and why Ofcom's approach differs, where appropriate.

1.59 Chapter 3 gives a broad overview of the assessment of which communications providers have SMP in any or all of the markets relating to leased lines, examined in detail in Annex B of this document. It uses both the criteria identified by the Commission and the additional criteria identified by Oftel/Ofcom to inform the conclusions.

1.60 Chapters 4 to 10 of this document discuss the costs and benefits of the SMP service conditions which have been imposed in light of the SMP findings discussed in Chapter 3. Chapter 5 discusses the obligations which will be imposed on BT in the retail markets, whilst Chapters 6 to 8 assess the obligations imposed in its wholesale markets. In Chapter 6, Ofcom discusses amongst other obligations a price control on PPCs, and this discussion is supported by a cost benefit analysis set out in Annex C, conducted by Ofcom in order to assess in more depth the advantages and disadvantages of imposing this regulation.

1.61 Chapter 9 discusses the obligations which will be imposed on Kingston Communications (Hull) plc ('Kingston'). Note that in all cases 'Hull' or 'the Hull Area' refers to the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc.

1.62 Chapter 10 discusses in more detail the costs and benefits of the cost accounting and accounting separation conditions. Ofcom has published separate consultation documents on the precise nature of the obligations necessary for implementing the processes of cost accounting systems and accounting separation.

1.63 Annexes D and E contain the Notifications and Directions containing the measures being imposed by Ofcom.

Related market reviews

1.64 Readers are referred to the following consultations being made by Ofcom.

1.65 As explained above, this document relates to symmetric ‘always-on’ services and in particular to leased lines. Ofcom has published a separate document relating to other types of broadband services which are asymmetric in character.

1.66 Ofcom has published a separate consultation on cost accounting and accounting separation. Chapters 4 to 9 set out in brief the cost accounting and accounting separation conditions that Ofcom considers appropriate for implementation in each of the markets relating to leased lines, while Chapter 10 sets out the conditions in more detail together with the reasons Ofcom considers these conditions should be implemented. The precise wording of the proposed conditions to be applied in these markets relating to cost accounting and accounting separation has been set out in the separate accounting document.

1.67 Ofcom has also published a separate consultation covering quality of service. This sets out proposals concerning the precise quality of service Directions to be made under the quality of service condition in most of the markets being reviewed by Ofcom. One exception to this is the wholesale trunk segments and symmetric broadband origination markets, where Oftel recently reviewed quality of service in the course of resolving the PPC dispute, and where conditions have been imposed recently. Ofcom has assessed the validity of these conditions for the new regime and has included in this Statement the precise wording of the Directions to be imposed under the quality of service condition, which will carry forward the majority of these recently introduced measures. This is discussed in more detail in Chapters 6 to 8.

Chapter 2
Summary of market definition

Identification of markets

2.1 Section 79(1) of the Act provides that before a market power determination may be considered, Ofcom must identify the markets for which, in its opinion and in the circumstances of the United Kingdom, it is appropriate to consider such a determination and to analyse that market. Ofcom is, as noted above, required to take due account of all applicable guidelines and recommendations issued by the European Commission and is required to issue a notification of its proposals. Ofcom is entitled, by virtue of section 79(5) of the Act, to issue this notification with its conclusion as to a market determination and with its conclusions for setting SMP services conditions. The notification at Annex D is a single notification containing all such conclusions.

2.2 Ofcom’s complete analysis of market definition is set out in Annex A of this document. This chapter summarises Ofcom’s findings, setting out the different markets that it has identified, and giving brief reasoning for its conclusions.

The Commission’s approach to market definition

2.3 In formulating its approach to market definition, Ofcom has paid the utmost regard to the Commission's Recommendation.

2.4 Where the market definition differs from the Commission’s Recommendation the difference is identified and justification given in the light of the national circumstances which justify this departure, in the manner prescribed by the Commission’s Recommendation.

2.5 Recital (7) of the Recommendation clearly states that the starting point for market definition is a characterisation of the retail market over a given time horizon, taking into account the possibilities for demand and supply-side substitution. The wholesale market is identified subsequently to this exercise being carried out in relation to the retail market. This approach is repeated in paragraph 3.1 of the main Recommendation and is exactly that followed by Ofcom.

2.6 Paragraph 3.1 also says: *'Because market analysis is forward-looking, markets are defined prospectively taking account of expected or foreseeable technological or economic developments over a reasonable horizon linked to the timing of the next market review’*. Again, this is the approach followed by Ofcom. The market analysis has been carried out on a forward looking basis and, where it is thought possible that market conditions may change significantly between the time of this review and the time the next leased lines market review is conducted (in approximately two years from now), these changes are identified and discussed.

2.7 Paragraph 3.1 also states that market definition is not an end in itself, but a means to assessing effective competition for the purposes of *ex-ante* regulation. Ofcom has adopted an approach by which this consideration is at the centre of its analysis. The purpose of market definition is to illuminate the situation with regard to competitive pressures. For example, Ofcom’s approach to supply-side substitution explicitly identifies as the key issue the question of whether additional competitive constraints on pricing are brought to bear by additional suppliers entering the market. Thus, the key issue is not the market definition for its own sake, but an identification of the extent and strength of competitive pressures.

2.8 Paragraph 4 of the Recommendation states that retail markets should be examined in a way which is independent of the infrastructure being used, as well as in accordance with the principles of Competition Law. Again this approach is at the heart of Ofcom's analysis. Ofcom's approach is based on a Competition Law based assessment of markets and an assessment of the extent to which switching among services by consumers constrains prices, irrespective of the infrastructure used by the providers of those services.

Identification of markets

2.9 There are two dimensions to the definition of a relevant market: the relevant products to be included in the same market and the geographic extent of the market. Ofcom's approach to market definition follows that used by UK competition authorities (see *Office of Fair Trading Market Definition Guideline, OFT 403*, March 1999, that can be found at: www.oft.gov.uk/Business/Legal+Powers/ca98+publications.htm#guide) and is in line with those used by European and US competition authorities.

2.10 Market boundaries are determined by identifying constraints on the price-setting behaviour of firms. There are two main competitive constraints to consider: how far it is possible for customers to substitute other services for those in question (demand-side substitution); and how far suppliers could switch, or increase, production to supply the relevant products or services (supply-side substitution) following a price increase.

2.11 The concept of the 'hypothetical monopolist test' is a useful tool to identify close demand-side and supply-side substitutes. A product is considered to constitute a separate market if a hypothetical monopoly supplier could impose a small but significant, non-transitory price increase (SSNIP) above the competitive level without losing sales to such a degree as to make this unprofitable. If such a price rise would be unprofitable, because consumers would switch to other products, or because suppliers of other products would begin to compete with the monopolist, then the market definition should be expanded to include the substitute products.

2.12 Sometimes an additional consideration is whether there are common pricing or purchasing constraints across customers, services or areas such that they should be included within the same relevant market even if demand and supply side substitution are not present.

Order of market analysis and remedies

2.13 This document defines the relevant markets both at the retail and the wholesale level. The analysis of retail market definitions is logically prior to the definition of upstream (wholesale) markets. This is because demand for upstream services is a derived demand, i.e. the level of demand for wholesale inputs depends on the demand for outputs (retail services). The definition of a retail market is likely to influence the market definition, and consequently any assessment of SMP, in related upstream markets. Where wholesale services are an important input into the retail services, the relevant upstream markets are generally (at least) as broad as the demand-side substitutes in the relevant retail market.

2.14 Because of this, Ofcom's preferred approach to market definition is to define markets sequentially, starting with those that are furthest downstream, and ending with those that are furthest upstream.

2.15 The purpose of Ofcom's market definition exercise is to inform its assessment of market power and identify appropriate remedies in the relevant market. It is therefore important that, at the wholesale level, markets are defined using the assumption that there is no regulation in any market. This approach ensures that the assessment of market power at the wholesale level does not depend on a retail market definition that is influenced by wholesale remedies. The method avoids the potential problem of circularity which could arise in market definition. However, the market definition used in any assessment of market power in downstream markets must be conducted in the presence of any proposed regulation in markets that are further upstream, since the presence of any such regulation may provide a constraint at the retail level by removing barriers to entry.

2.16 Ofcom's preferred approach is therefore to:

- define all markets in the absence of regulation, starting downstream and then moving upstream, with the aim of defining the most upstream market;
- assess market power in the furthest upstream market, defined in the absence of regulation, and identify appropriate remedies in that upstream market. Then;
- redefine all markets further downstream in the presence of that upstream regulation, and use these redefined markets for the assessment of market power and appropriate remedies in these downstream markets. This analysis starts upstream and then moves downstream, because Ofcom needs to assess whether upstream remedies remove downstream market power and the need for downstream remedies.

The application of this approach to leased lines markets is discussed below.

Application to market analysis

2.17 Ofcom has identified the following vertical levels in this review:

- retail end-to-end leased lines using traditional interfaces, split by bandwidth; and (in a separate market – see below) retail leased lines using alternative interfaces without bandwidth split;
- wholesale trunk segments; and
- wholesale symmetric broadband origination.

2.18 These three broad product groupings can be characterised as being vertically linked, with retail products being the furthest downstream and wholesale symmetric broadband origination (both traditional interface or TISBO and alternative interface or AISBO) the furthest upstream. Trunk segments are further downstream than symmetric broadband origination since symmetric broadband origination circuits are at the periphery of the network, providing connections to end users, whilst trunk segments are part of 'core networks', providing capacity between nodes on core networks.

2.19 Based on this upstream/downstream distinction, and in the light of the introductory text above, Ofcom has conducted its market analysis, i.e. market definition and assessment of market power and appropriate remedies, sequentially, as outlined in the table below. The numbers 1 to 11 indicate the logical order in which

Ofcom's analysis has taken place. The physical order of these analyses in this document is different for ease of presentation, e.g. there is one section on retail market definition which covers both analyses 1 and 9 in the Table. The analysis has been undertaken for both geographic areas defined, i.e. the UK excluding Hull and the Hull area.

Table 2.1 – Order of market analysis

	Market definition	**SMP assessment**	**Remedies**
Retail	1. In absence of retail or wholesale regulation 9. In presence of proposed terminating and trunk segment remedies, but no retail regulation	10. In presence of proposed terminating and trunk segment remedies, but no retail regulation	11. In presence of proposed terminating and trunk segment remedies, but no retail regulation
Trunk segments	2. In absence of retail or wholesale regulation 6. In absence of retail regulation, but in presence of proposed terminating segment remedies	7. In absence of retail regulation, but in presence of proposed terminating segment remedies	8. In absence of retail regulation, but in presence of proposed terminating segment remedies
Symmetric broadband origination	3. In absence of retail or wholesale regulation	4. In absence of retail or wholesale regulation	5. In absence of retail or trunk regulation

Substitution possibilities and additional constraints

2.20 Markets are defined first on the demand side. The analysis of demand side substitution is undertaken by considering if other retail services could be considered as substitutes by consumers, in the event of the hypothetical monopolist introducing a SSNIP above the competitive level.

2.21 Supply side substitution possibilities are then assessed to consider whether they provide any additional constraints on the pricing behaviour of the hypothetical monopolist which have not been captured in the demand side analysis. In this assessment, supply side substitution will be considered as a low cost form of entry, which could take place within a relatively short period of time. The OFT Guidelines on *Market Definition*, OFT 403, March 1999, consider this period to be one year. That is, for supply side substitution to be relevant, there would need to be additional competitive constraints arising from entry into the supply of the service in question, from suppliers who are able to enter quickly and at low cost, by virtue of their existing position in the supply of other services. As discussed earlier, only those supply side substitution possibilities that are viable in the absence of unregulated wholesale inputs will be considered as relevant to the analysis.

2.22 There might be suppliers who provide other retail and wholesale services but who might also be materially present in the provision of demand side substitutes to the service for which the hypothetical monopolist has raised its price. However, such suppliers are not relevant to supply side substitution, as they supply services already identified as demand side substitutes. As such, their entry has already been taken into account and so supply side substitution cannot provide an additional competitive constraint on the hypothetical monopolist. However, the impact of expansion by such suppliers can be taken into account in the assessment of market power.

2.23 A third factor that should be considered is whether there are common pricing or purchasing constraints across customers, services or areas such that they should be included within the same relevant market even if demand- and supply- side substitution are not present.

Relationship between market reviews and Competition Act 1998 and Enterprise Act 2002 investigations

2.24 The economic analysis carried out in this document is for the purposes of determining the relevant markets and whether an undertaking or undertakings have SMP in the relevant markets. It is without prejudice to any economic analysis that may be carried out in relation to any investigation or decision pursuant to the Competition Act 1998 (relating to the application of the Chapter I or II prohibitions or Article 81 or 82 of the EC Treaty) or the Enterprise Act 2002.

2.25 The fact that economic analysis carried out for a market review is without prejudice to future competition law investigations and decisions is recognised in Article 15(1) of the Framework Directive which provides that:

*"…The recommendation shall identify …markets …the characteristics of which may be such as to justify the imposition of regulatory obligations …**without prejudice** to markets that may be defined in specific cases under competition law…" [emphasis added]*

2.26 This intention is further evidenced in the Commission's SMP guidelines which state:

*Paragraph 25: "… Article 15(1) of the Framework Directive makes clear that the market to be defined by NRAs for the purpose of ex ante regulation are **without prejudice to those defined by NCAs** and by the Commission in the exercise of their respective powers under competition law in specific cases." (repeated in paragraph 37) [emphasis added]*

*Paragraph 27: "…Although NRAs and competition authorities, when examining the same issues in the same circumstances and with the same objectives, should in principle reach the same conclusions, it cannot be excluded that, given the differences outline above, and in particular the broader focus of the NRAs' assessment, markets defined for the purposes of competition law and markets defined for the purpose of sector-specific regulation **may not always be identical**". [emphasis added]*

*Paragraph 28: "…market definitions under the new regulatory framework, even in similar areas, **may in some cases, be different** from those markets defined by competition authorities." [emphasis added]*

2.27 In addition, it is up to all communications providers to ensure that they comply with their legal obligations under all the laws applicable to the carrying out of their businesses. It is incumbent upon all communications providers to keep abreast of changes in the markets in which they operate, and in their position in such markets, which may result in legal obligations under the Competition Act 1998 (either relating to the Chapter I or II prohibitions or Article 81 or 82 of the EC Treaty) or Enterprise Act 2002 applying to their conduct.

Decision on the relevant market(s)

2.28 The market definitions in this chapter are based on the evidence available to Ofcom and take account of comments made in the consultation on the draft notification which closed on 6 February 2004. Annex G lists the names of organisations which made non confidential responses to that consultation exercise.

Markets identified

2.29 In summary, Ofcom has identified the following relevant product markets in the UK excluding Kingston upon Hull:

- retail low bandwidth traditional interface leased lines (up to and including 8Mbit/s) – this includes analogue circuits of relevant bandwidths, and incorporates the minimum set of retail leased lines identified by the Commission;
- wholesale low bandwidth traditional interface symmetric broadband origination ("TISBO") (up to and including 8Mbit/s);
- wholesale high bandwidth traditional interface symmetric broadband origination ("TISBO") (above 8Mbit/s up to and including 155Mbit/s);
- wholesale very high bandwidth traditional interface symmetric broadband origination ("TISBO") (above 155Mbit/s);
- wholesale alternative interface symmetric broadband origination ("AISBO"); and
- wholesale trunk segments (note that this market extends to the whole of the UK).

2.30 In addition, Ofcom has identified the following relevant product markets in the Kingston upon Hull area:

- retail low bandwidth traditional interface leased lines (up to and including 8Mbit/s) – this incorporates the minimum set of retail leased lines identified by the Commission;
- wholesale low bandwidth traditional interface symmetric broadband origination ("TISBO") (up to and including 8Mbit/s);
- wholesale high bandwidth traditional interface symmetric broadband origination ("TISBO") (above 8Mbit/s up to and including 155Mbit/s); and
- wholesale alternative interface symmetric broadband origination ("AISBO").

2.31 Although Ofcom has considered retail traditional interface leased lines at bandwidths above 8Mbit/s and retail alternative interface leased lines during its analysis, Ofcom does not consider it necessary to formally identify (for the purposes of section 79 of the Act) retail markets covering such products since it considers that regulation at the wholesale level is sufficient to meet regulatory objectives in these areas.

Issues discussed in identifying markets

2.32 Ofcom sets out below and in Annex A how it has arrived at the above market definitions. Ofcom discusses the following issues in arriving at these definitions:

1. retail symmetric vs asymmetric services
2. retail leased lines vs other data services
3. retail leased lines using traditional interfaces vs retail leased lines using alternative interfaces
4. retail leased lines bandwidth distinctions
5. retail leased lines analogue vs digital circuits
6. geographic markets
7. retail leased lines – Hull area
8. wholesale trunk vs symmetric broadband origination
9. wholesale trunk bandwidth distinctions
10. wholesale trunk geographic considerations
11. TISBO vs AISBO
12. TISBO bandwidth distinctions
13. AISBO bandwidth distinctions
14. Wave Division Multiplexed services
15. SBO geographic considerations.

Retail markets

Issue 1: Symmetric vs asymmetric – rationale for separate markets for retail leased lines and asymmetric broadband products and services

2.33 Ofcom considers that in the UK, retail leased lines (offered using both traditional and alternative interfaces) and asymmetric broadband products and services are in separate markets. Ofcom has reached this conclusion on the assumption that there is an absence of any regulation, as well as an assumption of the presence of wholesale remedies.

2.34 On the demand side, Ofcom is of the view that retail leased line customers do not consider the currently available asymmetric broadband services to be close substitutes for leased lines because these asymmetric services do not offer symmetric dedicated capacity. Even if uncontended asymmetric broadband services were to become available within the lifetime of this market review, potential substitutability would be restricted because an asymmetric service can only be used to offer a leased line at a speed up to the lower of the speeds in each direction (usually upstream). The symmetrical capability is a key feature of a leased line. Ofcom therefore considers that in the absence of wholesale remedies, asymmetric broadband services do not constrain leased lines.

2.35 In the absence of wholesale remedies, existing suppliers of asymmetric broadband services relying on LLU do not create any, or a sufficiently material, competitive constraint to justify broadening the market definition because they are few and do already sell retail leased lines. The other suppliers of asymmetric broadband services can only provide supply-side substitutes if they could have access to the wholesale symmetric inputs. However in the absence of wholesale regulation, the requisite inputs would not be available and this type of substitution would not be possible.

2.36 The presence of wholesale remedies does not modify the conclusion reached by the demand-side substitution analysis in the absence of wholesale remedies. This is because the reasoning is independent of the availability of cost based wholesale inputs, i.e. PPCs.

2.37 The presence of wholesale regulation, such as PPCs, is expected to make it easier for suppliers of asymmetric broadband services to enter the supply of leased lines. However Ofcom has identified factors (e.g. PPC lead times, barriers to switching and to expansion) that are likely to reduce the strength of the competitive constraint these potential entrants would impose on the hypothetical monopolist in case of a SSNIP, so that they do not satisfy the criteria for supply-side substitution.

2.38 Therefore, in the presence of wholesale remedies, Ofcom considers that retail leased lines and asymmetric broadband services are in separate markets because demand-side substitution and supply-side substitution are not powerful enough to make unprofitable a SSNIP by a hypothetical monopolist.

Responses to the draft notification – symmetric v asymmetric products

2.39 No comments were received on this issue.

Conclusions – symmetric v asymmetric products

2.40 For the reasons set out above, Ofcom has concluded that retail leased lines and asymmetric broadband services are in separate markets.

Forward look

2.41 Ofcom has considered the likelihood of competitive or technical developments that might affect the markets identified during the period covered by this review. Ofcom's view is that there are likely to be no developments that would require a change in these market definitions within a 2-3 year period. However, Ofcom will keep market conditions under review. This is particularly important in high technology markets such as these.

Issue 2: Retail leased lines and other data services

2.42 Ofcom has concluded that retail leased lines constitute a separate market from other data services. As discussed at paragraphs 2.33-2.40 above, Ofcom considers that asymmetric and symmetric services are in separate markets. However, Ofcom also considers that leased lines are in a separate retail market to other (symmetric) data products, such as symmetric broadband Internet access and VPNs. The rationale for sub-dividing symmetric services into separate markets is explained below.

Demand side substitution

2.43 A leased line has the following important features:
- it offers dedicated, symmetric transmission capacity between two points, providing guaranteed bandwidth (either contended or uncontended) that is available 24/7;
- it is highly flexible – users can determine and manage what services are carried over it;
- it offers a secure communication channel; and
- it is normal for leased lines to be supplied with high levels of customer care.

Leased lines therefore represent one of the most versatile and highest quality electronic communications services available to retail consumers.

2.44 In comparison, other managed data products such as VPNs and Internet access, are generally contended/shared at some point, and thus do not provide guaranteed bandwidth. Further, the end user has less flexibility, as there is more third party management. Also, these products are not usually provided with a high level of customer care as standard and although it is possible for consumers to purchase enhanced service levels on some products, it normally falls short of leased line service levels.

2.45 Due to the versatility of leased lines they can, in some instances, be used as inputs into other data services, although the reverse is not true. Use of retail leased lines in the provision of other data services is discussed further under supply side substitution below.

2.46 Given the unique characteristics of a leased line it is considered that consumers who require a leased line are unlikely to switch to an alternative data service if a hypothetical monopolist was to increase the price of leased lines by 5 to 10 per cent above the competitive level. Ofcom therefore believes that other symmetric data products are not demand-side substitutes for leased lines.

Supply side substitution

2.47 A proportion of the existing suppliers of other symmetric data products (such as managed data products) supply these products by buying retail leased lines. Thus if a hypothetical monopolist increases retail leased lines prices by 5 to 10 per cent above the competitive price, these suppliers would have to pay 5 to 10 per cent more for their inputs. They would thus not be in a position to impose a competitive constraint on the hypothetical monopolist.

2.48 Although competitive cable access networks already exist in the UK they are not suitable for providing leased lines, because cable networks in the UK are inherently asymmetric and it would be extremely inefficient to use them to provide symmetric services such as leased lines, and to ‘up-grade’ them would take considerable time and cost. In addition, leased lines tend to be purchased predominantly by businesses and hence are typically deployed in business districts, whereas the cable networks in the UK have been deployed mainly in residential areas.

2.49 Therefore in the absence of wholesale regulation existing suppliers of other symmetric data products/services would not be able to constrain the activities of a hypothetical leased line monopolist to the competitive level through supply side substitution.

Responses to the draft notification – retail leased lines and other data services

2.50 One communications provider has suggested that all retail leased lines and retail data services are demand side functional substitutes.

2.51 Ofcom does not share this view. As discussed at paragraphs 2.44-2.46 above, leased lines have different characteristics and are more versatile than other data services. These unique characteristics of a leased line mean that consumers who require a leased line are unlikely to switch to an alternative data service, even if prices increased by 10% above the competitive level.

Conclusions – retail leased lines and other data services

2.52 The above supply-side and demand-side analysis leads Ofcom to conclude that retail leased line services and other symmetric data services are in separate markets.

Issue 3: Retail traditional interface leased lines vs retail alternative interface leased lines

2.53 Ofcom has concluded that retail traditional interface leased lines and retail alternative interface leased lines are in separate markets. Technological and cost differences between the two mean that a significant number of traditional interface leased lines users would be unwilling to switch to alternative interface leased lines, and *vice versa*. As such, the availability of alternative interface leased lines would not constrain the pricing behaviour of a hypothetical monopolist provider of traditional interface leased lines, and *vice versa*, with the result that alternative interface and traditional interface leased lines are in separate markets.

Demand side substitutability

2.54 As discussed in Chapter 1, the term 'alternative interface' refers to a broad category of products that provide a point-to-point fibre connection (including those products referred to as local area network extension services (LES)) supplied, generally, by means of Ethernet[1] over fibre. As Ethernet is currently the most widely used form of alternative interface, these services have been referred to as Ethernet-based services for large parts of this document, though it should be noted that Ethernet is not the only form of alternative interface (as discussed in Chapter 1 above). These circuits have some similarities with SDH-based (traditional interface) leased lines as outlined in paragraph 3.28 of the April 2003 consultation. The key characteristics in question are that they offer symmetric dedicated transmission capacity between two points, providing guaranteed bandwidth that is available 24/7, and are generally uncontended (i.e. they are not shared with other users). However, Ofcom has identified a number of limitations to the degree of substitutability between Ethernet and SDH circuits. These are discussed below.

End user applications

2.55 Ethernet and SDH are different ways of packaging data. The relative merits of the two vary according to the required end user application, for example:

- Ethernet-based services cannot readily be used to convey certain types of traffic, e.g. conventional voice (although it can support Voice Over IP), ISDN, Centrex or national virtual private networks (VPN), or for transferring data based on protocols other than Ethernet; and
- SDH-based services are not generally suitable for use in certain data applications such as storage area networks (SANs).

2.56 On a forward-looking basis, it has been suggested to Ofcom that since customers are increasingly moving to IP virtual private networks (IPVPN) as a substitute for ATM and Frame (over SDH), it could be argued that the importance of

[1] Other interfaces are also used in some instances. While Ethernet is currently the most widespread, others (e.g. Fibre Channel) may increase in importance over time.

the first difference (Ethernet services not supporting conventional voice) will diminish over time. However, Ofcom's view is that the demand for IPVPN-type solutions is currently not sufficiently widespread to alter the market definition, and that this position is unlikely to change to a sufficient extent during the period of this review to warrant the finding of an alternative definition.

Distance constraints

2.57 The provision of Ethernet circuits is constrained to relatively short distances in certain cases. For example, the retail LES circuits sold by BT are in many cases restricted to a maximum radial distance of 25km (or 35km in certain cases).

2.58 Ofcom's view is that this factor is unlikely to be as significant a consideration in assessing substitutability as the functionality differences identified above. For example, while an Ethernet-based circuit delivered by means of a direct fibre connection is generally limited in distance to a maximum of 25km, longer end-to-end circuits can be provided using Ethernet-based tails plus a core (SDH/other) network. Such circuits are central to the plans of the communications providers who have requested that BT provide a wholesale network access version of its LES circuits, and they fall within the retail alternative interface market since in all respects other than distance constraints they resemble alternative interface circuits delivered direct over fibre. Additionally, Ethernet-based circuits can be supplied over WDM technology (see below), in which case distance constraints do not apply.

2.59 Notwithstanding the above caveats, given the distance restrictions that currently apply to a significant proportion of the Ethernet-based circuits that are currently in supply, this issue will restrict substitutability to some extent, and as such has been taken into account by Ofcom in its analysis.

Availability

2.60 Standard SDH circuits offer 99.95% availability of service, whilst Genus SDH circuits offer 99.995% availability. Standard Ethernet-based circuits offer a slightly lower level of availability than standard SDH circuits, 99.9%, although dual provision Ethernet-based circuits offer the same availability as Genus SDH circuits, 99.995%. Given the closeness of these figures, Ofcom's view is that considerations of service availability are unlikely to be a key factor in the analysis.

Criteria for demand side substitutability

2.61 The differences in functionality (traffic type and range restrictions) outlined above represent a significant barrier to demand side substitution between Ethernet-based and SDH-based products, though as technology develops this is likely to lessen. In analysing this issue it is useful to consider three groups of consumers, namely:

(a) customers whose preferences are such that either an Ethernet-based or SDH-based solution will meet their needs (e.g. they want a solution to carry data traffic that can be routed over SDH or Ethernet);

(b) customers whose preferences are such that only an SDH-based solution will meet their needs – an Ethernet-based solution will not (e.g. they want to transmit voice (and possibly also data) traffic); and

(c) customers whose preferences are such that only an Ethernet-based solution will meet their needs – an SDH-based solution will not (e.g. needing a high level of accuracy regarding data transfer times).

2.62 Customers in groups (b) and (c) would never switch between Ethernet-based and SDH-based products following a SSNIP and would therefore never view the two as close substitutes.

2.63 Some customers in group (a) might switch, depending on price and other considerations. However, even a very detailed survey exercise would not make it possible to assess the relative size of this group on a forward looking basis. Ofcom has therefore informed its analysis by means of a price comparison, as outlined below.

Price comparisons and conclusions on demand side substitutability

2.64 The extent to which demand-side substitution by group (a) would be likely to happen can be informed by a comparison of the retail prices of BT's SDH-based and LES circuits. Ofcom has conducted such a comparison which concludes (see Annex A) that SDH-based circuits are considerably more expensive than LES circuits. In the light of these differences in price, it is unlikely that the price of SDH-based circuits would constrain the price of Ethernet-based circuits, since the preferences of any consumer whose technical requirements were satisfied by Ethernet-based circuits would not be altered by a price increase of 5%-10% to Ethernet circuits, since these would remain considerably cheaper than the SDH-based alternative.

2.65 It does, however, seem possible that the price of Ethernet-based circuits could constrain that of SDH-based circuits. If the prices of Ethernet-based circuits were significantly below their SDH based equivalents, an increase in the price of SDH-based circuits might be expected to lead to customers switching away from SDH-based circuits. In view of the limitations of Ethernet-based circuits described above, it is difficult to assess the proportion of consumers who would be likely to switch from SDH-based to Ethernet circuits. In view of the similarities in functionality outlined above, it could be argued that at least a degree of substitution would occur.

2.66 However, Ofcom's view is that such substitution is unlikely to be widespread. This is because it is highly unlikely that a significant number of customers in group (a) would currently be using (or considering using) SDH-based solutions if their needs were met equally well by an Ethernet solution, given the large price differential. While it is possible that there are consumers who have opted for SDH-based circuits because they were not aware of the availability and prices of Ethernet-based circuits, Ofcom does not propose to rely on such an argument as Ethernet circuits have been available for some time and it has received comments from various sources indicating that leased lines consumers are relatively well informed about the choices available. Ofcom is therefore of the view that SDH-based and Ethernet-based circuits are not sufficiently close demand side substitutes to be included in the same market. On a forward-looking basis the availability of Ethernet-based circuits may increase, e.g. as distance restrictions become less important. However, Ofcom's view is that such a consideration is unlikely to be relevant within the timeframe of this review given that distance restrictions currently apply to the vast majority of Ethernet-based circuits that have been sold.

Supply side substitutability

2.67 Ofcom has considered whether supply side substitutability at the retail level would lead to a widening of the existing market definition to include both SDH-based and Ethernet-based circuits. Such supply side substitutability would exist if, in the absence of wholesale regulation, the suppliers of Ethernet circuits were able to provide SDH-based circuits at low cost and within a relatively short period of time. However, since the majority, if not all, of the suppliers of Ethernet-based circuits already supply SDH-based circuits (and vice versa), Ethernet suppliers would not place any additional constraints on a hypothetical monopolist supplier of SDH-based circuits (and vice versa).

2.68 Ofcom's view is therefore that supply side substitution would not lead to a widening of the traditional interface market definition to include Ethernet-based circuits.

Responses to the draft notification – traditional interface leased lines vs alternative interface leased lines

2.69 Several communications providers commented that distance limitations of products should not be used to define markets as technological innovation will extend reach. It was suggested that the current distance limitations of BT's products were self-imposed for commercial reasons. It was also disputed that SDH-based leased lines could not be used to offer storage area networks.

2.70 Ofcom recognises that the distance limitations currently imposed on alternative interface products are likely to become less of a factor as technology changes and new innovations are made. However, distance limitations do still exist, and will for the period covered by this market review, and these will impact on the choice of whether to use a traditional or alternative interface product. Similarly, Ofcom also recognises that SDH-based leased lines can be used to provide SANs, though generally Ethernet-based circuits are used due to cost reasons.

2.71 One communications provider suggested that in its experience, customers were not well informed about the capabilities of alternative interface leased lines and their substitutability for traditional interface services. As outlined above, evidence received by Ofcom from other communications providers suggests that customers are well informed about the capabilities of alternative interface leased lines.

2.72 Ofcom remains of the view that the differences in the functionality and prices of traditional and alternative interface retail leased lines is sufficient to mean that insufficient customers would switch between the two to make price changes of 5%-10% unprofitable.

Conclusions – retail traditional interface leased lines vs retail alternative interface leased lines

2.73 As outlined above, Ofcom's view is that SDH-based (traditional interface) and Ethernet-based (alternative interface) circuits form distinct economic markets at the retail level.

Issue 4: Retail leased lines – bandwidth distinctions

2.74 For the UK excluding Kingston upon Hull, Ofcom has found there to be separate markets for low, high and very high capacity retail traditional interface leased lines and a single market for retail alternative interface leased lines. Ofcom has identified two breaks in the chain of substitution between traditional interface retail leased lines of different bandwidths, namely above 8Mbit/s and above 155Mbit/s. Thus Ofcom's definition of low bandwidth retail leased lines departs from the Commission's recommendation that defines the market for the minimum set of retail leased lines. A detailed analysis of Ofcom's view regarding the delineation of leased lines markets by bandwidth is included in Annex A.

Traditional interface - bandwidth distinction at 8Mbit/s

2.75 Ofcom considers that the split between low and high bandwidth traditional interface leased lines in the UK occurs above 8Mbit/s rather than above 2Mbit/s principally because there is a greater likelihood of 2Mbit/s leased lines constraining the price of 8Mbit/s leased lines than there is of 8Mbit/s leased lines constraining the price of 34Mbit/s leased lines. 8Mbit/s leased lines cannot constrain the prices of other services since new 8Mbit/s leased lines are no longer available, due to technical obsolescence.

2.76 BT's standard charges for retail 8Mbit/s circuits are very expensive relative to PPC charges, i.e. the rental charge on a per km basis is more expensive than even that for a single 34Mbit/s wholesale symmetric broadband origination circuit, or four 2Mbit/s wholesale symmetric broadband origination circuits. In this context, all customers with an 8Mbit/s circuit would, if offered the opportunity, switch to a symmetric broadband origination service, even without the 8Mbit/s charge being increased. This could be interpreted as suggesting that 8Mbit/s circuits might form a distinct economic market.

2.77 However, it is clear that the above comparison between retail prices for end-to-end leased lines and service-based wholesale charges for symmetric broadband origination is a simplified assumption. Because of this, Ofcom has analysed BT's relatively low London (020 7) retail charges for 8Mbit/s circuits. Doing so avoids the possibility of reaching the non-meaningful conclusion that symmetric broadband origination 'dominates' 8Mbit/s retail circuits without a SSNIP.

2.78 Ofcom's analysis suggests that a relatively large group of customers would be likely, following a SSNIP, to switch from the use of a single 8Mbit/s retail circuit to multiples of 2Mbit/s symmetric broadband origination services. However, the likelihood of customers switching from the use of multiples of 8Mbit/s retail circuits to the use of 34Mbit/s symmetric broadband origination appears to be considerably smaller.

2.79 Ofcom therefore considers that the price of 8Mbit/s circuits is likely to be constrained by the availability of 2Mbit/s circuits, and not by that of 34Mbit/s circuits, and that 8Mbit/s circuits should therefore be considered to be part of the low bandwidth market.

2.80 Consequently, in its assessment of the regulatory options for the retail market in Chapter 5, Ofcom has conducted regulatory option appraisals of the Commission's minimum set of retail leased lines, which fall within the jurisdiction of Article 18 of the Universal Service Directive (dealing specifically with the minimum set), circuits of bandwidths between the minimum set identified (i.e. 64kbit/s-2Mbit/s) and 8Mbit/s retail traditional interface leased lines, which fall within the jurisdiction of Article 17 of the Universal Service Directive (dealing with all other retail services).

Traditional interface - bandwidth distinction at 155Mbit/s

2.81 Ofcom has considered whether a further bandwidth split might be appropriate based on demand-side considerations. In particular, Ofcom has considered whether 622Mbit/s and above circuits might form a distinct economic market.

2.82 The significant bespoke element of pricing (which exists at both the wholesale and retail level) complicates any attempt to compare cost based charges for 155 and 622 Mbit/s circuits. However, Ofcom's analysis, using various sets of assumptions, suggests that there is a relatively narrow range of bandwidth demands within which a SSNIP would induce switching between 155Mbit/s and 622Mbit/s. This has led Ofcom to conclude that a break in the chain of substitution occurs here.

Alternative interface - no bandwidth distinction

2.83 Ofcom has considered whether there should be a similar bandwidth split for alternative interface retail leased lines as it has identified for traditional interface leased lines. Ofcom has carried out a substitution analysis to determine whether the bandwidth distinctions identified for traditional interface leased lines apply similarly to alternative interface leased lines.

2.84 The costs of provision of Ethernet-based alternative interface circuits do not vary significantly by bandwidth. This is because the costs of duct and fibre, which are generally invariant with bandwidth, form a very high proportion of the total cost of provision, even at higher bandwidths. This is supported by confidential information submitted by communications providers during the April 2003 consultation period. This information suggested that there is very little difference in the one-off capital expenditure required to provide a 1Gbit/s product over and above a 10Mbit/s product since the main cost difference relates to the cost of the network terminating equipment (NTE). The relative cost difference between the NTEs for the two products is approximately £1,000, which equates to only around 10 metres of dig (when a proxy, supported by data supplied by competing infrastructure providers, of £100/metre is used) and dig forms the main cost element of providing an alternative interface circuit. It is therefore not appropriate to define distinct markets according to bandwidth, as has been done in other leased lines markets, because the higher bandwidth Ethernet-based circuits do competitively constrain the prices of lower bandwidth Ethernet-based circuits.

2.85 Ofcom has, therefore, concluded that there is no break in the chain of substitution between different bandwidth alternative interface retail leased lines and that this forms a single market.

Supply-side substitution

2.86 Demand-side factors suggest that the breakpoints in the chain of substitution between low and high bandwidth traditional interface circuits occurs between 8Mbit/s and 34Mbit/s circuits and above 155Mbit/s – otherwise all other traditional interface circuits are linked to those of higher and lower bandwidth by a chain of substitution. Similarly, demand-side factors suggest that all alternative interface circuits are linked to those of higher and lower bandwidths by a chain of substitution. The key question in terms of supply-side substitution is therefore whether the breakpoints for traditional interface circuits are removed by supply-side substitution – if so, Ofcom's market definition needs to be broadened accordingly.

2.87 Ofcom notes that suppliers of leased lines generally supply circuits at a variety of bandwidths. The aggregation of current suppliers of low bandwidth traditional interface circuits – the 'hypothetical monopolist' - therefore already includes all significant suppliers of higher bandwidth traditional interface circuits, and vice versa. Switching on the supply side from one bandwidth to another would not therefore constitute new entry or an additional competitive constraint. Therefore, such suppliers are not relevant to supply-side substitution since they supply services already identified as demand-side substitutes.

2.88 In addition, in the absence of wholesale regulation, Ofcom considers that supply-side substitution of this type at the retail level is unlikely, because the costs of local access to a new site that would be incurred by a new entrant are significant and include sunk costs, such as digging and ducting. The absence of access to cost based wholesale inputs therefore means that other communications providers would not be able quickly or cheaply to commence the supply of these services to undermine the price increase of a hypothetical monopolist.

2.89 Ofcom has therefore concluded that there is no supply-side substitution between the higher and lower bandwidth traditional interface leased line markets.

Responses to the draft notification – bandwidth distinctions

2.90 OPTA suggested in its response to the draft notification that the European Commission's minimum set of leased lines only covers 64kbit/s and 2Mbit/s circuits, rather than all the bandwidths between these two end points.

2.91 Ofcom has automatically included circuits of bandwidths between the two identified by the European Commission in the retail leased lines market as not to do so would be illogical. The majority of the circuits provided between 64kbit/s and 2Mbit/s are based on multiples of 64kbit/s and are commonly referred to as n*64kbit circuits. If circuits of 64kbit/s and 2Mbit/s have been identified as forming a retail market, all bandwidths between these values also fall within the same market. As outlined in Annex A, Ofcom is of the view that a chain of substitution links circuits of bandwidths from 64kbit/s to 2Mbit/s on the demand side. For the purposes of market definition, Ofcom has therefore defined the relevant market as retail leased lines up to 8Mbit/s.

2.92 Whether or not bandwidths between 64kbit/s and 2Mbit/s should be included in the minimum set is to a large extent irrelevant anyway. Ofcom has carried out an assessment of the low bandwidth retail leased lines market and has identified that BT has SMP in this market, as set out in Chapter 3 and Annex B below. Ofcom considers that the reasons it has provided for this assessment fully justify the SMP finding and notes that the European Commission did not raise concerns about the proposals in its own response to the draft notification.

Conclusions – bandwidth distinctions

2.93 Considerations of demand-side substitution have been key in Ofcom's market definition analysis. These have led Ofcom to conclude that there are the following retail leased lines product markets:

- traditional interface products with bandwidths up to and including 8Mbit/s;
- traditional interface products with bandwidths above 8Mbit/s (i.e. from 34Mbit/s) up to and including 155Mbit/s;
- traditional interface products with bandwidths above 155Mbit/s (i.e. 622Mbit/s and above); and
- alternative interface products of all bandwidths (currently supplied at bandwidths of 10Mbit/s and above).

2.94 Although Ofcom has considered traditional interface retail leased lines at bandwidths above 8Mbit/s and alternative interface retail leased lines during its analysis, Ofcom does not consider it necessary to formally identify (for the purposes of section 79 of the Act) retail markets covering such products, as it considers that regulation at the wholesale level is sufficient to meet regulatory requirements.

Forward look

2.95 Ofcom has considered the likelihood of competitive or technical developments that might affect the markets identified during the period covered by this review. Ofcom's market definition has taken into account the anticipated technological advances highlighted in communications providers' responses, in order to ensure that the definition remains robust on a forward looking basis. Ofcom's view is that there are no further developments that would require a change in these market definitions within a 2-3 year period. However, Ofcom will keep market conditions under review.

Justification for inclusion of 8Mbit/s circuits in low bandwidth traditional interface market against the requirements in the Commission's Recommendation

2.96 As noted above, the inclusion of 8Mbit/s circuits in the retail low bandwidth traditional interface leased lines market has the effect of requiring Ofcom, in its assessment of the regulatory options for the retail market in Chapter 5, to conduct regulatory option appraisals of both the Commission's minimum set of retail leased lines, and 8Mbit/s retail leased lines. It also represents a departure from the Commission's Recommendation on markets, and as a consequence Ofcom is required to justify the departure specifically against the three criteria set out in the Recommendation, namely:

1. barriers to entry and the development of competition;
2. 'dynamic aspects' i.e. whether the market is dynamically moving towards effective competition with new entrants and increased innovation; and
3. the relative efficiency of competition law.

Ofcom has set out in paragraphs 2.74 to 2.89 its justifications for including 8Mbit/s leased lines in the low bandwidth traditional interface market. The justifications below set out the justification for imposing regulation on these circuits.

1. Barriers to entry and the development of competition

2.97 The provision of 8Mbit/s circuits is characterised by very high barriers to entry (sunk costs). This is reflected by BT's high market share in low bandwidth traditional interface circuits, which is in the region of 70% by revenue at the retail level (and in the region of 45%-50% by revenue in the case of 8Mbit/s circuits alone).

2.98 In the interests of proportionality and the fact that the 8Mbit/s standard is becoming obsolete (see Chapter 5), Ofcom has decided not to mandate the provision of 8Mbit/s PPCs. This means that barriers to entry in the 8Mbit/s segment of the retail leased lines market will remain high and that competition is unlikely to develop.

2. Dynamic aspects

2.99 Since no new 8Mbit/s circuits are being sold, this product is characterised by very high barriers to expansion since there are no new customers available over which alternative retail (or wholesale) providers will be able to compete with existing suppliers. This is due to the technical obsolescence of the 8Mbit/s standard.

2.100 These factors, together with the barriers to entry alluded to above, mean that there is no prospect of competition developing in this segment of the low bandwidth market.

3. Relative efficiency of competition law

2.101 The relative efficiency of competition law is discussed in detail in Chapter 4.

Issue 5: Analogue and digital circuits

2.102 Ofcom has concluded that analogue retail leased lines are in the same market as digital retail leased lines. This accords with the Commission's Recommendation which states in section 4.2.3 that: *"It is not felt necessary to identify specific markets for each category of leased line in the minimum set since it is likely that the market structure will be similar for each sub-set".*

2.103 On the demand side, a substitution analysis shows that analogue and digital leased lines should be viewed as being in the same market because, on a forward looking basis, the price of digital leased lines is likely to constrain the price of analogue leased lines. This is explained in more detail in Annex A.

Responses to the draft notification – analogue and digital circuits

2.104 No comments were received on this issue.

Conclusions – analogue and digital circuits

2.105 For the reasons set out above, Ofcom has concluded that analogue and digital leased lines fall within the same market.

Issue 6: Geographic markets

2.106 In addition to the products to be included within a market, market definition also requires the geographic extent of the market to be specified. The geographic market is the area within which demand side and/or supply side substitution can take place. Ofcom has considered the geographic extent of each relevant market covered in its market review consultation documents.

2.107 In the draft notification, Ofcom proposed that national markets existed for both retail and wholesale leased lines

Responses to the draft notification – geographic markets

2.108 In its response to the December 2003 consultation, BT made a number of arguments to suggest that Ofcom should define local markets. Ofcom's view on this issue is outlined below.

2.109 BT argued that Ofcom had failed to take proper account of geographic variations, as required by the EU Directives, when defining leased lines markets. BT suggested that the economics of communications networks is such that geography is a critical factor. BT stated that this is because other communications providers have built out networks in areas of highest population and business density, meaning that competition may be more intense in these areas than in the rest of the country. BT suggested that different conditions of competition exist in and between, in particular, metropolitan areas, and that distinct geographic markets should be defined to take account of this.

2.110 In its response, BT provided two key pieces of evidence to support its view that Ofcom should define sub-national markets, and that doing so would result in a reduction in the number of areas in which it was dominant in certain product markets. These were:

- a critique of Oftel's analysis of geographic markets carried out by Professor George Yarrow. This report discussed the high level rationale for defining markets and assessing market power on a regional basis; and
- an assessment of the level of competition (via the estimation of market shares and examination of competitor network presence) in a number of different geographic areas carried out for it by the consulting firm Analysys. This report concluded that, when various geographic areas were grouped together into broad categories, BT was likely to have a low (below 40%) market share in a number of metropolitan areas despite its share being higher than this on a nationwide level

2.111 The question of geographic markets is a complex one that raises many economic and policy issues, which will need regular review as markets develop. Ofcom therefore intends to continue to conduct analysis relating to geographic markets across the sector in the context of its Strategic Review of Telecommunications. Ofcom's current view on this issue in the context of leased lines markets is outlined below.

Geographic market definition in telecommunications markets

The SSNIP test

2.112 The definition of geographic markets in telecommunications is generally problematic; and in the leased lines market particularly so. This is because the standard economic approach to market definition, based on an analysis of demand and supply-side substitution, will lead to the identification of a multitude of highly localised geographic markets, since, as outlined in, for example, the December consultation:

- if a business requires a leased line between two of its premises, a circuit between two nearby locations will not generally be a substitute, i.e. there is no demand side substitution.

- suppliers with network facilities in one part of a city will not normally be able to extend their reach into another part of the city without substantial investment, i.e. there is limited supply-side substitution

2.113 Defining localised markets on the basis of the absence of local demand or supply substitution would not provide a practicable basis for an assessment of the extent to which consumers will be captive to a particular supplier. In the extreme, it could mean that leased lines between any pair of locations (buildings or perhaps streets) would constitute a separate market, resulting in literally thousands of separate markets, particularly in the case of retail and origination markets. An analysis of the market at this level of detail would not be practical or desirable, and as such it has not been advocated by Ofcom, BT, or any of the other communications providers. Given this consensus, factors other than the outcome of the SSNIP test must be taken into account. These are discussed below.

Additional considerations in market definition

2.114 Given the arguments outlined above, it is necessary to take account of other factors over and above standard demand and supply-side substitutability when defining geographic markets in telecoms. Two key such factors are that a national market will exist in the presence of:

- **a cluster market (buying patterns)** - in certain cases, products or areas may be considered to be in the same product or geographic market on the basis of a cluster market analysis if consumers purchase the relevant services as a bundle. This may mean that buyers are not solely concerned with the individual prices of particular products or in particular areas, but with the total price of the bundle. They could in practice purchase the product on a national basis; and
- **a common pricing constraint** - i.e. areas in which a firm voluntarily offers its services at a geographically uniform price may constitute a single market.

2.115 Ofcom has not considered these factors in any particular order or heirachrchy. Ofcom's view is that the presence of either of these considerations is sufficient to suggest the existence of a national market, unless there is strong evidence to the contrary based on some other consideration(s). These factors, especially the common pricing constraint, have been important to the definition of a national market in other market reviews (such as wholesale broadband access, even though market shares vary between cabled and non-cabled areas).

2.116 In cases where none of the above factors (substitution, common pricing constraint, cluster markets) can be used to define a market, there is no "standard" approach to market definition. In such cases, it is likely to be necessary to aggregate individual markets into broader groups, and to assess the level of competition in each of these.

Variations in competitive conditions

2.117 If an "aggregating local markets" approach is taken then it may be appropriate to do this by considering the similarities, or lack thereof, in competitive conditions between areas. This approach has been advocated by BT. This possibility is set out in at paragraph 56 of the European Commission's Guidelines on market analysis and the assessment of market power, which state that in cases where there is a sufficient degree of variety in competitive conditions between areas (what a sufficient level might be is not specified), distinct local markets should be defined:

"The definition of the geographic market does not require the conditions of competition between traders or providers of services to be perfectly homogeneous. It is sufficient that they are similar or sufficiently homogeneous, and accordingly, only those areas in which the conditions of competition are 'heterogeneous' may not be considered to constitute a uniform market."

2.118 However, the relevance of competitive conditions to geographical market definition does not signal an expectation that market shares would be the same, or even similar, across a single geographical market. As indicated by Simon Bishop and Mike Walker in *The Economics of EC Competition Law* :

"There is no way in which a "similar market shares" condition can be derived from the fundamental question of market definition - is a collection of products in a given region worth monopolising? Moreover, there is no relationship between a "similar market shares" condition and the concept of substitution in demand or supply. There is no basis whatsoever for expecting that, within a relevant geographic market, shares in all areas of that market should be the same as for the market as a whole. Indeed, it would be unusual if they were the same throughout."

2.119 The approach advocated by BT is first to analyse competitive conditions (specifically market shares and network reach / number of competitors) in a large number of distinct areas (e.g. "metropolitan areas"), based on a hypothesis about competitiveness in each of these, and then, where appropriate, to group these areas together into groups in which market shares and competitive conditions are similar to each other.

2.120 Such an approach, i.e. to define markets based on relatively small variations in competitive conditions will tend to blur the line between (i) market definition and (ii) the assessment of market power, two stages in competitive analysis which are normally distinct. However, as argued above, a degree of "aggregating" is likely to be necessary in order to reach a sensible market definition in the absence of demand- and supply-side substitution.

2.121 BT's chosen method of aggregation has some merits. Most obviously, in the case of those product markets in which SMP would be found at a national level, it should lower the risk of applying regulation to local areas in which competition was effective. However, it also runs the risk of erroneously finding competition in segments of the market in which BT is in fact dominant. There is therefore a trade-off, in deciding whether or not to aggregate markets at a national or sub-national level. This trade-off is summarised in the paper written on behalf of BT by Professor Yarrow (paragraphs 44 to 49). Assuming that BT would be found to be dominant if the market is analysed at the national level and that it would not be dominant in some geographic areas if a more localised analysis were carried out, the trade-off is between:

(a) defining localised markets - which may lead to an absence of *ex ante* regulation in some areas in which BT is dominant; and
(b) defining a national market - which may lead to the imposition of *ex ante* regulation on BT in some areas in which it is not dominant.

2.122 Ofcom's view is that the appropriateness of the first option will tend to be greater in cases where the following conditions are satisfied:

(i) there is a readily identifiable area in which competitive conditions are significantly different from those in other areas;
(ii) competitive conditions are relatively homogenous within this area, i.e. they do not vary on a highly localised basis;
(iii) the wholesale product market in question is one for a new, innovative service, in which the imposition of *ex ante* conditions might be detrimental to the development of competition;
(iv) barriers to entry to the market (e.g. sunk costs) are low, meaning that entry to the market will be relatively straightforward, meaning that the imposition of *ex ante* conditions at the wholesale level may be inappropriate; and
(v) the market is not characterised by national buying patterns at the retail level – this is important because, for example, pockets of dominance within an area found to be broadly competitive at an aggregate level could prevent firms from competing at the national level to some extent.

2.123 The first two conditions are in practice likely to be decisive in many cases. In the context of most product markets in the UK, the Kingston upon Hull area is a key example. In this area, unlike the rest of the UK, Kingston Communications is by some distance the biggest communications provider, with a much wider network reach than other operators *throughout* the Hull area, and a very high market share of all telecoms services.

2.124 In the case of deciding whether or not to divide the rest of the UK into distinct geographic areas, Ofcom has considered the full range of conditions above, together with other criteria such as common pricing constraints and cluster markets.

Geographic market definition for leased lines

2.125 Since the SSNIP test does not by itself form a useful basis for defining geographic markets in the context of leased lines product markets (as discussed at paragraphs 2.112 and 2.113 above), Ofcom has considered the ‘common pricing constraint’ and ‘buying patterns’ factors, as is outlined below.

Buying Patterns

Retail traditional interface leased lines

2.126 As outlined above, in cases where buying often takes place at a national level, a national market may exist.

2.127 Many large companies have multiple sites, often in a number of parts of the country, and it is not uncommon for them to have a preference for purchasing leased lines from a single supplier. Two of BT’s largest competitors at a national level have advised Ofcom that well over half of their retail leased lines business stems from the sale of circuits that form part of a “network solution” provided to a single customer and bought from a single supplier. In many cases these network solutions are bought on a national basis, or at least on the basis of the whole area that the customer operates in. Ofcom has also been advised that the demand for leased lines products increasingly comes from systems integrators and other resellers, who tend to source inputs from a smaller number of network operators, and, where possible, to use a single operator per customer network.

2.128 This factor suggests that suppliers of leased lines face competitive conditions on a national, or at least a very broad, geographic basis at the retail level. In this context, it could be argued the presence of competitors in a single area, for example London, may not be sufficient to constrain the price of BT even in London, if competitors are not also located in other parts of the country. Because large firms have multiple sites they require internal high capacity networks that are widely spread on a geographic basis. Only BT, which unlike its much smaller rivals does not have a network reach that is restricted to specific high density areas, is likely to be in a strong position to offer such solutions.

TISBO, AISBO and trunk segments

2.129 It is important to note that the buying patterns factor is of primary importance at the *retail* level. This is because at the wholesale level BT's competitors could in principle purchase network segments from each other in order to fill gaps in their ability to self-supply. The extent to which such arrangements will be able to impose a competitive constraint at the wholesale level will depend on a number of factors, including:

- the ability of smaller operators to interconnect with each other as opposed to BT given their smaller network reach and the balance of commercial advantage perceived by them in doing so; and
- the extent to which customer networks built up using the inputs of three or more network operators represent can provide the same quality of service as one based on wholesale inputs provided by two or fewer operators.

2.130 At present, Ofcom understands that there are not many points of interconnection between communications providers (other than BT) that are suitable for interconnection of leased lines, both in absolute terms and relative to the number of potential points of interconnection between communications providers and BT. While this remains the case, the "buying pattern" argument suggests that wholesale markets should be defined on a national basis.

Pricing Behaviour

2.131 As outlined above, when a communications provider charges a uniform national price, and is not required to do so by regulation, this can be taken as an indicator of the existence of a national market. BT has recently been in a position to de-average its pricing in all of the markets covered by this review. This means that it is worth considering the uniformity of pricing on a product market specific basis.

Traditional interface retail leased lines

2.132 BT currently applies a distinct pricing scheme to the CLZ. This may reflect some or all of the following examples of unique characteristics of the London area:

- shorter average circuit length;
- shorter extra required dig per customer by BT;
- different unit costs in the London area; and
- a differing level of competition being faced by BT in the London area

2.133 In the light of its pricing policies, Ofcom's view is that it is unlikely that BT faces a national pricing constraint at the retail level, although it prices on a uniform basis in the rest of the UK outside London.

Trunk Segments

2.134 BT's charges for trunk segments have not been set by Ofcom. BT continues to price for trunk segments on a national basis rather than setting route-by-route charges. To the extent that this is not the result of regulation, this provides an argument for suggesting that it is appropriate to define a national market for trunk segments on the basis of a common pricing constraint. BT is currently free to de-average its charges on a geographic basis but has so far chosen not to do so. The current evidence therefore provides support for a common pricing constraint in the market for trunk segments. It is not straightforward to speculate how this might change in future. Evidence of widespread de-averaging by BT (and other suppliers) would be taken into account in defining geographic markets in the next market review.

TISBO

2.135 For the last two years BT has been obliged to provide PPCs to other communications providers on request, based on charges set by Oftel in 2002. These charges were set on a national basis and BT has thus far not attempted to charge below these levels in specific areas. Prior to that regulation, BT marketed and priced such circuits as if they were retail circuits; that is to say, different prices were charged in Central London from the rest of the UK. This means that Ofcom is not of the view that a common current pricing constraint implies a national market in the case of TISBO (although there are other reasons for arguing that a national market definition is appropriate, as is outlined below).

AISBO

2.136 At the retail level, BT has hitherto charged a national price, with no variation applied to the CLZ or any other area, for its retail alternative interface (LES) products. BT has been under no regulatory obligation to adopt a national pricing scheme, since prior to this review neither Oftel nor Ofcom had investigated this market, found BT to be dominant in it, or imposed regulation. Whilst it is true that widespread take-up of these services is a relatively recent development and that BT's pricing structure may change in the future, Ofcom notes that this charging structure, and indeed the exact level of most charges, is well established. This suggests that it might be appropriate to define a national market for AISBO circuits on the basis of a common pricing constraint. This means that defining a national market will not impede the development of competition for this product set.

Conclusion on SSNIP, buying patterns and pricing behaviour criteria

2.137 The table below summarises the implications of each of the factors that Ofcom has considered in assessing the appropriate geographic segmentation in leased lines markets.

Table 2.2: Criteria for assessing geographic markets

Product market	SSNIP test	National buying patterns	National pricing constraint
Retail traditional interface	Proliferation of highly localised markets –	Strongly suggests a national market	Suggests CLZ and Hull area separate from

Product market	SSNIP test	National buying patterns	National pricing constraint
			the rest of the UK
TISBO	impractical to analyse	May suggest a national market	Inconclusive
Trunk segments			Suggests a national market
AISBO			Suggests a national market

2.138 The considerations highlighted in the above table suggest that:

- the market for retail traditional interface leased lines is national, based on the existence of national buying patterns;
- the market for trunk segments and AISBO are national based on the existence of a national pricing constraint; and
- whilst national buying patterns may provide some support for the existence of a national market in the case of TISBO, further analysis of other factors is desirable to validate the use of such an assumption.

2.139 Ofcom has therefore examined possibilities other than a national market in the context of these markets, including the one advocated by BT in its response to the December consultation. If local markets could be defined in practice where competitive conditions were markedly more homogeneous than for a national market, the above provisional conclusion would require reconsideration.

Variations in competitive conditions

2.140 As stated above, unless leased lines markets are defined on something akin to a street-by-street basis or the buying patterns or common pricing constraints criteria strongly support a national market, some degree of aggregation of local markets is required. Due to the highly localised nature of competition in leased lines markets:

- any aggregates that are identified as “competitive” are likely to have non-competitive areas within them; and
- similarly, any areas in which (for example) BT is found to be dominant will have some areas in which there may be effective competition.

2.141 This is explored below by some analysis carried out by Ofcom for the Central London area and for Manchester. Ofcom would expect these to be two of the areas in the UK in which widespread competition would be most feasible - BT has drawn attention to the alleged competitiveness of the Central London area in particular.

TISBO and AISBO markets

2.142 The analysis below is applicable to both TISBO and AISBO markets as the same access networks of communications providers are used to provide both products.

Analysis of geographic markets in London

2.143 Ofcom has undertaken a direct comparison of the network reach of BT relative to other communications providers in major metropolitan areas. Using data purchased from *Experian* and network maps provided by communications providers, Ofcom plotted the fibre and duct networks of four of the largest competitors to BT against the locations of businesses with 250 or more employees (the top end of the large business sites market). The 250 employee cut-off point was used since, based on discussions with industry, Ofcom is of the view that this is a reasonable proxy for the size of business that will be a potential customer of leased line services. The cost of a leased line is less likely to be justifiable in the case of smaller businesses.

2.144 Discussions with communications providers suggested that they are typically prepared to extend their networks by 20-100 metres in order to serve a new customer. The significant upfront revenue associated with high bandwidth requirements might induce communications providers to dig for longer distances, similarly in certain built-up areas where dig costs and times are likely to be higher, communications providers might only be prepared to dig distances towards the bottom of the range given above. In its analysis Ofcom has analysed the relative network reach of communications providers using a dig distance of 300 metres. Inconveniently, this relatively high figure is in Ofcom's view the smallest figure that can be used for a robust analysis. This is because of intrinsic inconsistencies with postcode data that identifies the location of businesses (which is accurate to within 50-80 metres) and inaccuracies associated with standard geo-coding procedures. To the extent that the 300 metres figure is too high, this approach will lead to an overstatement of the extent of competition and an understatement of BT's advantage over other communications providers.

2.145 The outcome of this analysis suggests that for London (defined as the area bounded by the M25 motorway), 50%-60% of business premises are within 300 metres of competitors' networks. This statistic, whilst not useful as an indicator of BT's actual market share, shows that BT has a large number of "captive" potential customers, not less than 40% to 50% of the total within this area. This means that, regardless of market shares for the London area as a whole, on a forward looking basis BT will have a considerable advantage over other players in the provision of leased lines within the London area. Even if BT's current market share within the London area as a whole were below a threshold normally indicative of dominance, a large proportion of customers (perhaps in the region of half) would not be able to look beyond BT for supply.

2.146 Purely for the purposes of illustration, Ofcom considered narrowing the area to the Central London Zone (defined as the area bounded by the 020 7 dialling code), rather than the M25 area. It found that the networks of competitors were within a dig of 300 metres of 60%-85% of 250+ employee business sites. (Ofcom has two observations on the use of the CLZ as a geographic market. The first is that the CLZ is defined on the basis of a dialling code area, and as such has little relevance to the availability of leased lines. Secondly, defining market boundaries within a city area may lead to erroneous conclusions since in practice competitive conditions are likely to be identical in the areas immediately inside and outside any identified boundaries.) This analysis suggests that a significant proportion, albeit apparently smaller than the proportion in the broader M25 area, of potential customers within the CLZ are "captive" customers of BT. Within the CLZ, Ofcom carried out an additional piece of analysis, comparing the number of points of presence (points at which leased lines customers can easily be connected) of BT with that of the next largest communications network in London. This comparison showed that BT has seven hundred times the number of points of presence. This statistic lends further substantial support to the proposition that BT is likely to have a significant advantage over other communications providers in a substantial proportion of the CLZ.

2.147 There currently remains a significant dependency upon BT for wholesale inputs in metropolitan areas. For example, BT sells nearly 12,000 PPCs, some 21% of the national total, within the London area – despite a number of alternative communications providers having large amounts of network in London. This suggests that even in areas where they have their own networks, alternative communications providers are still heavily dependent on BT providing PPCs to enable them to compete effectively with BT's retail leased lines products.

Analysis of geographic conditions in Manchester

2.148 Ofcom has carried out a similar assessment to the one outlined above for Manchester. This city was chosen as one of the next largest cities in the UK when ranked by the number of business sites and therefore one of the most likely places for competitors to have undertaken significant build of local access network.

2.149 The distribution of large businesses in the Manchester area is fairly wide, rather than being concentrated on a single central business district. With this in mind, the M60 has been used as a proxy boundary of the Manchester area, capturing both the centre of Manchester and the Trafford area. Ofcom's analysis of this area shows that only around 50-60% (in the case of the second largest operator) of business customers are within 300 metres of competitors' networks. This gives BT a large number of "captive" potential customers of at least 40% to 50% of the total within this area. This means that, regardless of market shares for the Manchester area as a whole, on a forward looking basis BT will have a considerable advantage over other players in the provision of leased lines within the Manchester area. Even if BT's current market share within the Manchester area as a whole were below a threshold normally indicative of dominance, a large proportion of customers (probably around half) would not be able to look beyond BT for supply.

Trunk segments

2.150 As outlined in paragraph 2.138, Ofcom is of the view that there is a national market for trunk segments. This view was primarily informed by BT's national pricing behaviour. However, for completeness, Ofcom has considered the extent to which the trade-off described in paragraph 2.140 is applicable. If, as suggested by BT, the trunk market were to be defined on the basis of conveyance between broad metropolitan areas, there would be a degree of variation in the number of competitors within these areas giving rise to similar issues to those outlined in the preceding sections. However, given that the trunk market is defined between points of aggregation, of which there are a finite number, the problem would be somewhat less marked. This means that, as outlined below, Ofcom has put more weight on the national pricing constraint argument in the case of trunk segments.

Conclusions of local market analysis

2.151 As described in conditions (i) to (v) in the generic discussion of competitive variations in paragraph 2.122 above, a national market definition is likely to be appropriate in cases where competitive conditions vary on a highly localised basis so that moving from a national market to a more disaggregated approach does not in practice lead to geographic markets which are significantly more homogeneous than the national market.

2.152 As noted above, London and Manchester were chosen for analysis as these were good examples of areas where a relatively high degree of competition might be expected to exist. In practice, Ofcom's analysis shows that competition within these areas may not be significantly more homogeneous than in the country (excluding the Hull area) as a whole. Even in areas where the density of demand and hence presence of competitors is most widespread, the potential for competition is far from uniformly effective throughout those areas.

2.153 This means that, were Ofcom to make a segmentation into local markets based on the fact that some areas were suggested to be broadly competitive, this finding would be erroneous in the sense that BT would face little or no competition within substantial parts of these areas. This argument is particularly relevant in the case of origination and retail markets, since, as described above, competitive conditions vary widely within a broadly defined geographic area such as a particular city. The local network analysis therefore strongly supports the conclusions reached in paragraph 2.138. Ofcom's view is that a national market definition is appropriate, given:

- the highly localised nature of competition in leased lines markets meaning that there would be significant uncompetitive areas within any geographic areas that were declared to be broadly competitive in aggregate;

- the national buying patterns that exist, especially at the retail level; and

- a common pricing constraint is a material factor in trunk and AISBO markets.

2.154 On balance, Ofcom regards the arguments in favour of definition of local geographic leased lines markets as fairly weak at present, while recognising that both the impact of regulation and market developments may cause a different conclusion to be reached in a future review. Certainly, the matter will need to be reconsidered in the next Market Review. For this Review however, Ofcom concludes that it is right to define a national geographic market (excluding Hull) in the case of each of the 5 product markets considered.

2.155 Ofcom returns to the trade-off described in paragraph 2.122 above (and identified by Professor Yarrow in his paper) and the conditions outlined in paragraph 2.123:

- Ofcom's network analysis of London and Manchester shows that any credible sub-national market would have significant pockets in which BT would be in a position to exploit its market power if no regulation were applied; but
- in cases where some segments of a nationally-defined market are in reality subject to vigorous competition, applying *ex ante* regulation of those segments is unnecessary, and could be damaging in certain cases.

2.156 On balance, the national approach is more consistent with the objectives of regulation defined in the Communications Act than the more disaggregated local approach. In the context of wholesale leased lines markets, the key competition issue that will be faced by Ofcom is likely to be ensuring that BT's competitors are supplied with the necessary wholesale inputs in order to enable them to compete with BT on something approaching an equal basis. A reliance on *ex post* regulation (such as there would be if Ofcom were to declare certain broad areas to be competitive in the knowledge that there were uncompetitive pockets within these areas) would not be an effective means of satisfying this goal.

2.157 Ofcom's proposal not to impose a requirement for geographic averaging, should largely mitigate the commercial impact on BT of (unnecessary) regulation of a competitive segment.

Conclusion on geographic markets

2.158 For the reasons set out above, Ofcom has concluded that it is appropriate to define the following geographic markets for each product group:

- (i) Retail traditional interface leased lines: a national market (excluding the Hull area) on the basis of national buying patterns;
- (ii) Low and high bandwidth TISBO: a national market on the basis that highly localised variations in competitive conditions would distort any sub-national market analysis;
- (iii) AISBO: a national market on the basis that national pricing constraints appear to exist and that highly localised variations in competitive conditions would distort any sub-national market analysis; and
- (iv) Trunk segments: a national market on the basis that national pricing constraints exist.

Issue 7: Retail leased lines – Hull area

2.159 Ofcom considers that the Hull area constitutes a separate market from the rest of the UK, for the reasons set out below (the text below being equally applicable in the cases of traditional and alternative interfaces).

2.160 For retail markets in the Hull area, a leased line should be regarded as a permanent connection providing capacity between two points in Kingston upon Hull (although this may be part of a leased line between a point in Kingston upon Hull and a point elsewhere in the UK). This can be used directly by a consumer or can form an input for the provision of other retail services.

2.161 As outlined above in paragraph 2.123, Ofcom is of the view that the competitive conditions in the Hull area are significantly different from the rest of the UK..

2.162 Kingston Communications is by some way the largest provider of communications products and services in the Hull area and has a much wider network reach than any other communications provider *throughout* the Hull area and a very high market share in all telecommunications services.

2.163 On this basis, Ofcom has concluded that for retail traditional interface leased lines, the Hull area constitutes a separate geographic market to the rest of the UK.

2.164 Similar considerations apply to TISBO and AISBO circuits and Ofcom has therefore defined Hull as a distinct geographic market for these products as well.

Responses to the draft notification – the Hull area

2.165 No comments, other than those that have previously been taken into account following previous consultations, were received on this issue.

Conclusion on retail leased lines – Hull area

2.166 For the reasons set out above, Ofcom has concluded that the Hull area forms a separate geographic market to the rest of the UK for retail leased lines.

Wholesale markets

Symmetric broadband origination and leased lines

2.167 This review covers leased line services at the retail level and corresponding services and products at the wholesale level.

2.168 A leased line is defined as a permanently connected link between two premises dedicated to the customer's exclusive use. The corresponding services and products at the wholesale level are the wholesale inputs required to offer this dedicated transparent transmission capacity at the retail level. One feature of this type of dedicated capacity is that it must offer symmetric services. These wholesale inputs must therefore be capable of providing symmetric services at a given bandwidth.

2.169 The wholesale inputs required to provide retail leased lines can also be used to provide other symmetric services at the retail level, namely symmetric broadband Internet access and other symmetric data services. Since all these retail services offer some type of broadband services at the retail level, Ofcom has decided to refer to the corresponding wholesale inputs as symmetric broadband origination and trunk segments.

2.170 As discussed in Chapter 1, symmetric broadband origination can itself be further subdivided between the traditional interface symmetric broadband origination ("TISBO") services such as wholesale terminating segments (PPCs), RBS and LLU backhaul and SDSL, and alternative interface symmetric broadband origination ("AISBO") services used as inputs for retail services such as LES and as an alternative form of LLU backhaul. The economic rationale for splitting the market in this way is discussed below. First, though, Ofcom discusses the distinctions between symmetric broadband origination and trunk services.

Issue 8: Wholesale trunk vs symmetric broadband origination

2.171 Previously, in the context of both broadband and leased lines markets, distinct economic markets relating to core conveyance have been identified (see the PPC Phase 1 Direction issued by Oftel in June 2002). The diagram in Chapter 1 illustrates the breakpoint between trunk segments and symmetric broadband origination that has been previously used. In the context of this review, Ofcom has retained this distinction, based on the criteria outlined below.

Demand-side analysis

2.172 On the demand side, trunk and symmetric broadband origination are complements – they cannot be demand-side substitutes since they relate to dedicated capacity provided across different elements of the hypothetical monopolist's network.

Supply-side analysis

2.173 On the supply side, a hypothetical monopolist in the provision of either trunk or symmetric broadband origination would not be able to substitute into the other input without incurring the significant sunk costs (and amounts of time) required to build a distinct network.

Location of breakpoint between trunk and symmetric broadband origination

2.174 For the sake of clarity, the breakpoint between symmetric broadband origination and trunk segments is specified as BT's Tier 1 nodes, but the relevant markets include the equivalent on other communications providers' networks. The choice of Tier 1 as the breakpoint is based on evidence supplied to Ofcom by BT regarding the extent of other communications providers' networks. This evidence shows that a significant number of other communications providers have built their networks up to the proximity of many of BT's Tier 1 nodes on BT's SDH network (see Annex B for details), whereas only a very small number reach other nodes. Handover therefore takes place, in the main, at Tier 1 nodes. Given the high sunk costs involved in extending a network to get closer to customer sites, Ofcom does not expect this situation to alter in the foreseeable future. This has led Ofcom to consider that BT's Tier 1 nodes provide the appropriate cut-off point. These nodes tend to be located at differing distances from customer sites, meaning that a market definition based on an average length of circuits would demonstrably fail to reflect actual market conditions.

Responses to the draft notification – location of breakpoint

2.175 BT considers that a definition of trunk based on breakpoints in its network is inappropriate and automatically results in BT having a higher market share than is really the case. BT suggests that if trunk was defined on the basis of breakpoints in the networks of other communications providers, their market shares would be significantly higher.

2.176 The majority of terminating segments are provided by BT in the form of its own retail products and PPCs. Given that PPCs are provided over BT's network from a third party site to a communication provider's point of connection with the BT network (frequently at a Tier 1 node), it is appropriate to use BT's network as the basis for defining the breakpoints between trunk and terminating segments. A more detailed discussion of this point is provided under Ofcom's views of BT's response to Ofcom's SMP analysis in the market for trunk segments, see paragraphs 3.75 to 3.88 below.

2.177 It was suggested by one communications provider that as alternative interface circuits are essentially 'flat' in nature that there is no real distinction between the trunk and access elements.

2.178 Ofcom recognises that in some circumstances there will be no distinction between the trunk and access elements of an alternative interface service, but considers that it most circumstances this will not be the case. Alternative interface circuits are generally offered over relatively short distances and do not pass through a hierarchical network. As such, they are unlikely to have any trunk element. However, there are circumstances where alternative interface circuits are used to provide the terminating segment to a longer circuit. In such circumstances, it is more likely that there will be some form of trunk segment.

Responses to the draft notification – trunk segments versus broadband conveyance

2.179 BT, in its response to the December 2003 consultation document on the *Oftel/Ofcom Wholesale Broadband Access Market proposals*, questioned the rationale behind Oftel's defining of distinct economic markets for broadband conveyance, which were assessed in the broadband market review, and trunk segments, which were assessed in the leased lines market review. It expressed the view that (Paragraph 220),

"BT finds that broadband conveyance is not distinguishable from other forms of conveyance for exactly the arguments advanced by Ofcom. On the demand side, conveyance for ADSL service is identical to conveyance for SDSL services and both could be substituted by leased line conveyance. Moreover, on the supply side, the owner of a core network can very easily switch to offer broadband conveyance."

2.180 In its submission BT cited comments made by Oftel in response to similar arguments presented to Oftel on behalf of the "Altnets" in June 2003.

2.181 Communications providers also queried Ofcom's decision to treat symmetric trunk and asymmetric wholesale broadband conveyance differently. They queried how a wholesale SDSL product would be structured when there were differences between how core conveyance and trunk are treated and suggested that SDSL and the appropriate backhaul should be regulated in the same way as PPCs.

2.182 Ofcom's view is that there are distinct economic markets for broadband conveyance and leased lines trunk segments. Its rationale for this view, together with some clarification on the position of SDSL based services, is outlined below.

2.183 The distinguishing characteristic of services within the broadband conveyance, as opposed to trunk segments, market is that they offer a high degree of flexibility, using virtual paths, principally for contended services. In BT's case, the services that it offers in the broadband conveyance market are currently conveyed over its ATM network, via the DSLAM, although alternatives to ATM may be used on a widespread basis in future. Across BT's networks, trunk segments and broadband conveyance are in the main offered over the same underlying infrastructure, with a degree of extra investment having been made in order to run the ATM protocol in the case of broadband conveyance. ATM is currently used in the conveyance of ADSL and SDSL based services because it offers flexibility and allows, on a per user basis, virtual paths to be offered at low unit cost. The extra functionality offered by ATM would be less valuable in the case of "traditional" uncontended leased lines such as BT's *KiloStream* and *MegaStream* products because these services do not rely on shared capacity to the same extent as contended services.

2.184 Given the differences in flexibility/functionality described above it is Ofcom's view that the two types of conveyance (trunk segments and broadband conveyance) are not close substitutes from the perspective of a communications provider committed to providing a particular type of leased lines service e.g.:

- contended leased lines using SDSL, delivered via the DSLAM; and
- uncontended leased lines using either HDSL or SDSL.

2.185 However, as outlined at paragraphs 2.213 to 2.215 below, end to end SDSL (contended or uncontended) and traditional leased lines services are substitutable at the retail level, since uncontended SDSL based leased lines offer broadly the same functionality, and these are linked to contended lines based on a chain of substitution argument.

2.186 Retail leased lines are provided using one or both of trunk segments and symmetric broadband origination as inputs. Each of contended and uncontended services is associated with a particular form of conveyance - contended services will typically be offered across the ATM network, whereas uncontended services will typically be offered across the SDH network. As a result, any switching between broadband conveyance and trunk segments would also necessitate a switching of access delivery mechanism (i.e. contended or uncontended). This means that, at the margin, changes in the price of trunk segments or broadband conveyance might influence the choice of a supplier making a decision between purchasing wholesale inputs (both core and access) that would allow it to offer contended circuits (e.g. using SDSL) vs. wholesale inputs that would enable it to offer uncontended circuits (e.g. using HDSL). Were such switching to be widespread, there would be an argument for including the two types of service in the same economic market. However, having considered this issue, Ofcom's view is that such switching is unlikely to be widespread.

2.187 Increases in the price of trunk segments would be unlikely to be constrained by broadband conveyance (as an input into a contended leased lines based end-to-end solution) because of the current limited availability of leased lines provided via SDSL (the majority of the current base of low bandwidth leased lines are offered over HDSL). This current limit to the availability of SDSL via DSLAMs, which may, to some extent be eroded over time, result from factors such as distance limitations and a dependence on the quality of copper pairs.

2.188 Increases in the price of broadband conveyance would not be constrained by trunk segments (as an input into a traditional leased lines based end-to-end solution) since the majority of broadband conveyance is used to provide asymmetric broadband Internet access. It seems unlikely for it to be feasible for a communications provider providing wholesale broadband conveyance to price discriminate between sales to communications providers offering retail symmetric services and sales to communications providers offering retail asymmetric services. Trunk segments would not provide a cost effective means of providing broadband conveyance for asymmetric services.

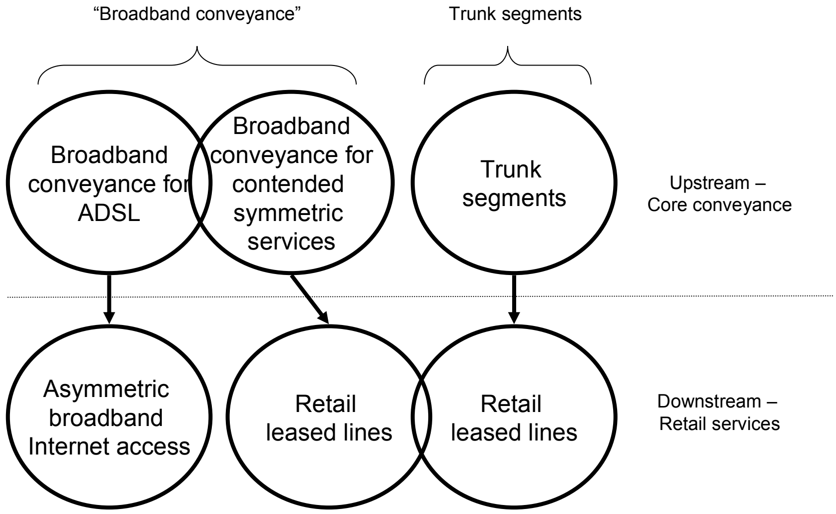
2.189 Ofcom has additionally considered the proportion of the total cost of providing an end to end leased line that is accounted for by trunk segments. The smaller this proportion is, the less likely that increases in the price of trunk segments will feed into increases in price of retail leased lines and the smaller the probability of switching from broadband conveyance to trunk segments. Ofcom has looked at a number of different indicators of this cost split. Any such measure is imperfect due to the extent of variety on a circuit by circuit basis, and the fact that any cost data supplied by BT will be influenced by allocation issues.

2.190 Ofcom has examined information supplied by BT providing a split between, in the context of its private circuits business in 2002/03, trunk segments and symmetric broadband origination. Ofcom examined four different measures in an attempt to approximate the underlying cost split, namely revenue, total distance in km, total cost (measured as the sum of operating cost and depreciation) and mean capital employed. None of these measures is a perfect measure, which suggests that considering a range of measures is desirable. Notably, the information on total cost and mean capital employed is influenced by BT's cost allocation methodologies, of which Ofcom does not have full visibility. The above caveats notwithstanding, information provided by BT suggests that, in the context of providing end-to-end leased lines, the cost of trunk segments appears to represent less than half of the total cost of providing end-to-end leased lines. Based on some measures, the proportion is significantly below one half. This consideration would limit the extent of switching if the price of trunk segments were to increase.

2.191 Based on the above arguments, Ofcom's view is that demand side substitution between broadband conveyance and trunk segments is likely to be limited. Ofcom's view is that supply side substitution is not a relevant consideration in this context. This is because a hypothetical monopolist in the provision of broadband conveyance is likely to also be a supplier of trunk segments, and vice versa. This means that supply side substitution is unlikely to provide sufficient additional competitive constraints to justify broadening the market definition.

2.192 The implication of identifying distinct economic markets as has been done above is that the "core" network element of leased lines (e.g. contended leased lines offered over SDSL) that are conveyed by means of virtual paths (e.g. over ATM networks) fall within the broadband conveyance market that is analysed in Ofcom's *Review of the Wholesale Broadband Access Markets* (see www.ofcom.org.uk/codes_guidelines/telecoms/netw_intercon_index/wholesalebroadbandreview/?a=87101). This is shown in the diagram below.

Figure 2.3 – Core conveyance markets



Conclusions - trunk segments versus broadband conveyance

2.193 For the reasons set out above, Ofcom has concluded that trunk segments and broadband core conveyance form separate product markets.

Forward look

2.194 Ofcom has considered the likelihood of competitive or technical developments that might affect the markets identified during the period covered by this review. Ofcom's view is that there are no developments that would require a change in these market definitions within a 2-3 year period. However, Ofcom will keep market conditions under review, in particular the continued relevance of the Tier 1 breakpoint as the most appropriate proxy available for the breakpoint between trunk and symmetric broadband origination.

Issue 9 – Trunk segments at different bandwidths

2.195 It is not appropriate to define distinct trunk markets at different bandwidths. A very narrow market, such as trunk segments at a given bandwidth, can be broadened to encompass trunk segments at all bandwidths – see Annex A for details.

Responses to the draft notification – trunk segments at different bandwidths

2.196 No comments were received on this issue.

Conclusions – trunk segments at different bandwidths

2.197 As set out above and in Annex A, Ofcom has concluded that there is a single product market for trunk segments, covering all bandwidths, since trunk segment traffic can be aggregated so that higher order systems can be used at the trunk level.

Issue 10: Geographic markets for wholesale trunk segments

2.198 There appears to be very limited scope for supply-side or demand-side substitution between trunk segments in different areas of the UK or different routes. The same point applies with respect to the impracticality of defining a very large number of narrow geographic markets (e.g. route-by-route), discussed in more detail in Issue 6 above. Ofcom therefore proposed in the draft notification to define one national market representing wholesale trunk segments in the UK, albeit in the knowledge that localised characteristics were likely to be present.

2.199 In the case of trunk segments, a separate market for the Hull area has not been defined because the size of the Hull area does not appear to be sufficiently large to warrant the functionality provided by trunk segments. The fact that an end-to-end leased line between two premises in the Hull area is provided using two symmetric broadband origination circuits illustrates this.

Responses to the draft notification – geographic wholesale trunk market

2.200 BT argued in its response to the draft notification that there are significant differences in competition on different trunk routes and that Ofcom has failed to take account of differing conditions of competition on these routes, as evidenced by the differing numbers of communications providers with points of connection at each Tier 1 node.

2.201 Both BT and UKCTA questioned how a national market could exist for trunk when Ofcom was proposing to allow BT to price on a geographically de-averaged basis as a remedy to take account of differing competitive conditions. The European Commission also noted the proposal to allow geographic de-averaging of prices and advised that the market would need monitoring in future to check whether separate geographic markets had developed as a result.

2.202 Ofcom notes BT's comments about the differences in competitive conditions for trunk but remains of the view that it is appropriate to define a single, national geographic market for trunk. Ofcom's reasons for defining a national trunk market are set out in Issue 6 above.

2.203 Ofcom also notes the comments of UKCTA and the European Commission and agrees that geographically de-averaged prices may be relevant to separate geographic markets developing in future. Ofcom has addressed the issue of why it is appropriate to allow geographically de-averaged pricing for trunk segments in Issue 6 above.

Conclusions - geographic wholesale trunk market

2.204 Ofcom has concluded that a single national market exists for the provision of trunk segments. Ofcom's reasons for this conclusion are set out at paragraphs 2.106 to 2.158 above and in Annex A.

Forward look

2.205 Ofcom has considered the likelihood of competitive or technical developments that might affect the markets identified during the period covered by this review. Ofcom's view is that there are no developments that would require a change in these market definitions within a 2-3 year period. However, Ofcom will keep market conditions under review.

Issue 11: Traditional interface symmetric broadband origination vs alternative interface symmetric broadband origination

2.206 As discussed in Chapter 1, symmetric broadband origination can itself be further subdivided between the traditional interface symmetric broadband origination ("TISBO") services such as wholesale terminating segments (PPCs), RBS and LLU backhaul and SDSL, and alternative interface symmetric broadband origination ("AISBO") services such as LES and alternative forms of LLU backhaul.

2.207 LES circuits are often supplied over short distances by means of a single direct end-to-end fibre. However, other configurations are possible, as has been discussed by BT and other communications providers in their negotiations regarding the availability of a wholesale product enabling other communications providers to replicate services such as BT's retail SHDS product line. With this in mind it is appropriate to define distinct markets for the access portion of end to end circuits delivered using Ethernet-based technology.

2.208 AISBO services can be identified by the following distinguishing features, discussed in more detail in "Issue 3: Retail traditional interface leased lines vs retail alternative interface leased lines" above:

- end user applications; and
- distance constraints.

2.209 The AISBO market would potentially include wholesale equivalents of end to end LES circuits (currently constrained to distances up to 25km although this may change over time and as noted above this is not the defining feature of this market), as well as the access segments of longer end to end circuits, delivered using Ethernet-based technology.

2.210 Ofcom's substitution analysis carried out in respect of the equivalent retail markets (see Issue 3 above) translates through to the corresponding wholesale markets, since there is a derived demand for the wholesale services.

2.211 Even with the availability of a cost based TISBO/AISBO input, the pricing of a hypothetical monopolist supplier of either TISBO or AISBO services would not be constrained by the availability of the other service.

2.212 Given the technical differences between AISBO and TISBO, the two are likely not to be cost effective substitutes for one another in the majority of cases.

SDSL

2.213 In relation to SDSL, Ofcom notes that uncontended SDSL-based services can be used to provide the same functionality as a terminating segment, that is, dedicated transmission capacity up to a maximum of 8Mbit/s. Thus, uncontended SDSL-based services are in the same market as low bandwidth terminating segments.

2.214 Furthermore, as set out in Annex A there is a chain of substitution between uncontended and contended SDSL-based products on the demand side, leading to the conclusion that all SDSL-based symmetric broadband origination services should be included in the same relevant market. It would be inappropriate for Ofcom to specify a contention threshold to separate contended and uncontended SDSL services into two markets.

2.215 Ofcom therefore concludes that SDSL is a symmetric broadband origination service and that it should be included within the TISBO market.

RBS backhaul

2.216 In relation to RBS backhaul, Ofcom notes first that RBS backhaul circuits, which as described in Chapter 1 are wholesale inputs required for the provision of retail mobile telephony services, are technically equivalent to PPCs. A communications provider could provide to a mobile communications provider the same RBS backhaul circuit as BT by using a PPC. A radio base station can be viewed as equivalent to an end user's premises, with traffic being carried to the appropriate point of interconnection between the communications provider's and the mobile communications provider's networks. Because they are technically equivalent, these services are essentially the same product and ought therefore to be part of the same relevant product market, however they are labelled.

2.217 Notwithstanding this, Ofcom has carried out a substitution analysis assuming that the products are different. The conclusion of this analysis is that in a competitive environment with prices set at the competitive level for both products and no restrictions on eligibility, demand-side substitution between RBS backhaul circuits and PPCs is likely in response to a SSNIP.

2.218 Ofcom therefore concluded that RBS backhaul is a symmetric broadband origination service and that it should be included within the TISBO market. The core conveyance element of an RBS backhaul circuit is included in the trunk segments market.

LLU backhaul

2.219 In relation to LLU backhaul, BT pointed out that it is also used for supplying asymmetric broadband services.

2.220 As described in more detail in Annex A, Ofcom has clarified how it reached its conclusions regarding LLU backhaul. LLU backhaul consists of LLU backhaul trunk and LLU backhaul link. LLU backhaul trunk is similar to the trunk segment of a leased line and is hence a substitute for trunk segments. This is why Ofcom considers that LLU backhaul trunk is part of the wholesale trunk market.

2.221 Ofcom is of the view that the issue of LLU backhaul links can be addressed in two different ways. The first involves carrying out a demand- and supply-side substitution analysis, This analysis suggests that SDH-based and Ethernet-based LLU backhaul links are not demand-side substitutes for TISBO and AISBO respectively because they do not include a local end. Similarly either TISBO or AISBO are not demand-side substitute for LLU backhaul links because they offer a local end that is not needed and that has to be paid for. Supply side substitution analysis does not modify the conclusion of absence of substitution. This first approach leads to the conclusion that SDH-based LLU backhaul links should be in a separate relevant market to TISBO. Similarly, Ethernet-based LLU backhaul links should be in a separate market to AISBO.

2.222 The second approach relies on the similarity of competitive conditions between SDH-based LLU backhaul links and TISBO on the one hand, and between Ethernet-based LLU backhaul links and AISBO on the other hand. The similarity arises because the same technology is involved for providing transparent transmission technology between an operator's POC and a point in the local access network (one further than the other one). This similarity means that the same type of entry barriers and economies of scale and scope are faced, especially those relating to digging and ducting. Ofcom further notes that competitive conditions for SDH-based LLU backhaul links and TISBO vary by bandwidth category (low/high/very high) whereas those for Ethernet-based LLU backhaul links and AISBO do not.

2.223 Although the first approach has the attraction of addressing the fact that LLU backhaul can be used to supply both symmetric and asymmetric broadband services, Ofcom believes that the practical considerations in paragraph 2.222 should be given more weight. LLU backhaul links should be regarded as a symmetric broadband origination service and should therefore be included within the TISBO or AISBO markets, depending on the technology in use - bandwidth considerations being taken into account in the case of the SDH technology.

Responses to the draft notification – wholesale symmetric broadband origination product markets

2.224 It was suggested by one communications provider that the definition of alternative interface circuits should be amended to include all interfaces other than the legacy PDH interface.

2.225 Ofcom considers that its existing definitions for alternative interface and traditional interface products are appropriate. The suggestion to define traditional interface circuits as those offered over PDH interfaces ignores the fact that many traditional interface circuits use SDH interfaces.

2.226 One communications provider queried how Ofcom would deal with or assess hybrid products, such as MegaStream Ethernet, which have terminating segment provided using one technology and a trunk element provided using another technology. It was suggested that hybrid products should be classified on the basis of what service was actually being provided to the end user.

2.227 Ofcom's view is that products such as MegaStream Ethernet are retail products, which are made up of several wholesale elements. The wholesale elements will fall into individual wholesale markets and will be regulated on the basis of the market into which they fall. The only retail product market that is regulated is the low bandwidth traditional interface retail leased line market, which covers circuits with bandwidths of 8Mbit/s or less. To the extent that existing hybrid products have bandwidths in excess of this, there is currently no need for Ofcom to consider this issue. Ofcom will assess any new hybrid products on a case by case basis to assess whether they have the potential to fall within the regulated retail leased lines market and will apply regulation to them as is appropriate.

2.228 BT suggested that the definition of alternative interface circuits is too narrow and that it fails to take account of freespace optics and wireless alternatives to fibre.

2.229 Ofcom agrees with BT that freespace optic and wireless circuits that are presented using Ethernet should be included in the alternative interface market as they offer dedicated capacity between two points. The implications of this for the SMP assessment are discussed in Chapter 3.

2.230 BT also makes clear in its response to the draft notification that it does not consider that SDSL, RBS backhaul or LLU backhaul should be included in the TISBO market. Ofcom's view on each of these issues is outlined below.

SDSL

2.231 BT's view that SDSL should not be considered in the same market as the more established set of SDH-based TISBO services were supported by Easynet, who suggested that SDSL should be considered as part of the broadband market review, as set out in Ofcom's *Review of Wholesale Broadband Access* (http://www.ofcom.org.uk/codes_guidelines/telecoms/netw_intercon_index/wholesale broadbandreview/?a=87101). Easynet argues that leased lines are high quality products that require service level guarantees of a level that cannot be provided over SDSL.

2.232 Ofcom's view is that the inclusion of SDSL based services within the wholesale broadband access market would not accurately reflect the distinct characteristics of SDSL based services, and the competitive conditions surrounding its provision. The symmetric nature of SDSL-based products is key. For the foreseeable future the product is likely to be largely aimed at business customers. Ofcom's view is that the differences in functionality and cost orientated prices of ADSL and SDSL based services is such that the two are unlikely to be substitutable.

2.233 Ofcom remains of the view that SDSL-based circuits are sufficiently substitutable for them to be viewed as being in the same economic market as SDH-based services. Its rationale is outlined in its discussion of the distinction between the markets for broadband conveyance and trunk segments. The current limited availability of SDSL, together with its lower "quality" levels, as outlined by Easynet, is such that it may not constrain the price of the established SDH based leased lines. However, Ofcom's view is that the functional similarities of SDSL and SDH-based circuits (the ability to provide dedicated, symmetric, origination) is such that the price of the former is likely to constrain that of the latter to a sufficient degree that the two can be viewed as demand side substitutes and as such to be in the same economic market

RBS Backhaul

2.234 BT's opposition to the regulation of RBS Backhaul is supported by UKCTA. UKCTA suggested that radio base stations are not third party sites but are part of a mobile operator's network while BT argued RBS Backhaul should be seen as a retail product, rather than as a wholesale product, that effectively provides cost oriented network build to mobile operators.

2.235 Ofcom considers that the arguments about RBS Backhaul raised in response to the draft notification are the same as those raised in response to previous consultation documents on this issue. For the reasons described above and in Annex A, Ofcom considers that RBS Backhaul can be seen as a wholesale symmetric broadband product.

LLU Backhaul

2.236 Concern was raised that BT's LES 155 and LES 622 products (and hence their LLU Backhaul equivalents) appeared to fall outside the scope of the definitions for traditional interface and alternative interface products.

2.237 Ofcom does consider the LLU Backhaul equivalents of the BT LES 155 and LES 622 products to fall within the definition of the AISBO market, since they have the characteristics of alternative interface products, apart from the actual interface that they are provided with as these conform to interfaces normally associated with TISBO. This is because these services offer analogous services to other AISBO products and have similar characteristics i.e. they are available over limited distances and are provided over dedicated fibre pairs.

Conclusion on symmetric broadband origination product markets

2.238 From the above analysis, Ofcom has concluded that AISBO services form a distinct market separate from TISBO services and that SDSL, RBS Backhaul and LLU Backhaul products fall within the two markets.

Forward look

2.239 Ofcom has considered the likelihood of competitive or technical developments that might affect the markets identified during the period covered by this review. Ofcom's view is that there are no developments that would require a change in these market definitions within a 2-3 year period. However, Ofcom will keep market conditions under review.

Justification for definition of wholesale symmetric broadband origination markets against the requirements in the Commission's Recommendation

2.240 The definition of symmetric broadband origination markets differs from the Commission's Recommendation on markets, which discusses only a narrower market for wholesale terminating segments of leased lines (although the Recommendation does allow for segmentation by bandwidth), rather than two separate markets for alternative interface and traditional interface terminating segments. As a consequence, Ofcom is required to justify the departure specifically against the three criteria set out in the Recommendation, namely:

1. barriers to entry and the development of competition;
2. 'dynamic aspects', i.e. whether the market is dynamically moving towards effective competition with new entrants and increased innovation; and
3. the relative efficiency of competition law.

2.241 Before looking specifically at the three criteria in turn, Ofcom is minded to clarify in more general terms why it considers it appropriate to depart somewhat from the Commission's recommendation by defining distinct AISBO and TISBO markets. Firstly, Ofcom wants to ensure that the remedies do not discriminate unduly between the technologies used to provide retail leased lines. Secondly, Ofcom wishes to include all other wholesale services (that is, services sold to public electronic communications network operators) that are technologically equivalent substitutes or that should not be considered as part of a separate market for pragmatic reasons.

1. Barriers to entry and the development of competition

2.242 Symmetric broadband origination covers symmetric transparent transmission capacity from a customer's premises to an appropriate point of aggregation. This functionality is supplied by using the same network components and technologies as the more specific wholesale terminating segments of leased lines. These network components, especially the local access (and to a lesser extent the main link) network, are characterised by high barriers to entry. These barriers to entry are of a structural type and arise because of high sunk costs, and large economies of scale and of scope. In particular the digging and ducting required by SBO services are very expensive and are at the source of these features.

2.243 The existence of high entry barriers, especially the high sunk costs, creates asymmetric conditions between the incumbent and entrants to the market, impeding or restricting the entry of the latter. Entrants will not be in a position to compete at the wholesale level until they have sunk a significant percentage of their costs.

2.244 Even if entry would intensify over the period covered by the review, Ofcom is of the view that the ubiquity advantage of the incumbent is unlikely to be sufficiently eroded as a result of that entry.

2. Dynamic aspects

2.245 Ofcom does not anticipate that the high barriers to entry mentioned above will be significantly reduced in the coming two to three years through market dynamism. This is because the barriers to entry inherent in the widespread deployment of access networks are very high. There is no evidence to suggest that technological progress will generate a commercially acceptable alternative enabling entrants to provide SBO without needing an access (and link) network similar to that of the incumbent.

3. Relative efficiency of competition law

2.246 The relative efficiency of competition law is discussed in detail in Chapter 4.

Issue 12: Bandwidth distinctions for traditional interface symmetric broadband origination

2.247 Ofcom has concluded that the separate markets by bandwidth at the retail level, defined on the demand side, also apply to traditional interface symmetric broadband origination ("TISBO").

2.248 Ofcom's analysis of demand-side substitution in retail markets for end-to-end leased lines is broadly applicable to the markets for wholesale TISBO. In particular, Ofcom considers that the arguments outlined in its retail market definition concerning bandwidth distinctions all read across directly into TISBO markets. This is because TISBO is a derived demand, reflecting retail demands, and the bandwidth of the origination circuit is determined by the bandwidth of the retail leased line (unlike trunk segments).

2.249 Therefore, as described above, Ofcom is of the view that (on the demand side) there is a chain of substitution (multiples of lower bandwidth circuits constraining the price of higher bandwidth circuits) that links TISBO segments at speeds up to and including 8Mbit/s;TISBO segments at speeds between 34Mbit/s and 155Mbit/s; and TISBO segments at 622Mbit/s and above.

Supply side analysis

2.250 The relevant question here is whether the definition on the demand side can be broadened by supply side substitution, e.g. whether a supplier of 8Mbit/s (or lower) TISBO services would enter the market for 34Mbit/s TISBO services in response to a significant price increase by a hypothetical monopolist supplier. However, Ofcom considers that the likelihood that a communications provider may already be serving the premises is very low, due to the relatively low penetration of these services. A communications provider would therefore be likely to need to incur the significant sunk costs of network build, including digging and ducting. Supply side substitution (i.e. quick, inexpensive entry) is therefore not feasible on a scale sufficient to constrain the prices of a hypothetical monopolist.

2.251 In addition, for supply side substitution between bandwidths to be present there would need to be communications providers that supplied, for example, TISBO segments at high bandwidths but not at low bandwidths, but would enter the supply of low bandwidth if the price of high bandwidth were to rise. However, as for retail leased lines, the biggest communications providers already provide both low and high bandwidth segments, so there is little or no additional competitive constraint beyond that already captured in the demand-side market definition and supply side substitution is not relevant.

2.252 Therefore, Ofcom believes that supply-side substitution on this basis is so limited that it does not represent an effective constraint and, as such, does not justify the inclusion of high (defined as 34Mbit/s and above) and low (defined as 8Mbit/s and below) bandwidth TISBO services in the same market. By the same token, Ofcom does not consider that such substitution would justify the inclusion of very high (defined as 622Mbit/s and above) bandwidth TISBO services in the same market as those of lower bandwidths.

Responses to the draft notification – bandwidth distinctions for TISBO

2.253 No responses were received on this issue.

Conclusions – bandwidth distinctions for TISBO

2.254 For the reasons set out above, Ofcom has concluded that there are three separate product markets for TISBO based on bandwidth splits:

- low bandwidth – up to 8Mbit/s
- high bandwidth – above 8Mbit/s up to 155Mbit/s
- very high bandwidth – above 155Mbit/s.

Issue 13: Bandwidth distinctions for alternative interface symmetric broadband origination

2.255 Ofcom has considered whether the bandwidth distinctions identified in the retail leased lines and TISBO services markets apply equally to the AISBO market.

2.256 As discussed in Annex A, the costs of the provision of Ethernet-based circuits do not vary significantly by bandwidth. It is therefore not appropriate to define distinct markets according to bandwidth, as has been done in other leased lines markets, because the higher bandwidth alternative interface circuits do competitively constrain the prices of lower bandwidth alternative circuits.

Responses to the draft notification

2.257 BT has argued that bandwidth distinctions do exist in the AISBO market. BT suggests that different equipment is needed to provide 1Gbit/s AISBO circuits and WDM circuits as compared to other AISBO circuits and that the cost of this equipment is significantly higher in comparison. BT has also argued that the conditions of competition are likely to vary for the higher bandwidth circuits due to greater supply side substitution as communications providers are more willing to extend their networks to provide higher bandwidth/higher revenue circuits.

2.258 Ofcom recognises that different equipment may be required to provide very high bandwidth AISBO circuits but remains of the view that this factor is insufficient to justify defining distinct markets split by bandwidth. Information supplied to Ofcom by competing communications providers suggests that (with the exception of the more costly and expensive WDM based services), bandwidth-variant equipment costs will typically account for less than 10% of a competing operator's initial capital expenditure in offering an AISBO circuit. This means that if differences in the prices of AISBO circuits at different bandwidths reflected only differences in incremental capital expenditure, all prices would, as described in Annex A, be very close together.

2.259 Ofcom therefore remains of the view that defining a single product market for all bandwidths is appropriate. As outlined in Chapter 3, BT's share of the AISBO market appears to be above 50% at all bandwidths, so even if Ofcom were to define distinct economic markets by bandwidths, which it does not consider it appropriate to do, it seems very likely that it would find BT dominant in each of them.

Conclusion on bandwidth distinctions for alternative interface symmetric broadband origination

2.260 Ofcom has concluded, on the basis of demand and supply side substitution, that there are no identifiable bandwidth distinctions in the AISBO market, and that there is therefore only one market for AISBO services.

Issue 14: Wave Division Multiplexed services

2.261 BT offers a number of retail products (the *WaveStream* product set) which are characterised by use of WDM in the access segment. WDM services are services that can be used to provide transmission of multiple wavelengths of light over short or long distances using wave division multiplexers. At present, there are three broad types of wave division multiplexers available, Coarse Wave Division Multiplexer (CWDM), Dense Wave Division Multiplexer (DWDM) and Ultra Dense Wave Division Multiplexer (UDWDM).

2.262 CWDM uses lower frequency lasers and a wide spread of frequencies to enable transmission of up to 18 wavelengths over distances up to 60km. DWDM uses higher frequency lasers and a lower range of frequencies in order to enable transmission of up to 32 to 128 wavelengths nation-wide. CWDM is therefore cheaper and more cost effective for certain applications where fewer wavelengths and/or smaller transmission distance is needed. UDWDM, meanwhile, uses high frequency lasers and a very narrow spread of frequencies to carry a greater number of wavelengths.

2.263 The use of WDM is well established within core networks. However, its use in communications providers' access networks to offer products such as BT's WaveStream range is a relatively new innovation.

2.264 The distinguishing characteristics of WDM when used as an access technology are as follows:

- WDM based access circuits are mainly used for emerging very high bandwidth requirements such as data warehousing, and Storage Area Networking (SAN) applications;
- WDM (currently) uniquely, supports multiple delivery of different interfaces as the service is transparent to what technology each wavelength provides. Each wavelength can be used to supply SDH, Ethernet, or other protocols such as Fibre Connection (FICON) or Enterprise Systems Connection (ESCON).
- WDM based access can provide a combination of Metropolitan area ring and longer haul city-to-city connectivity to meet resilience requirements between sites such as data centres and head offices;
- above 1.25Gbit/s, bandwidth is not a significant cost driver for WDM based circuits (it remains a significant cost driver for SDH circuits of all bandwidths), due to the ability to add extra wavelengths/bandwidth at low cost; and;
- as an access technology WDM remains very expensive relative to other technologies, although this need not be true on a per Mbit/s basis, and the incremental cost of providing additional wavelengths is likely to be relatively small.

Ofcom's view

2.265 WDM is a technology used by communications providers to supply various types of circuits, and is not itself bought as a standalone product. It can be used as an input to provide a number of products in retail leased lines markets, including:

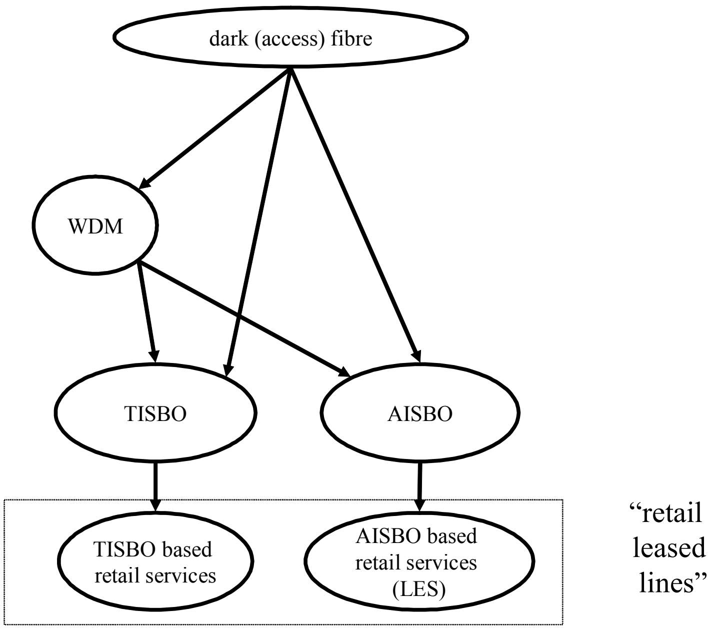
(a) SDH over WDM over fibre;
(b) Ethernet over WDM over fibre; and
(c) other protocols over WDM over fibre, for example:
- fibre channel;
- FICON; and
- ESCON.

2.266 Ofcom's view is that the most appropriate way to characterise retail products such as (a) to (c) above is to view them as being in the same market as equivalent end user applications delivered over fibre, rather than a separate market of applications delivered over WDM over fibre. This approach focuses on the characteristics of the retail product, not the technology used to deliver it and so is technologically neutral.

2.267 For example, based on a demand side substitution argument, all products which offer Ethernet-presented dedicated transmission capacity are likely to be in the same market, whether they are delivered over WDM over fibre (e.g. BT's *WaveStream* product range) or directly over fibre (e.g. BT's *Short haul data services (SHDS)* product range).

2.268 The WDM element of the service is therefore an *upstream* characteristic of the products described above. It can be used as an input into different products that are in distinct (downstream) economic markets – see Figure 2.1 below.

Figure 2.1 – Leased lines markets



2.269 Based on these findings, Ofcom does not propose to conduct a review of the WDM market as it falls outside the scope of the European Commission's market set, in the same way as no review will be conducted of any other input markets into TISBO or AISBO that may exist, such as dark fibre.

Responses to the draft notification – WDM services

2.270 It was suggested by one communications provider that DWDM based services, such as BT's Wavestream product range, are substitutable for AISBO circuits and as such should fall within the scope of this market review. It was suggested that wholesale variants of at least a subset of BT's Wavestream product portfolio should fall within the AISBO market.

2.271 Ofcom has recognised above that DWDM forms an input into some of BT's high capacity products, in the same manner as other inputs such as access fibre and copper loops. This does not, however, mean that it should necessarily be regulated. Ofcom does not consider that DWDM falls within the markets covered by this market review. Given that WDM has only recently started being used to offer access products, Ofcom considers the market to be in an early stage of development and believes that it would be inappropriate to seek to assess such a market at the present time.

Conclusions – WDM services

2.272 For the reasons set out above, Ofcom has concluded that WDM falls outside of the scope of the markets covered by this market review.

Issue 15: Wholesale symmetric broadband origination geographic markets

2.273 In the draft notification, Ofcom proposed that for wholesale symmetric broadband origination, a single national geographic market existed except for the Kingston upon Hull area, which forms a separate geographic market of its own.

Responses to the notification – geographic markets

2.274 BT argued in its response that Ofcom had failed to take proper account of geographic variations, as required by the EU Directives, when defining leased lines markets. BT suggested that the very nature of networks means that geography is an important factor and that other communications providers have built their networks in areas of highest population and business density. BT suggested that as a result, different conditions of competition existed in different geographic areas across the UK, particularly in metropolitan areas, and that separate geographic markets should be defined as a result.

2.275 Ofcom's analysis of geographic markets for symmetric broadband origination products is set out in Issues 6 and 7 above.

Conclusions – geographic markets

2.276 For the reasons set out above, Ofcom has concluded that there are two separate geographic markets for symmetric broadband origination products (both TISBO and AISBO). The first market covers the whole of the UK (excluding the Hull area) and the second covers the Hull area.

General responses to the draft notification

2.277 It was suggested by OPTA that the market for international leased lines had not been analysed in the market review.

2.278 Ofcom considers that it is only appropriate for it to consider the portion of an international leased line that is provided within the UK. To do otherwise would risk distorting competition in markets in other Member States and could affect trade between Member States. For example, leased lines between the UK and France can be provided from the UK to France or from France to the UK. Regulation imposed in the UK on the provision of circuits from the UK to France could, therefore, impact on the competition if different regulation is imposed in France on the provision of circuits from France to the UK.

2.279 Given that the portion of an international leased line that is provided within the UK is the same as any other leased line within the UK and, as such, falls within the markets defined in this document and is governed by the regulation imposed in those markets.

2.280 It was also suggested by one communications provider that Ofcom's review was backward looking rather than forward looking and that the proposed remedies risk tying communications providers to the lowest common denominator, thereby stifling innovation.

2.281 Ofcom rejects suggestions that its market review is not forward looking. The markets have been defined and the regulation imposed on the basis of the best information currently available to Ofcom. In addition to assessing the current position, Ofcom has assessed in each case whether changes to the market are likely in the period covered by the review, i.e. the next two to three years.

Conclusion on market definition

2.282 In summary, Ofcom has identified the following leased line product markets in the UK excluding Kingston upon Hull:

- retail low bandwidth traditional interface leased lines (up to and including 8Mbit/s) – this includes analogue circuits of relevant bandwidths, and incorporates the minimum set of retail leased lines identified by the Commission;
- wholesale low bandwidth traditional interface symmetric broadband origination (up to and including 8Mbit/s);
- wholesale high bandwidth traditional interface symmetric broadband origination (above 8Mbit/s up to and including 155Mbit/s);
- wholesale very high bandwidth traditional interface symmetric broadband origination (above 155Mbit/s);
- wholesale alternative interface symmetric broadband origination; and
- wholesale trunk segments (note that this market extends to the whole of the UK).

2.283 In addition, Ofcom has identified the following leased line product markets in the Hull area:

- retail low bandwidth traditional interface leased lines (up to and including 8Mbit/s) – this incorporates the minimum set of retail leased lines identified by the Commission;

- wholesale low bandwidth traditional interface symmetric broadband origination (up to and including 8Mbit/s);
- wholesale high bandwidth traditional interface symmetric broadband origination (above 8Mbit/s up to and including 155Mbit/s); and
- wholesale alternative interface symmetric broadband origination.

2.284 Although Ofcom has considered traditional interface retail leased lines at bandwidths above 8Mbit/s and alternative interface retail leased lines during its analysis, Ofcom does not consider it necessary to formally identify (for the purposes of section 79 of the Act) retail markets covering such products. Ofcom considers that regulation at the wholesale level is sufficient to meet regulatory requirements, as explained at paragraph 2.31 above.

2.285 In the next chapter, Ofcom sets out its analysis of SMP in the wholesale markets identified above, and in the retail low bandwidth traditional interface leased lines market which contains the minimum set of retail leased lines identified by the Commission. Ofcom is not conducting an assessment of SMP in other retail markets, preferring instead to regulate at the wholesale level where possible, in line with the Commission's Recommendation.

Chapter 3
Summary of assessment of significant market power

Market Power determinations

3.1 Section 45 of the Act details the various conditions that may be set under the new regime. Section 46 details who those conditions may be imposed upon. In relation to SMP services conditions, section 46(7) provides that they may be imposed on a particular person who is a communications provider or a person who makes associated facilities available and who has been determined to have significant market power in a "services market" (i.e.: a specific market for electronic communications networks, electronic communications services or associated facilities). Accordingly, having identified the relevant market as discussed in Chapter 2, Ofcom is required to analyse the market in order to assess whether any person or persons have significant market power as defined in section 78 of the Act (Article 14 of the Framework Directive).

Approach used to assess Significant Market Power

3.2 The Framework Directive and the EC Guidelines for market analysis and the assessment of SMP clarify that a market shall be deemed effectively competitive where no communications providers in that market possess SMP. Under the new Directives and section 78 of the Act, SMP has been newly defined so that it is equivalent to the competition law concept of dominance. Article 14(2) of the Framework Directive states that:

"An undertaking shall be deemed to have significant market power if, either individually or jointly with others, it enjoys a position equivalent to dominance, that is to say a position of economic strength affording it the power to behave to an appreciable extent independently of competitors, customers and ultimately consumers."

3.3 Further, Article 14(3) of the Framework Directive states that:

"Where an undertaking has significant market power on a specific market, it may also be deemed to have significant market power on a closely related market, where the links between the two markets are such as to allow the market power held in one market to be leveraged into the other market, thereby strengthening the market power of the undertaking".

3.4 Therefore, in the relevant market, one or more undertakings may be designated as having SMP where that undertaking, or undertakings, enjoys a position of dominance. Also, an undertaking may be designated as having SMP where it could lever its market power from a closely related market into the relevant market, thereby strengthening its market power in the relevant market.

3.5 In assessing whether an undertaking has SMP, this review takes the utmost account of the Commission's SMP Guidelines as well as Oftel's equivalent guidelines, as referred to in Chapter 1.

3.6 Article 16 of the Framework Directive requires that, where a national regulatory authority determines that a relevant market is not effectively competitive, it shall identify "undertakings" with SMP on that market and shall on such "undertakings" impose appropriate specific regulatory obligations. For the purposes of EC competition law, "undertaking" includes companies within the same corporate group (see *Viho v Commission* Case C-73/95 P [1996] ECR I-5447), for example, where a company within that group is not independent in its decision making.

3.7 Accordingly, Ofcom considers it appropriate that for the UK excluding Kingston upon Hull, the obligations detailed in Annexes D and E and the notification shall apply to British Telecommunications plc, whose registered company number is 1800000, and any BT subsidiary or holding company, or any subsidiary of that holding company, all as defined by Section 736 of the Companies Act 1985 as amended by the Companies Act 1989.

3.8 For the Kingston upon Hull area, Ofcom considers it appropriate that the obligations detailed in Annexes D and E and the notification shall apply to Kingston Communications plc, whose registered company number is 2150618, and any Kingston subsidiary or holding company, or any subsidiary of that holding company, all as defined by Section 736 of the Companies Act 1985 as amended by the Companies Act 1989.

Assessment of SMP

3.9 Ofcom's complete assessment of SMP is set out in Annex B of this document. This chapter summarises Ofcom's findings for each of the leased lines markets, presenting the conclusions and identifying in brief the key criteria that have led to these conclusions. The SMP assessment is based on the evidence available to Ofcom and takes account of comments made in the April and December 2003 consultations.

UK excluding Kingston upon Hull

Wholesale low bandwidth traditional interface symmetric broadband origination (up to and including 8Mbit/s)

3.10 Ofcom has, as noted in the introduction to Chapter 3, examined the traditional interface symmetric broadband origination ("TISBO") markets in the absence of any regulation at either the retail or the wholesale level.

3.11 Ofcom has concluded that BT has SMP in the market for wholesale low bandwidth TISBO. BT is able to behave, to an appreciable extent, independently of competitors and customers. The reasons for this, principally, are:

- BT controls a wide reaching infrastructure;
- it is able to exploit economies of scope and scale more effectively than other communications providers; and
- there are significant barriers to entry, including sunk costs.

3.12 This conclusion is supported by data on market shares, collected at the retail level. BT's market share in low bandwidth TISBO is likely to be significantly larger than its retail market share, in excess of 80 per cent. It is also supported by BT's past behaviour in the absence of regulation in failing to supply symmetric broadband origination (other than as part of retail leased lines at retail prices, at charges well in excess of cost-based prices). This is explained in more detail in Annex B.

Responses to the draft notification – RBS Backhaul

3.13 BT disputed that it has SMP in the provision of RBS backhaul, suggesting that evidence showed that mobile communications providers were self-providing RBS backhaul through radio or microwave links or through the use of dark fibre.

3.14 BT argued that even where mobile communications providers purchased RBS backhaul from BT, there was no evidence that the prices charged by BT were above the competitive level. BT argued that mobile communications providers have strong countervailing buyer power, reducing any market power that BT may be able to exert and that as the provision of RBS backhaul was generally tendered for on a regional basis, a ubiquitous fibre network was less of an advantage.

3.15 Ofcom considers that it is not appropriate to distinguish the circuits used to provide RBS backhaul from those used to provide other types of leased lines. In functional terms, the circuits used to provide RBS backhaul are essentially the same as those used to provide PPCs. As such, these circuits fall within the low bandwidth TISBO and trunk segments markets.

3.16 Ofcom has concluded that BT has SMP in the markets for low and high bandwidth TISBO products and, as such, it is appropriate that regulation be imposed on all circuits that fall within these markets, including RBS backhaul circuits. Ofcom notes that self provision of RBS backhaul via is feasible in some instances (e.g. through radio or microwave links). However, such self provision is infeasible in many instances due to, for example:

- line of sight problems;
- in many urban sites (below roof level) capacity being better served by non-wireless solutions; and
- sites in certain geographic locations, such as shops or airports requiring in-building applications.

The above limiting factors explain why BT is unconstrained in many instances and why it supplies over half of all RBS backhaul circuits.

3.17 Ofcom is of the view that the ubiquity of BT’s network is of key importance in this market as evidenced by, as outlined in the RBS Backhaul Direction, the very small (well below 5%) share of each of the alternative communications providers. Ofcom’s view is that buyer power is unlikely to be a key factor in this market given the inability of self-supply or alternative communications providers to be able to offer the same level of coverage as BT, and the limitations of radio/microwave based technologies outlined above.

Conclusions – SMP in low bandwidth TISBO

3.18 For the reasons set out above, Ofcom has concluded that BT has SMP in the market for low bandwidth symmetric broadband origination.

Likelihood of competition developing in the future

3.19 Ofcom has considered the potential impact of external factors on this market during the period covered by this review. Ofcom’s view is that there are no developments that would generate sufficient competitive pressures within the next 2-

3 years to alter the current finding of SMP. This is because the sources of SMP are high structural barriers to entry and because demand conditions and technological progress are unlikely to be able to reduce the strength of these entry barriers in the near future. However, Ofcom will keep market conditions under review.

Wholesale high bandwidth traditional interface symmetric broadband origination (above 8Mbit/s up to and including 155Mbit/s)

3.20 Ofcom has, as noted in the introduction to Chapter 3, examined the traditional interface symmetric broadband origination ("TISBO") markets in the absence of any regulation at either the retail or the wholesale level.

3.21 Ofcom has concluded that BT has SMP in the market for wholesale high bandwidth TISBO. BT is able to behave, to an appreciable extent, independently of competitors and customers. This is possible because, principally:

- BT controls a wide reaching infrastructure;
- BT is able to exploit economies of scope and scale more effectively than other communications providers; and
- there are significant barriers to entry, including sunk costs, in this market.

3.22 This conclusion is supported by data on market shares, collected at the retail level. BT's market share in high bandwidth TISBO is likely to be larger than its retail market share, which itself is in the region of 40 to 50 per cent and has not declined over the last few years. It is also supported by BT's ability to supply above cost, as evidenced by BT's high ROCE figures and high initial PPC charges. This is explained in more detail in Annex B.

Responses to the draft notification – SMP in high bandwidth TISBO

3.23 BT has argued that the level of competition it faces for high bandwidth TISBO circuits varies across the country and has suggested that in certain metropolitan areas it does not hold SMP. BT has provided Ofcom with a study carried out on its behalf by Analysys, which estimates that in certain metropolitan areas BT's share of the relevant market may be below 30%.

3.24 As outlined in Chapter 2, Ofcom remains of the view that a national market analysis is the most appropriate basis upon which to analyse leased lines markets. Given that BT's share of the national high bandwidth TISBO market is over 50%, Ofcom has concluded that BT has SMP in this market.

3.25 BT's comments on RBS backhaul in this market and Ofcom's responses to these comments are dealt with at paragraphs 3.15 to 3.17 above.

Conclusions – SMP in high bandwidth TISBO

3.26 For the reasons set out above, Ofcom remains of the view that BT has SMP in the market for high bandwidth TISBO circuits.

Likelihood of competition developing in the future

3.27 Ofcom has considered the potential impact of external factors on this market during the period covered by this review. Ofcom's view is that there are no developments that would generate sufficient competitive pressures within the next 2-

3 years to alter the current finding of SMP. However, Ofcom will keep market conditions under review.

Wholesale very high bandwidth traditional interface symmetric broadband origination (over 155Mbit/s)

3.28 Ofcom has, as noted in the introduction to Chapter 3, examined the traditional interface symmetric broadband origination ("TISBO") markets in the absence of any regulation at either the retail or the wholesale level.

3.29 Ofcom has concluded that BT does not have SMP in the market for wholesale very high bandwidth TISBO. This conclusion has been reached because, principally, barriers to entry appear to be much lower in relation to the potential rewards than for other bandwidths, since other communications providers have found it relatively easy to enter this market. This is demonstrated by BT's relatively low market share of this market, which is equal to approximately 10%.

Responses to the draft notification – SMP in very high bandwidth TISBO

3.30 Communications providers suggest that BT has SMP in very high bandwidth TISBO, for a number of reasons.

3.31 Firstly, they suggest that the market share data obtained by Ofcom may have been misinterpreted as it may fail to take account of very high bandwidth TISBO circuits purchased by one communications provider from another communications provider and then sold on to a third party customer. The communications providers suggest that this would lead to their share of the market being overstated.

3.32 Secondly, communications providers suggest that even at very high bandwidths, the cost of putting in place new ductwork and fibre to serve a premises is so high as to make it uneconomical over anything other than very short distances.

3.33 Some communications providers suggested that very high bandwidth LLU backhaul products don't face the same level of competition as other very high bandwidth TISBO products and that, as such, SMP condition should be imposed for LLU backhaul.

3.34 Ofcom recognises that some degree of double counting may have taken place when assessing the market share of communications providers but has concluded that it is insufficient to cause BT's market share to increase to a level associated with SMP. If the number of very high bandwidth TISBO circuits that BT sells were in reality to account for 40% or more of the market, each circuit provided by a communications provider would need to have been sold through a chain of at least two other communications providers before being sold to the end third party customer. The information held by Ofcom on the undertakings to which very high bandwidth circuits are provided suggests that this is not the case.

3.35 Ofcom notes the point made by communications providers as to the cost of putting in place new ductwork and fibre. But BT's low market share suggests that communications providers are able to compete successfully in this market. This suggests that the demand for very high bandwidth TISBO circuits is in most cases, currently in areas where communications providers already have existing duct and fibre or in close proximity to these areas.

3.36 Ofcom does not consider it appropriate to impose SMP conditions on the provision of very high bandwidth LLU backhaul using traditional interface technology as it forms part of the very high bandwidth TISBO market, and the underlying economics of the supply of this product seem likely to mirror those of the end-to-end retail product. Given that LLU backhaul links are used to connect local exchange sites, rather than customer sites, to core networks, Ofcom's view is that market entry should be no more difficult than in the case of other PPCs, since in a significant proportion of cases a less extensive network reach will be required. Given Ofcom's conclusions that BT does not have SMP in this market, it is inappropriate for Ofcom to require the provision of very high bandwidth LLU backhaul.

Conclusions – SMP in very high bandwidth TISBO

3.37 For the reasons set out above, Ofcom has not received compelling evidence to change its previous view that BT does not have SMP in the market for very high bandwidth TISBO.

Wholesale alternative interface symmetric broadband origination

3.38 Ofcom has, as noted in the introduction to Chapter 3, examined the alternative interface symmetric broadband origination ("AISBO") market in the absence of any regulation at either the retail or the wholesale level.

3.39 Ofcom has concluded that BT has SMP in the market for wholesale AISBO. BT is able to behave, to an appreciable extent, independently of competitors and customers. This is possible because, principally:

- BT controls a wide reaching infrastructure;
- BT enjoys advantages resulting from its vertical integration;
- BT is able to exploit economies of scope and scale more effectively than other communications providers; and
- there are significant barriers to entry, including sunk costs, in this market.

3.40 This conclusion is supported by data on market shares, collected at the retail level for alternative interface products. BT's market share in AISBO is likely to be larger than its retail market share, which itself appears to be above 50%.

Responses to the draft notification – SMP in AISBO

Market scope and SMP assessment

3.41 BT argued that Ofcom has failed to correctly identify the full scope of the product market, and that BT's pricing of AISBO circuits was likely to be constrained by the availability of alternative products that fall within the same market. In particular, BT argued that Oftel's analysis failed to take account of competition from cheaper, non-fibre based, alternatives such as wireless or freespace optic based leased lines.

3.42 BT also suggested that some self-provision by end users may occur, with large organisations purchasing dark fibre and sourcing their own terminating equipment in order to create alternative interface leased lines. BT provided data obtained from its equipment providers which suggested that BT had a market share below 30%.

3.43 BT further argued that different competitive conditions exist in different areas of the UK, based on the varying availability of access fibre belonging to other communications providers and the technical limitations of different types of alternative interface leased lines. An assessment carried out by BT of 40 cities in the UK found that in 25 of them BT faced competition for the provision of alternative interface circuits from between three and seven competitors. On this basis, BT argued that separate geographic markets exist and that any SMP finding should not be countrywide.

3.44 Ofcom agrees that some wireless and freespace optic based alternative interface products fell within the AISBO market, and that self-provision of alternative interface leased lines may occur. Its discussion of the impact of these factors on Ofcom's SMP assessment is provided below.

3.45 As outlined in Chapter 2 above, Ofcom currently considers it appropriate to analyse leased lines markets on a national basis.

3.46 Ofcom considers that retail purchasers of alternative interface leased lines have two main ways in which they can source these circuits. The first is to purchase the whole leased line from a communications provider (using either of a fibre or wireless based technology), who would generally be responsible for the installation, maintenance and repair of that leased line. The second option is to source the individual components of the leased line from other suppliers i.e. purchasing separately the equipment (be it NTE for fibre or wireless equipment) and any transit medium (e.g. fibre) and self-provide the leased line.

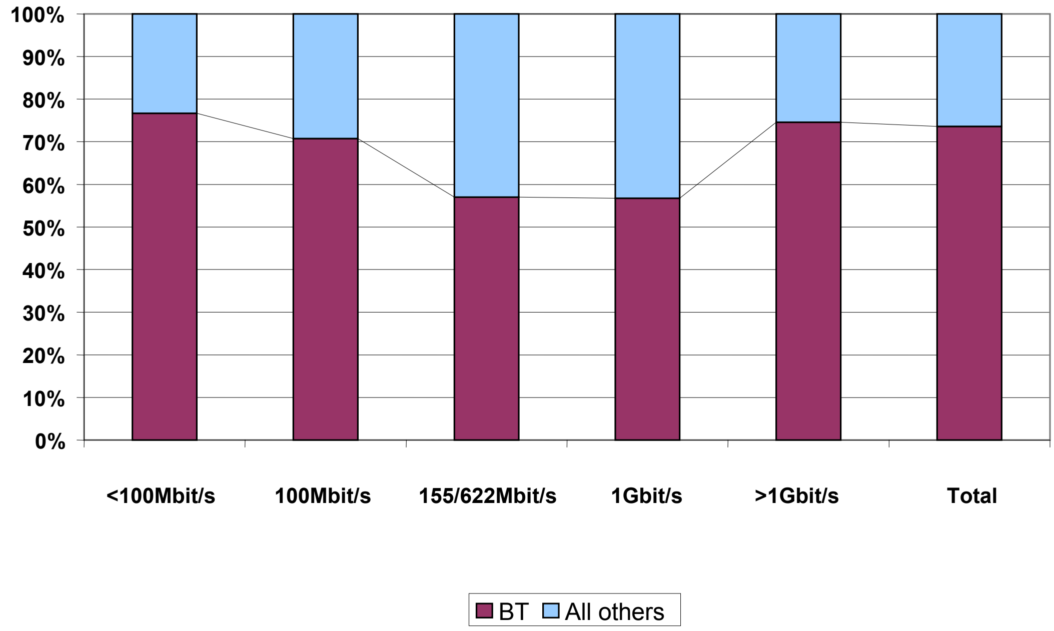
3.47 Ofcom is of the view that both these methods of providing alternative interface leased lines fall within the same market as the end product is almost identical in both situations in terms of the bandwidth and functionality provided. However, there are a number of ways in which the self provided product is a lower quality option relative to the carrier provided version. These are likely to be related to factors such as maintenance, fault finding and repair, and service level guarantees. This means that self provision may not provide an effective constraint on the pricing of BT's retail AISBO services. Ofcom has nonetheless attempted to quantify the impact on market shares of including self provided circuits in the defined market.

Carrier provided alternative interface leased lines

3.48 In order to update its market share analysis, Ofcom gathered a detailed data set concerning the market shares of communications providers in the provision of retail alternative interface circuits during March and April 2004. Data was collected from 20 communications providers and covered providers of both fibre and wireless based leased lines. In addition to data on retail leased lines sold, information on the supply of dark fibre was also requested. This data showed that BT's share of the communications provider supplied part of the retail alternative interface market is above 70%.

3.49 As outlined at paragraphs 2.106 to 2.158 above, Ofcom's view is that there is a single market for alternative interface circuits that is not split according to bandwidth. However, for completeness and to address BT's suggestion that bandwidths splits exists, Ofcom has analysed BT's market share split according to bandwidth. This is shown in Figure 3.1 below and indicates that, regardless of bandwidth, BT has a high market share. These figures were calculated by gathering information on the total number of alternative interface circuits sold by all the major UK carriers, based on a list of players supplied by BT.

Figure 3.1 – retail alternative interface market share by bandwidth of circuits provided (carrier segment)



3.50 An assessment of the data obtained by Ofcom further showed that a significant number of the circuits provided by communications providers at the retail level (over 5% of the total alternative interface market) were supported using wholesale inputs provided by BT. When this is taken into account, BT's market share of the carrier provided sector of the wholesale AISBO market is over 78%.

Wireless based services

3.51 Ofcom's view is that wireless based solutions are unlikely to provide a strong competitive constraint on the majority of BT's AISBO circuits. This is based on three considerations.

3.52 The first of these is that the information available to Ofcom suggests that the use of wireless is not currently widespread. Sales information obtained from providers of wireless-based leased lines suggests that their share of the market accounts for a relatively small proportion (less than 5%) of the total alternative interface market, and that this figure would be lower if self-provision were to become more widespread.

3.53 Secondly, there are reasons to think that this will persist on a forward-looking basis, since:

- the requirement for line-of-sight means that wireless solutions are typically not viable alternatives to fibre, particularly in dense, built-up urban areas where the majority of demand for alternative interface circuits is centred; and
- the fact that the bandwidth available generally decreases as distance increases means that wireless is likely to be a particularly poor substitute for fibre-based alternative interface services at higher bandwidths.

3.54 Thirdly, a number of communications providers have told Ofcom that their customers do not view wireless to be as reliable or secure as fibre.

3.55 Freespace optics are a relatively recent development and Ofcom does not believe that they are likely to develop to a sufficient extent over the next two years to form a competitive constraint on BT during this period. The technology requires line of sight between customer premises using a laser diode to transmit data between the respective sites. The technology is a relatively recent addition into the range of technologies used to provide point to point transmission links. Freespace optics can be deployed as a substitute for other technologies but there are some doubts as to whether it will ever be widely deployed due to the requirement for line of sight and the doubts about its robustness. There have been a limited number of installations of AISBO circuits using freespace optics and, although this number is expected to grow, Ofcom's view is that this will only ever make up a relatively small part of the AISBO market due to the limitations of the technology outlined above.

Fibre based circuits – self provision

3.56 It is difficult to assess the precise extent of the self provision share of the alternative interface market due to the large number of equipment and fibre suppliers and the number of different uses to which the equipment and fibre could be put other than for the provision of alternative interface leased lines. Simply looking at the supply of dark fibre does not identify what products that fibre is being used to provide and whether those products fall within the AISBO market. Dark fibre could also be used to extend the networks of communications providers or for the provision of traditional interface or asymmetric broadband products. Similarly, some of the equipment used to provide alternative interface circuits to end users could also be used within communications providers' networks or for the provision of WDM services.

3.57 In considering the scope of self-supply using dark fibre, Ofcom has done two things:

(i) considered the availability of dark fibre across the UK; and
(ii) looked at sales data from manufacturers of alternative interface equipment.

3.58 Ofcom has considered, from a feasibility perspective, the extent to which communications providers are able to supply dark fibre to retail customers. Communications providers lack the same ubiquity of duct and fibre network that BT has and, as such, are able to provide fibre in far fewer cases than BT. As discussed in Chapter 2, even in areas of high demand where communications providers have substantial networks, such as the Central London Zone, there are still a significant number of retail business customers that communications providers are unable to reach. This means that the sourcing of dark fibre from competing infrastructure providers in order to self-supply an alternative interface leased line is likely to be infeasible in many situations. This is backed up by the fact that a number of communications providers have advised (supported by BT's sales data) that in many cases they are reliant on BT's retail LES products in order to supply alternative interface circuits to their customers. Were dark fibre widely available for purchase, Ofcom would expect communications providers to take advantage of it in order to provide alternative interface circuits to their customers at lower cost than using BT's retail products. Other communications providers have strongly supported Ofcom's proposals as regards alternative interface leased lines, arguing that without a wholesale equivalent being made available, they will be unable to compete against BT at the retail level for major contracts.

3.59 Ofcom has also gathered data from communications providers as to the amount of dark access fibre that they currently sell. Such information is incomplete in that it does not indicate the extent to which dark fibre is used to support AISBO type services. However, the information received by Ofcom showed that on average each communications provider supplied dark fibre to a relative small number of retail customers, meaning that, even if all such fibre were used to provide AISBO services, BT's share of the total market would remain close to 70%.

3.60 Data on equipment sales also needs to be treated with caution when estimating the importance of self-provision within the market as a whole. The quantitative information most relevant to the strength of BT's market position is its share of the *total installed base* of AISBO circuits, which is a "stock" measure. In contrast, data on the sales of equipment providers in a particular time period is a "flow" measure, which reflects only the *additions* to each company's installed base of customers and could, for example, include replacement or upgrade equipment for existing leased lines. Given this, Ofcom is inclined to put a limited amount of weight on such measures. However, it has looked at data from one equipment supplier in order to assess the extent to which its sales were to retail customers as opposed to communications providers, in order to gain some further understanding of the likely size of the self-provide market.

3.61 The largest UK supplier of Ethernet-based alternative interface equipment is ADVA Optical Networking (ADVA). Sales data provided by ADVA for the period between January 2002 and April 2004 suggest that the vast majority (over 95%) of its sales have been to communications providers as opposed to retail customers. Of these sales to communications providers, the majority were to BT. This limited number of sales to retail customers (as opposed to communications providers), together with the relatively small sales of dark access fibre referred to above, means that Ofcom is of the view that it is extremely unlikely that the self-supply segment of the market is very large, and that, whilst BT's share of the overall market cannot be precisely quantified, is likely to be quite close to its share of the carrier market, and well above a level that would be consistent with BT being dominant in the market.

3.62 Ofcom notes that its snapshot regarding Ethernet equipment sales may be distorted by the fact that BT is the largest single purchaser of leased lines equipment in the market and that it purchases the majority of its alternative interface equipment from ADVA. This means that the full extent of self-provision is therefore likely to be greater than that suggested by the figures provided by BT's equipment provider. However, given the extent of BT's share, and the fact that ADVA is the largest supplier in the market, Ofcom's view is that its estimates are unlikely to be significantly biased upwards.

BT's overall market share

3.63 Given BT's superior network reach, its very large share of the market shared by it and the other communications providers, and the modest degree of self-provision implied by the sales data of BT's equipment providers and the known limitations in the availability of fibre networks belonging to other communications providers, Ofcom has concluded that BT has SMP in the AISBO market. Ofcom considers that BT's SMP is not currently mitigated by historical or potential self-provision and that BT's current share of the market is at a level consistent with a position of dominance. Ofcom's market share information suggests that, absent self-provision, BT's retail market share, on a "number of circuits" basis, is in excess of 70%. The evidence that Ofcom has gathered strongly suggests that BT's market share is above a level that would be considered to be consistent with a dominant position on BT's part. For example, the self-provide market would need to number approximately 10,000 circuits, twice the number of alternative interface circuits collectively sold by competing communications providers (this is relevant because alternative communications providers would be a key source of dark fibre in the self provision market), for BT's share of the market to be below 50%. The information gathered by Ofcom on dark fibre sales and Ethernet equipment sales suggests that this is unlikely to be the case.

3.64 Ofcom's estimate of BT's market share is significantly higher than BT's own estimate, which is in the region of 30%. Ofcom's view is that its own estimate is substantially more reliable than that of BT, being based on evidence from three separate sources, namely: communications providers (including wireless), equipment manufacturers, and suppliers of dark fibre, whereas BT's estimate appears to be based on a single measure, namely the sales data of equipment suppliers. Ofcom's view is that its own estimate is more reliable since it takes into account the total base of circuits offered by all communications providers. Ofcom has only used the equipment supplier as a cross-check, and to help it attempt to quantify the extent of self provision in the market.

Other factors

3.65 BT suggested that Oftel's comparison of its prices with the costs of its competitors (used by Oftel to demonstrate the difficulty faced by other infrastructure providers in attempting to compete with BT) failed to take account of the 'additional charges' element of BT's service provision, which is included in the headline prices of competitors but not BT. These charges cover the cost of additional duct and fibre that needs to be put in by BT in order to provide service to the end user.

3.66 BT is correct in stating that Oftel's analysis did not take into account this "additional charges" element of BT's charges. However, information subsequently supplied by BT suggests that correcting this omission does not materially alter the results of Ofcom's analysis, and hence does not alter the conclusions drawn from it. BT's information suggested that, over a sample period chosen by BT between December 2003 and February 2004, these additional charges were incurred in fewer than 15% of the new installations in that period. Additionally, the average size of these additional charges per installation was not sufficiently large to impact on Ofcom's analysis even in those few cases in which they were incurred - the average charge levied being equal to approximately one-third of the connection charge associated with BT's LES 100 circuits, and as such not materially impacting on Ofcom's analysis.

3.67 BT argued in its response that no evidence has been provided of BT's ability to price independently of its competitors through entry barriers such as high sunk costs, vertical integration, scale and scope economies or infrastructure build. BT pointed to the fact that there is significant demand for alternative interface circuits from government departments and local authorities, who use a tender process, reducing any ability to exercise market power. BT suggests that the current demand for alternative interface products is high, justifying investment in networks by competitors, and is indicative of a new market in a growth phase where market shares are unlikely to be stable.

3.68 Ofcom's view is that the sunk costs that must be incurred in order to offer AISBO products are a key determinant of BT's strong position in this market. As outlined in paragraphs 2.106 to 2.158 above, evidence supplied to Ofcom by communications providers other than BT suggest that, even in metropolitan areas such as central London, their fibre networks remain some way from being able to offer ubiquitous coverage. This factor is significant when considered together with the substantial dig costs that must be incurred in order to offer such services. Given the relatively low cost of Ethernet end-user equipment, these dig costs represent a particularly large proportion of the total costs of providing AISBO. The approximate magnitude of these costs on a national average basis are provided in Annex B, (see paragraph B.235) but Ofcom has additionally been supplied with confidential data supplied by alternative communications providers that suggests that per metre dig costs are very substantially higher than this in certain area types, notably in built-up metropolitan areas.

3.69 Ofcom's view is that buyer power is very unlikely to mitigate BT's market power in the AISBO market. Information previously supplied by BT to Oftel shows that, in 2003, in the provision of AISBO circuits at the retail level at between 155Mbit/s and 1Gbit/s (which together represent under 6% of BT's total base of AISBO circuits) it sold circuits to over 150 individual customers, with only one of these customers accounting for over 5% of all such circuits (and even then well under 10% of the total). Many of the largest purchasers of BT's retail AISBO offering are communications providers who compete with BT at the retail level. Such companies will clearly be in a weak position to exercise buyer power if BT is competing with them for business at the retail level. Based on the small sample of circuits referred to above, all of BT's true "retail" customers, i.e. customers other than alternative communications providers, accounted for less than 2.5% of BT's sales of AISBO circuits each. In this context, Ofcom's view is that buyer power is unlikely to play a key role in the AISBO market. Although the tender process is well established in leased lines markets, it is unlikely to mitigate BT's market power given its wide-ranging advantages over other communications providers.

Conclusions – SMP in AISBO

3.70 For the reasons set out above, Ofcom remains of the view that BT possesses SMP in the market for alternative interface symmetric broadband origination.

Likelihood of competition developing in the future

3.71 Ofcom has considered the potential impact of external factors on this market during the period covered by this review. Based on the arguments set out above, Ofcom's view is that there are no developments that would generate sufficient competitive pressures within the next 2-3 years to alter the current finding of SMP. However, Ofcom will keep market conditions under review.

Wholesale trunk segments

3.72 Ofcom has, as noted in the introduction to Chapter 2, examined this market in the context of the remedies in the markets for symmetric broadband origination, but in the absence of the regulation for the retail and trunk segments markets.

3.73 Ofcom is aware that the number of competitors on trunk segment routes appears to differ significantly. For the reasons set out in Chapter 2 and Annex A, Ofcom has decided to define a national market. Having considered the evidence, Ofcom has concluded that BT has SMP in the national market for trunk segments.

3.74 BT is able to behave, to an appreciable extent, independently of competitors and customers. This is possible principally because of the following factors:

- the ubiquity of BT's infrastructure and the number of trunk routes subject to little or no competition;
- barriers to entry ;
- economies of scale; and
- BT's vertical integration.

It is evidenced by BT's ability to price above the competitive level, as discussed in Chapter 2, and the relatively high percentage of terminating segments with which trunk segments were purchased from BT (especially given the charges set by BT).

Responses to the draft notification – SMP in trunk

3.75 BT reiterated in its response to the draft notification its view that trunk routes are competitive, particularly those between major cities. BT provided an assessment of geographical variations in BT's market position that had been carried out for it by Analysys. This assessment showed that the level of competition faced by BT varied on a route-by-route basis. Ofcom's view on analysing distinct geographic areas on an individual basis is outlined in Chapter 2. As outlined in Chapter 2, Ofcom is of the view that a national market analysis is appropriate. Its view on the further concerns outlined by BT is set out in the sections below.

Inherent bias on focusing on BT's Network

3.76 BT argued that, if Ofcom were to focus its market analysis on BT's own network, this would overstate BT's advantage over other communications providers in the market for trunk segments. BT instead advocated the use of a market analysis based on the relative ability of each communications provider, including BT, to address certain key customer segments.

3.77 Ofcom acknowledges that, in the context of trunk segments, it has carried out a market analysis that is BT-network centric, in other words that it focuses on the proximity of other operators to BT's network (Tier 1) nodes rather than vice versa.

3.78 Ofcom's view is that the use of such an approach is, to a degree, inevitable given BT's dominance at the access level (i.e. in the markets for TISBO and AISBO). Since wholesale symmetric broadband origination is bought from BT, BT's nodes are the most relevant for the provision of trunk segments. In those cases where symmetric broadband origination is not provided by BT, i.e. is self-provided, bought from an alternative communications provider, or both, then BT's trunk network is likely to be a less relevant basis upon which to assess the market. Given BT's SMP in the markets for SBO, the BT centric view is relevant to the majority (all BT's own retail leased lines plus all those circuits it provides SBO to Altnets for) of the market, meaning that, while not relevant to the entire market, its use remains appropriate.

Node weighting factors

3.79 BT suggested that the weighting Oftel had chosen for its analysis of Tier 1 traffic was inappropriate as it includes a significant amount of non-leased lines traffic, includes traffic transiting through a node, and ignores traffic that is carried over other communications providers' networks. BT reiterated the arguments it made in its response to the April 2003 consultation that an analysis based on the number of businesses within postcode areas was more appropriate.

3.80 Ofcom's view is that the use of total traffic as a weighting factor is reasonable in the context of carrying out an SMP assessment in the market for trunk segments. As previously stated by Oftel, the traffic weighting is intended to provide a proxy of the number of private circuits connected to each Tier 1 node. The traffic weighting data provided the best information available to Ofcom for this purpose, and Ofcom is not aware of any way in which the use of a total traffic weighting would bias its analysis. The use of a different weighting analysis might shift the curve in Figure B.6 in Annex B up or down, or change its level of convexity flawing therefore the real incentive for competition that can instead be inferred from Figure B.6. However, any such changes would be unlikely to change the inference that Ofcom drew from Figure B.6, namely that it shows that, while there is potential for competition on a number of trunk routes, that as yet such potential has significant limitations.

Location of demand and alternative networks

3.81 BT provided evidence showing that the UK's population is highly concentrated in a relatively small geographic area (most obviously in the major cities), and that this pattern appears to be no less marked in the case of the distribution of business sites and BT's revenue. BT also provided evidence to show that the network roll-out of other communications providers, including PPC points of handover, has been centred on these high revenue areas of the UK.

3.82 The results of BT's analysis are reflected in Ofcom's analysis, being reflected, for example, in Figure B.6. Communications providers entering the market are, understandably, likely to locate their network in high revenue areas. As outlined above, Ofcom's view is that, given BT's dominance at the access level, a "BT centric" approach to the analysis of competition at the trunk level is appropriate. Ofcom notes that BT retains a high overall share of the market despite demand, and alternative networks, being concentrated in a relatively small area.

3.83 Ofcom's view is that this analysis does not change its views regarding the level of competition in the trunk market

Commercial agreements between other communications providers

3.84 BT argued that not being located at, or near to, a Tier 1 node need not constrain other communications providers' ability to compete against BT and each other as they are able to make commercial arrangements with each other for the supply of trunk. Ofcom's view is that this is not a key factor in its SMP analysis. While such arrangements may be increasingly important in the future, as outlined in Annex B, other communications are currently dependent on BT for the supply of trunk segments despite BT's current high charges, suggesting that a strong dependence will persist for the next 2-3 years. This indicates that such commercial agreements are, as yet, not a significant factor in the market.

Interconnection with BT's voice switches

3.85 BT pointed out that many communications providers have already built their networks to the majority of BT's Tier 1 nodes in order to interconnect with voice switches at these nodes.

3.86 Ofcom's view is that, while it is indeed widespread, interconnection at voice switches is currently insufficient to constrain BT's pricing of trunk segments. This is because interconnection at BT's DMSU sites does not enable a communications provider to buy PPCs from the corresponding Tier 1 node unless it has PPC/PSTN interconnections at these points, or it has co-sited PPC interconnections at the location. Traditionally leased lines and PSTN interconnection have been provided over separate infrastructure and, although the mixing of the two types of circuits is possible with new interconnect products, it is not currently possible for competitors to re-engineer existing interconnections to enable such mixing. Even in cases where PPC/PSTN mixing is in place, and assuming that the current PSTN interconnect uses fibre (so there is no capacity constraint), there is still an additional cost associated with converting a PSTN interconnect to a PPC/PSTN interconnect. It is additionally worth noting that BT does not always deliver end to end circuits via the Tier 1 nodes since it will in some cases be more efficient to deliver via Tier 1.5 or Tier 2. Consequently, a communications provider that is constrained only to deliver trunk via Tier 1 nodes may face routing inefficiencies that will restrict its ability to compete.

Market share assessment

3.87 Ofcom has calculated that BT's share of the trunk market is well in excess of the 50% consistent with for a presumption of SMP. BT's combined market share of all retail traditional interface leased lines is in excess of 70% by volume, and all of these leased lines that require trunk segments have the trunk element provided by BT. In addition, 56% of the PPCs sold by BT are sold with a trunk segment that is also provided by BT. This leaves less than 20% of all retail leased lines having a trunk segment provided by another communications provider.

3.88 Ofcom has further taken note of the fact that despite it appearing that there is a prospect of competition on major trunk routes, BT has nevertheless been able to maintain its prices significantly above the competitive level (see Annex B for details). A comparison of the per kilometre charges for PPC terminating segments (which should be priced at cost) and trunk indicates that the trunk charges are up to four times higher. Ofcom would expect trunk charges to be lower than those for terminating segments due to economies of scale. BT's ability to price at this level strongly suggests that other communications providers are not able to act as a competitive constraint on BT's ability to price above the competitive level and that, as such, BT has SMP in the market for trunk.

Conclusions – SMP in trunk

3.89 For the reasons set out above, in particular BT's ability to price on a national basis at a level considerably above that which would be expected in a competitive market, Ofcom has concluded that BT has SMP in the market for wholesale trunk segments.

Likelihood of competition developing in the future

3.90 Ofcom has considered the potential impact of external factors on this market during the period covered by this review. Ofcom's view is that, for the reasons set out above, there are no developments that would generate sufficient additional competitive pressures within the next 2-3 years to alter the current finding of SMP. However, Ofcom will keep market conditions under review.

Low bandwidth traditional interface retail leased lines (up to and including 8Mbit/s)

3.91 Ofcom has examined the market for low bandwidth traditional interface retail leased lines in the UK excluding Kingston upon Hull, which incorporates leased lines of bandwidths up to and including 8Mbit/s. This market includes retail leased lines constituting the minimum set of leased lines identified by the Commission in the Universal Service Directive (i.e. 64kbit/s and 2Mbit/s). If Ofcom finds that BT has SMP in this market it will be necessary, for the minimum set of leased lines, to introduce the regulation set out by the Commission in Annex VII of the Universal Service Directive. In addition, Ofcom will need to consider whether it is necessary to apply regulation to leased lines of other bandwidths in the market it has defined.

3.92 Ofcom has, as noted in the introduction to Chapter 3, examined this market in the context of the remedies in the markets for symmetric broadband origination and trunk segments, including PPCs at cost oriented charges, and cost orientation together with a prohibition on vertical discrimination for trunk segments. The analysis assumes an absence of regulation at the retail level.

3.93 Ofcom has concluded that BT has SMP in this market. In the absence of retail regulation BT is able to behave, to an appreciable extent, independently of competitors and customers. The evidence for this conclusion is:

- BT has a very high market share, in the region of 75% by value and higher still by volume, which has not declined substantially in recent years;
- the existence of contractual, financial, and perceived barriers to switching; and
- the remaining scope for vertical leverage by BT given the difference between marginal and average costs.

This conclusion is supported by international benchmarking data.

3.94 Ofcom considers that entry into this market has been difficult and unattractive. As a result, BT has been able to retain its substantial market share, competition is not intensive, and customers do not get good value for money. With the imposition of wholesale remedies this situation will improve significantly. But Ofcom does not consider that the increased competition in the next two years will be enough to mitigate BT's SMP sufficiently.

Responses to the draft notification – SMP in low bandwidth retail leased lines

3.95 BT suggested in its response that the availability of PPCs should allow for the deregulation of the low bandwidth leased lines market in the future.

3.96 While Ofcom agrees in principle with BT that upstream regulation should in future reduce or even obviate the need for continued regulation of retail leased lines, the full effects of regulation of PPCs have yet to feed through to the retail market and retail regulation remains justified for the period covered by this review as was fully explained in the draft notification. BT's share of the retail market remains very high (above 70%), a level that is clearly consistent with a finding of dominance on BT's part. In recognition of the increasing competitive pressures that continued wholesale regulation should bring, Ofcom has imposed a relatively light set of remedies on retail leased lines, as outlined in Section 5.

Conclusions – SMP in low bandwidth retail leased lines

3.97 For the reasons set out above, Ofcom has concluded that BT has SMP in the market for low bandwidth retail leased lines.

Likelihood of competition developing in the future

3.98 Ofcom has considered the potential impact of PPCs on this market during the period covered by this review. Ofcom's view is that, although PPCs are likely over a longer period help to create competitive conditions at the retail level, they are unlikely to generate sufficient competitive pressures within the next 2-3 years to alter the current finding of SMP. However, Ofcom will keep market conditions under review.

General responses to the draft notification

3.99 It was suggested by several communications providers that BT's SMP stems from control of its duct network and that as such, the appropriate remedy is local fibre unbundling.

3.100 Dark fibre provides an input into the markets considered by this review (at both the access and core levels) as well as into other markets that do not fall within the scope of this review. Any market(s) for dark fibre would therefore sit upstream of the markets covered by this review. It would be inappropriate for Ofcom to impose any fibre unbundling remedy without first properly defining the relevant market and assessing whether any communications provider has SMP in that market. Consideration of BT's duct and dark fibre network are outside the scope of this market review.

3.101 Concern was also raised by one communications provider about the way in which the Valuation Officer applies network infrastructure rates. It was alleged that these rates are applied in a discriminatory manner and that as a result BT faced lower costs than its competitors for network build, thereby increasing barriers to entry and increasing BT's SMP.

3.102 Ofcom notes that a complaint has been made to the European Commission regarding the network infrastructure rates set by the Valuation Officer, suggesting that the current system amounts to state aid. The outcome of the European Commission's investigation into this matter is unlikely to significantly affect Ofcom's assessment of SMP in the relevant markets as the effects of the Commission's decision are unlikely to be felt during the period of the current review.

Conclusions – general responses

3.103 None of the general comments made in response to the draft notification have caused Ofcom to amend the conclusions on SMP it has reached in the markets discussed above.

Kingston upon Hull

Wholesale low bandwidth traditional interface symmetric broadband origination (up to and including 8Mbit/s)

3.104 Ofcom has, as noted in the introduction to Chapter 3, examined the traditional interface symmetric broadband origination ("TISBO") markets in the absence of any regulation at either the retail or the wholesale level.

3.105 Ofcom has concluded, on the basis of its analysis set out in Annex B, that Kingston has SMP in the market for wholesale low bandwidth TISBO. Kingston is able to behave, to an appreciable extent, independently of competitors and customers. This is possible because, principally:

- Kingston controls an infrastructure that is not easy for competitors to duplicate;
- it is able to exploit economies of scope more effectively than other communications providers; and
- there are significant barriers to entry, including sunk costs.

3.106 This conclusion is supported by estimates of market shares, provided by Kingston, showing a market share in low bandwidth TISBO in the region of 75%. This is explained in more detail in Annex B.

Likelihood of competition developing in the future

3.107 Ofcom has considered the potential impact of external factors on this market during the period covered by this review. Ofcom's view is that there are no developments that would generate sufficient competitive pressures within the next 2-3 years to alter the current finding of SMP. This is mainly because of the existence of substantial barriers to entry. As an incumbent, Kingston has sunk the costs of network deployment, and entrants will not be in a position to effectively compete at the wholesale level until they have sunk these costs. Another reason, also deriving from the legacy position of Kingston, is the greater economies of scope enjoyed by Kingston compared to those of any entrant. However, Ofcom will keep market conditions under review.

Wholesale high bandwidth traditional interface symmetric broadband origination (above 8Mbit/s up to and including 155Mbit/s)

3.108 Ofcom has, as noted in the introduction to Chapter 3, examined the traditional interface symmetric broadband origination ("TISBO") markets in the absence of any regulation at either the retail or the wholesale level.

3.109 Ofcom has concluded that Kingston has SMP in the market for wholesale high bandwidth TISBO, on the basis of its analysis set out in Annex B. Kingston is able to behave, to an appreciable extent, independently of competitors and customers. This is possible because, principally:

- Kingston controls an infrastructure that is not easy for potential competitors to duplicate;
- it is able to exploit economies of scope more effectively than other communications providers; and
- there are significant barriers to entry, including sunk costs.

3.110 This conclusion is supported by estimates of market shares, provided by Kingston, showing a market share in high bandwidth TISBO in the region of 65%. This is explained in more detail in Annex B.

Likelihood of competition developing in the future

3.111 Ofcom has considered the potential impact of external factors on this market during the period covered by this review. Ofcom's view is that there are no developments that would generate sufficient competitive pressures within the next 2-3 years to alter the current finding of SMP. However, Ofcom will keep market conditions under review.

Wholesale very high bandwidth traditional interface symmetric broadband origination (above 155Mbit/s)

3.112 The information made available to Ofcom suggests that there are currently no very high bandwidth retail or wholesale TISBO products sold in the Kingston upon Hull area. Therefore, whilst the market for very high bandwidth TISBO is a potential future market, it does not currently exist in the Kingston-upon-Hull area. Given this, Ofcom considers it premature to conduct an SMP assessment.

Wholesale alternative interface symmetric broadband origination

3.113 Ofcom has, as noted in the introduction to Chapter 3, examined the alternative interface symmetric broadband origination ("AISBO") market in the absence of any regulation at either the retail or the wholesale level.

3.114 Ofcom has concluded that Kingston has SMP in the market for wholesale AISBO. Kingston is able to behave, to an appreciable extent, independently of competitors and customers. This is possible because, principally:

- Kingston controls an infrastructure that is not easy for potential competitors to duplicate;
- it is able to exploit economies of scope more effectively than other communications providers; and
- there are significant barriers to entry, including sunk costs.

3.115 This conclusion is supported by estimates of market shares, provided by Kingston, implying a market share in AISBO in the region of 65%. This is explained in more detail in Annex B.

Likelihood of competition developing in the future

3.116 Ofcom has considered the potential impact of external factors on this market during the period covered by this review. Ofcom's view is that there are no developments that would generate sufficient competitive pressures within the next 2-3 years to alter the current finding of SMP. However, Ofcom will keep market conditions under review.

Low bandwidth retail traditional interface leased lines (up to and including 8Mbit/s)

3.117 Ofcom has examined the market for low bandwidth traditional interface retail leased lines in Kingston upon Hull, which incorporates leased lines of bandwidths up to and including 8Mbit/s. This market includes retail leased lines constituting the minimum set of leased lines identified by the Commission in the Universal Service Directive (i.e. 64kbit/s and 2Mbit/s) and circuits of bandwidths between those identified in the minimum set.

3.118 If Ofcom finds SMP in this market it will be necessary, for the minimum set of leased lines, to introduce the regulation set out by the Commission in Annex VII of the Universal Service Directive. As there are no 8Mbit/s retail leased lines, Ofcom does not need to consider regulation for leased lines of 8Mbit/s.

3.119 Ofcom has, as noted in the introduction to Chapter 3, examined this market in the context of the remedies in the markets for symmetric broadband origination, but assuming an absence of regulation at the retail level.

3.120 Ofcom has concluded that Kingston has SMP in this market on the basis of its analysis in Annex B. Kingston is able to behave, to an appreciable extent, independently of competitors and customers. This is possible because, principally:

- Kingston has a very high market share, in the region of 80%, and this market share is unlikely to have declined much in recent years;
- Kingston benefits from vertical integration; and
- Kingston is able to exploit economies of scope more effectively than other communications providers.

3.121 Ofcom considers that entry into this market is likely to be difficult and unattractive due to the costs of doing so relative to the size of the market. As a result, Kingston has been able to retain its substantial market share, and competition is not intensive.

Likelihood of competition developing in the future

3.122 Ofcom has considered the potential impact of external factors on this market during the period covered by this review. Ofcom's view is that there are no developments that would generate sufficient competitive pressures within the next 2-3 years to alter the current finding of SMP. There are at least two reasons for this view. First, Kingston's market share is very high in the Hull area (83% including sales to other communications providers). Second the small size of, and the slow growth in, the Hull area make it unattractive for other communications providers to start supplying retail leased lines. However, Ofcom will keep market conditions under review.

Responses to the draft notification – SMP in Hull markets

3.123 Kingston's comments in response to the draft notification on the issue of SMP are generic to all the markets in the Hull area considered by Ofcom and have therefore been dealt with together, rather than after each market's SMP assessment.

3.124 Kingston expressed disappointment that Ofcom had failed to conclusively show that a complete and comprehensive market and SMP analysis have been carried out, querying why Oftel had relied on market share estimates provided by Kingston rather than using its information gathering powers to obtain details itself. Kingston suggests that the entire leased lines market in the Hull area is contestable on an end-to-end basis. The relatively small size of the Hull area means that entry barriers are low and that entry is relatively easy for communications providers operating in the rest of the UK. Kingston also suggested that the use of fixed radio at 28GHz and 3.4GHz provided new and cost effective competition to its fibre-based leased lines.

3.125 Kingston argues that although it may currently hold some degree of SMP, this will not endure and that as such *ex ante* regulation is not justified. Kingston suggested that Oftel had failed to show that Kingston could behave independently of competitors, customers and ultimately consumers in carrying out its SMP assessment and had instead relied on static market share information. If anti-competitive barriers existed in the Hull area, Kingston suggested that *ex post* remedies could be sought. Kingston suggested that if it was considered necessary to impose regulation that any obligations imposed should be proportionately less than those imposed on BT in the rest of the UK as Kingston's ability to exert market power was significantly less than BT's.

3.126 Ofcom disagrees with Kingston and believes that it has carried out a complete and comprehensive review of the market for the Hull area. Kingston does not appear to be disputing that it currently has SMP in the Hull area, but rather is disputing whether this SMP will endure and whether it is appropriate to impose regulation. Market share data provided by Kingston itself suggests that Kingston has a share of the retail market over 70%.

3.127 In a contestable market potential entrants face no barriers to entry. Competition takes the form of the threat of entry from potential entrants. This is sufficient to restrain the pricing behaviour of the incumbent and ensure the removal of supernormal profits. It is worth emphasising that the tests for a market to be contestable are extremely tough. In particular there must be no sunk costs at all. This clearly is not true for wholesale services in the Hull area. Kingston is able to behave, to an appreciable extent, independently of competitors and customers. This is possible because Kingston controls an infrastructure that is not easy for potential competitors to duplicate, it is able to exploit economies of scope more effectively than other communications providers and there are significant barriers to entry, including substantial sunk costs.

3.128 Although in absolute terms the scale of investment required to enter Hull markets may be relatively small, since the network build costs faced by potential entrants are comparatively small, nevertheless the size of the potential market is also relatively small making market entry less attractive. As has been identified earlier in this Chapter and in Chapter 2, communications providers are generally unwilling to extend their networks by more than 20-100 metres in order to serve a new customer and even the amount of investment necessary to extend their networks into Hull is likely to be too much for other communications providers to justify in the current financial climate when the potential returns are unlikely to be significant due to the size of the addressable market.

3.129 As discussed in relation to BT in paragraphs 3.51 to 3.55 above, Ofcom considers it unlikely that the use of wireless will constrain the ability of the incumbent communications provider to price above the competitive level. As such, Ofcom is of the view that Kingston's SMP in the Hull area is likely to endure and that it is appropriate to impose regulation in this market.

Conclusions – SMP in Hull markets

3.130 None of the comments above have caused Ofcom to amend its conclusions that Kingston has SMP in the markets for retail low bandwidth leased lines, low bandwidth TISBO, high bandwidth TISBO or AISBO.

Chapter 4

Approach to regulatory remedies

The legal framework for imposing regulatory remedies

4.1 As set out in Chapter 3, Ofcom concludes that BT has SMP in the following markets in the UK excluding the Hull area:

- retail low bandwidth traditional interface leased lines (up to and including 8Mbit/s);
- wholesale low bandwidth traditional interface symmetric broadband origination (up to and including 8Mbit/s);
- wholesale high bandwidth traditional interface symmetric broadband origination (above 8Mbit/s up to and including 155Mbit/s);
- wholesale alternative interface symmetric broadband origination; and
- wholesale trunk segments (including Kingston upon Hull).

4.2 Ofcom also concludes that Kingston has SMP in the following markets in the Hull Area:

- retail low bandwidth traditional interface leased lines (up to and including 8Mbit/s);
- wholesale low bandwidth traditional interface symmetric broadband origination (up to and including 8Mbit/s);
- wholesale high bandwidth traditional interface symmetric broadband origination (above 8Mbit/s up to and including 155Mbit/s); and
- wholesale alternative interface symmetric broadband origination.

4.3 As explained in Chapter 6 (see paragraphs 6.19-6.29), Ofcom has identified interconnection circuits as an appropriate technical area for the purpose of imposing appropriate regulatory remedies. The relevant interconnection circuits are:

- interconnection services, being In Span Handover ("ISH") and Customer Sited Handover ("CSH");
- ISH extension circuits; and
- Synchronous Transfer Mode ("STM")-1 ISH and CSH handover.

4.4 In the following chapters, Ofcom sets out the SMP services conditions to be imposed as the regulatory remedies to deal with BT's and Kingston's SMP in the markets set out above.

4.5 Section 87(1) of the Act provides that, where Ofcom has made a determination that a person is dominant in a particular market, it must set such SMP conditions as it considers appropriate and as are authorised in the Act. This implements Article 8 of the Access Directive.

4.6 Paragraphs 21 and 114 of the Commission's SMP Guidelines state that NRAs must impose one or more SMP conditions on a dominant provider, and that it would be inconsistent with the objectives of the Framework Directive not to impose any SMP conditions on an undertaking which has SMP. Thus, Ofcom is under an obligation to impose at least one appropriate SMP condition where SMP is confirmed.

The need for ex ante regulation

4.7 Recital 27 of the Framework Directive states that *ex ante* regulation should only be imposed where there is not effective competition and where competition law remedies are not sufficient to address the problem.

4.8 In this light, it is considered below whether *ex ante* regulation is justified in the markets identified above or whether it would be sufficient to rely on competition law alone to address market failures, while noting the obligation referred to in paragraph 4.6.

Introduction

4.9 As a competitive market will produce a more efficient outcome than a regulated market, the promotion of competition is central to Ofcom's goal of securing the best deal for the consumer in terms of quality, choice and value for money.

4.10 Where markets are effectively competitive, *ex post* competition law is sufficient to deal with any competition abuses that may arise. However, without the imposition of *ex ante* regulation to promote actively the development of competition in a non-effectively competitive market, it is unlikely that *ex post* general competition law powers will be sufficient to ensure that effective competition becomes established. For example, this is because *ex post* powers prohibit abuse of dominance rather than the holding of a dominant position. *Ex ante* powers can be utilised to reduce the level of market power in a market and thereby encourage effective competition to become established.

4.11 The risk is not all in one direction – the imposition of some *ex ante* measures can limit or add nothing to the development of competition. Ofcom has recognised this in removing some regulation where markets are not effectively competitive.

Characteristics of communications markets in general

4.12 Generally, the case for *ex ante* regulation in communications markets is based on the existence of market failures which, by themselves or in combination, mean that competition might not be able to become established if the regulator relied solely on its *ex post* competition law powers established for dealing with more conventional sectors of the economy. Therefore, it is appropriate for *ex ante* regulation to be used to address these market failures and entry barriers that might otherwise prevent effective competition from becoming established. By imposing *ex ante* regulation that will promote competition, it may be possible to reduce the need for such regulation as markets become more competitive, with greater reliance on *ex post* competition law.

4.13 The European Commission has stated, in paragraph 3 of section 3.2 of the Explanatory Memorandum to its Recommendation, that *ex ante* regulation is justified:

> *"[…] where the compliance requirements of an intervention to redress a market failure are extensive (e.g. the need for detailed accounting for regulatory purposes, assessment of costs, monitoring of terms and conditions[...])."*

This is the case for many markets where persistent SMP leads to a risk of a firm setting excessive prices and the need for efficiency incentives, where a price control would be justified, or where there is likely to be a need for intervention to set detailed terms and conditions for access to networks.

Market dominance

4.14 Although communications markets have in general become increasingly competitive over time, this is from a position in which most were controlled by a legacy monopoly communications provider. The increase in competition that has occurred inevitably reflects the imposition of *ex ante* regulation to counter the market power of the legacy communications provider. Moreover, despite this, the legacy communications providers remain, in Ofcom's view, strongly dominant in a number of key markets in this review. Therefore, it is appropriate to continue to impose *ex ante* regulations in these markets in order to ensure that effective competition can become established.

Network externality effects

4.15 Externality effects are present in many communications markets. In particular, the network externality effect, which means that the value of a network increases more than proportionately with the number of subscribers, gives the large incumbent network a great advantage over potential competitors. As a consequence, this would enable it to exclude rivals from the market.

4.16 General *ex post* competition law powers may not be sufficient to address the effects of the network externality. This is because the network externality effect generally reinforces a dominant position and under general competition law there is no prohibition on holding a position of dominance in itself. Therefore, it may be more appropriate to address the impact of network externality through *ex ante* obligations, for example by requiring interconnection with the incumbent's network.

Entry barriers

4.17 Communications networks are characterised by economies of scale, that is, average costs fall as output increases. Economies of scale result from the fact that a high proportion of the costs of a communications network are fixed while marginal costs (the costs of an extra unit of output) are relatively low. While the extent of economies of scale varies in different parts of the network, their existence means that a large network will tend to have lower average costs than a smaller one.

4.18 Successful entry by new network communications providers will therefore require significant investment and most of this will be sunk costs, in the sense that the costs will not be recoverable if the entrant decides to exit the market. Significant sunk costs create an asymmetry in the market between incumbents and potential entrants that the former could exploit to deter entry, if allowed to. Incumbents could exploit this asymmetry by signalling to a potential entrant that if it were to enter the market prices would be too low to cover sunk costs. Entry might therefore be deterred.

4.19 In addition, although entry at the retail level by communications providers without their own networks is likely to require relatively smaller sunk investments, it is also likely to require regulated supply of wholesale inputs if retail competition is to become established where there is market power at the network level.

4.20 Therefore, in many of the communications markets in this review, especially where there is a requirement for larger sunk investments, *ex ante* regulation is appropriate to address the effect of this barrier to entry.

4.21 Where appropriate, in considering whether it is necessary to impose appropriate and proportionate *ex ante* regulation to address the market failures identified, Ofcom has included a consideration of the sufficiency of competition law by itself in addressing market failures such as reducing or removing entry barriers or restoring effective competition.

4.22 In general, high and persistent entry barriers and absence of characteristics such that the market would tend towards effective competition are likely to justify possible *ex ante* regulation. *Ex ante* regulation would generally be considered to constitute an appropriate complement to competition law in circumstances where the application of competition law would not adequately address the market failures concerned.

4.23 Ofcom considers that in general, different considerations apply to the leased lines markets in Kingston upon Hull from those applicable in the remainder of the UK. Ofcom must of course apply the minimum level of regulation to the minimum set of retail low bandwidth leased lines as required by Annex VII of the Universal Service Directive, and will consider what other regulation is required in each of the markets being reviewed.

4.24 However, probably in view of the small size of the Kingston upon Hull market, there has to date not been the same level of interest expressed by other communications providers for the provision of retail leased lines to Kingston upon Hull-based customers. In view of this lack of demand, Ofcom considers that it would be disproportionate to apply the same level of *ex ante* regulation in the Kingston wholesale markets as it is introducing in the remainder of the UK – particularly if the imposition of such regulation would involve Kingston in considerable additional expense. This overarching factor will be borne in mind when assessing the regulatory options for the Kingston upon Hull area. These options are set out in Chapter 9.

Remedies

4.25 The Act (sections 45-50 and 87-92) sets out the obligations that Ofcom can impose if it finds that any undertaking has SMP. Sections 87 to 92 implement Articles 9 to 13 of the Access Directive and Articles 17 to 19 of the Universal Service Directive. The obligations relevant to this review are:

- the provision of network access;
- no undue discrimination;
- transparency;
- cost recovery, including price controls; and
- cost accounting and accounting separation.

4.26 Section 4 of the Act sets out the Community requirements on Ofcom which flow from Article 8 of the Framework Directive. Ofcom in considering whether to propose any conditions has considered all of these requirements. In particular, Ofcom has considered the requirements to promote competition in relation to the provision of electronic communications networks and electronic communications services, and to secure efficient and sustainable competition for the benefit of consumers. In addition, Ofcom considers that, in carrying out the above-mentioned functions and acting in accordance with the six Community requirements, it has also performed its general duties under section 3 of the Act. Namely, Ofcom considers that furthering the interests of citizens in relation to communications matters and of consumers in relevant markets, where appropriate by promoting competition, are matters forming part of its proposals and an outcome it also expects to achieve by the imposed remedies. In this context, Ofcom also notes that section 3(6) of the Act requires it to, in carrying out functions mentioned in section 4(1) of the Act, prioritise its duty under section 4 of the Act if any of its general duties conflict with it.

4.27 As well as being appropriate (see section 87(1)), each SMP condition must also satisfy the tests set out in section 47 of the Act, namely that each condition must be:

- objectively justifiable in relation to the networks, services or facilities to which it relates;
- not such as to discriminate unduly against particular persons or a particular description of persons;
- proportionate to what the condition is intended to achieve; and
- in relation to what it is intended to achieve, transparent.

4.28 It is Ofcom's view that the remedies satisfy the relevant requirements specified in the Act and relevant European Directives. This view is explained in detail in the following chapters.

ERG guidelines on regulatory remedies

4.29 The European Regulators Group (ERG) agreed a Common Position paper on 1 April 2004 relating to appropriate remedies in the new regulatory framework for electronic communications. The paper *ERG Common Position on the approach to Appropriate remedies in the new regulatory framework* ("the ERG paper"), aims to ensure a consistent and harmonised approach to the application of remedies by NRAs in line with the Community law principle of proportionality, and with the new framework's key objectives of promoting competition, contributing to the development of the internal market and promoting the interests of EU citizens.

4.30 The ERG paper sets out four principles that should be adhered to when imposing remedies. These are:

- the need to produce reasoned decisions;
- where infrastructure competition is not likely to be feasible, access to wholesale inputs should be made available;
- where infrastructure competition is feasible, remedies should assist in the transition process to a sustainable competitive market; and
- remedies should, where possible, be incentive compatible.

Need for decisions to be reasoned

4.31 The first principle set out in the ERG paper is that NRAs must produce reasoned decisions. This incorporates the need for the remedy to be based on the nature of the problem identified in the market analysis and SMP assessment and for a discussion on the proportionality of the remedy to be included.

4.32 Ofcom considers that it has clearly set out in the following chapters the need for imposing the remedies set out in Annexes D and E and has included a discussion on the proportionality of all the remedies imposed. Ofcom has identified in Chapters 2 and 3 where SMP is held in markets and why this SMP is likely to endure unless remedies are imposed.

Need to make available wholesale inputs where no infrastructure competition

4.33 The second principle is that where infrastructure competition is unlikely to be feasible, NRAs should ensure that sufficient access to wholesale inputs is made available. NRAs should further protect against potential behavioural abuses that may occur.

4.34 Ofcom has imposed network access obligations on all communications providers designated as having SMP in a market to ensure that sufficient wholesale inputs are made available to other communications providers where infrastructure competition is unlikely to develop in the period of the review. Ofcom has further imposed non-discrimination obligations and a requirement to publish key performance indicators to help ensure that any behavioural abuses can be quickly identified and stopped.

Need to assist in transition to a sustainable competitive market where infrastructure competition is feasible

4.35 The third principle is that where competition appears feasible, NRAs should ensure that remedies assist in the transition process to a sustainable competitive market.

4.36 Ofcom considers that the remedies it has imposed will assist in the transition to a sustainable competitive market, where competition appears feasible. In particular, the remedies that will allow BT to geographically de-average its prices (in line with costs) will enable BT to better react to competitive pressures in areas where competition is developing and enable separate geographic markets to be identified in the future.

Need for remedies to be incentive compatible

4.37 The fourth principle requires that remedies should be designed, where possible, so that the advantages to the dominant communications provider of complying with them outweigh the benefits of evasion.

4.38 The remedies imposed by Ofcom clearly give incentives on dominant communications providers to comply with them. Failure to comply with the conditions in Annex D or the Directions in Annex E could result in the offending communications provider facing fines under the Communications Act.

Conclusion

4.39 Ofcom considers that, for the reasons highlighted above and explained in more detail in the relevant chapters below, the remedies imposed are in line with the ERG’s Common Position. The remedies are proportionate and are aimed at improving competition in the market, thereby promoting the interests of consumers.

Chapter 5

Regulatory remedies – retail SMP services conditions for BT

Introduction

5.1 This chapter sets out the remedies for the retail low bandwidth traditional interface leased lines market in the UK excluding Hull. It begins with some more general comments on the aims of regulation in the retail leased lines markets, before moving on to set out the effect of, and Ofcom's reasons for setting SMP services conditions in this market. It also explains how certain tests in the Act are satisfied.

5.2 The conditions imposed in respect of BT are attached to the Notification in Annex D of this document.

5.3 Ofcom has identified for the purposes of section 79 of the Act only one distinct product market for retail leased lines. This is:

- retail low bandwidth traditional interface leased lines (up to and including 8Mbit/s). This incorporates the minimum set of retail leased lines identified by the Commission, that is retail leased lines of 64kbit/s and 2Mbit/s (which includes analogue leased lines), and retail leased lines of 8Mbit/s;

5.4 Ofcom has concluded that there are two separate geographic markets, one for the UK excluding Kingston upon Hull and one for Kingston upon Hull. The latter is considered separately in Chapter 8. The following discussion relates only to retail leased lines for the UK excluding Kingston upon Hull.

Aims of regulation

Regulation in other retail leased lines markets

5.5 Ofcom generally agrees with the view set out in the Commission's Recommendation that:

"It is not necessary to expand the retail leased line categories to capacities beyond the minimum set since there must always be a presumption that an intervention at a wholesale level will be sufficient to address any problems that arise".

5.6 Accordingly, Ofcom has concluded that the existing regulation applicable to high and very high bandwidth retail traditional interface leased lines should be removed and that no regulation should be imposed for retail alternative interface leased lines (see Chapters 6 and 7 for wholesale remedies).

Responses to the draft notification – other retail leased lines markets

5.7 Several respondents have argued that wholesale regulation is insufficient to reduce SMP and increase competition in the high and very high bandwidth retail leased lines markets. In particular, it is argued that price publication is necessary to enable competitors to monitor BT's behaviour and assess whether any margin squeeze is taking place. It was suggested that without a price publication obligation, it will be difficult for other communications providers and Ofcom to ensure that BT abides by its obligation not to discriminate against any of its customers.

5.8 The respondents argued that the assumption made by Oftel in the draft notification that any upheld complaints about margin squeeze would still have surfaced within a similar timeframe in the absence of a price publication obligation are not appropriate. They suggested that it is not possible to make such an assumption by reference to a regulatory regime where there actually was a price publication obligation imposed at the time.

5.9 It was further argued that, in the absence of retail price regulation, a dominant supplier is able to send confusing price signals that can prevent new and existing competitors from planning their business or raising capital. A lack of retail price regulation allows the dominant supplier to selectively discount whenever there is any possibility of competition and to move profit to those areas where competition is least.

5.10 It was suggested that it was necessary for Ofcom to carry out a series of “mini” market reviews to establish whether price publication or any other retail price regulation should be imposed in individual retail markets in order for it to discharge its duties under the Framework Directive. Even if a price publication obligation was not imposed, it was argued that at the very minimum a price notification obligation was necessary.

5.11 One communications provider argued that interim regulation of BT’s alternative interface retail leased lines was necessary as it is likely to take several months before wholesale variants of the products can be made available.

5.12 Ofcom remains of the view that it is inappropriate to impose regulation on the high and very high bandwidth retail leased lines markets. Before it could impose any such regulation, Ofcom would need to show that a communications provider holds SMP in these markets. On the basis of the information currently available to Ofcom, no communications provider appears to hold SMP in the very high bandwidth market, with BT’s share of this market being under 10%. Although the latest data suggests that BT has a market share of around 40% in the retail high bandwidth leased lines market, which suggests that SMP may exist, Ofcom is of the view that regulation at the wholesale level is sufficient to ensure that competition will further develop and that price publication obligations are unnecessary.

5.13 As was explained in the statement accompanying the draft notification, most complaints about margin squeeze originate either as a concern that a dominant provider has offered an unpublished discount or that a widely advertised price represents a margin squeeze relative to its regulated wholesale components. In neither instance would a price publication obligation help identify the offence and the fact that a price publication obligation was in force at the time is irrelevant. Respondents will still have visibility of the cost of the wholesale components of the high and very high bandwidth retail leased lines products and, coupled with the knowledge of their own selling costs and retail prices, this should enable them to identify potential margin squeeze issues where they are consistently losing out to BT when bidding for customers. In addition, Ofcom has adequate powers to require dominant providers to supply information needed to investigate allegations of anti competitive behaviour, whether those allegations are initiated by competitors or the regulator.

5.14 A price publication obligation *per se* provides no controls against margin squeeze and any action would have to be taken using competition law or some other regulatory provision. Ofcom is committed to applying the Competition Act rigorously and effectively. Exposure to a significant fine is likely to present a far more serious disincentive to anti competitive behaviour than a rule requiring the maintenance of a regulatory price list. The sharper focus of the new regulatory regime, and the narrower markets which are considered susceptible to *ex ante* regulation, are likely to give renewed prominence to the use of *ex post* competition law when tackling abuses.

5.15 With regard to preventing the vertical leverage of market power, Ofcom also notes that where a dominant provider is required to provide wholesale services on fair and reasonable terms but offers retail prices which create a margin squeeze, this may call into question whether, in the context of the retail prices offered, the wholesale prices can be considered fair and reasonable.

5.16 The absence of regulation for high and very high bandwidth leased lines at the retail level will not allow BT to selectively discount to such a degree that it is able to materially distort competition due to the existence of regulation at the wholesale level and the prohibition on margin squeeze. Ofcom will continue to take a close interest in the behaviour of vertically integrated dominant providers, particularly in markets which are reliant on new wholesale access products or where there are other reasons to believe that margin squeeze may occur. Ofcom will not hesitate to take action under the Competition Act 1998 and will give full consideration to making a designation under Articles 14(2) or 14(3) of the Framework Directive and imposing *ex ante* regulation. It is not, however, considered that such designations are necessary at present.

5.17 With regard to preventing the horizontal leverage of market power, Ofcom proposes dealing with this via its policy on the implementation of undue discrimination in the context of bundling in business markets.

5.18 With regard to the regulation of alternative interface retail leased lines, Ofcom does not consider it appropriate to impose any short term regulation in this market. Ofcom intends to resolve the dispute submitted by Energis regarding the provision of wholesale alternative interface products shortly after the conclusion of this market review and intends to set fairly stringent timescales for the provision of any products that it concludes are necessary as a result of the conclusion of that dispute.

Conclusion on the need for regulation in other retail leased lines markets

5.19 In the light of the above considerations, Ofcom has decided that it would not be appropriate or proportionate at this stage to expand the retail leased lines categories beyond those identified as being in the low bandwidth market.

Regulation in the low bandwidth traditional interface retail leased lines market

5.20 Ofcom is examining the level of regulation in the low bandwidth traditional interface market which incorporates both the minimum set of retail leased lines identified by the Commission (which includes analogue leased lines), traditional interface retail leased lines of bandwidths between 64kbit/s and 2Mbit/s, and traditional interface retail leased lines of 8Mbit/s. Ofcom believes that different considerations apply to these sets of leased lines, principally because new 8Mbit/s leased lines have not been available to new customers for some time and they are therefore of decreasing importance. In addition, they are regulated by different Articles of the new Directives. The differences in approach are discussed below.

5.21 The existing obligations applicable to low bandwidth traditional interface retail leased lines are as follows:

- obligation to supply;
- price publication;
- price notification;
- non discrimination; and
- cost orientation, including a cost accounting system and a price control on analogue leased lines.

5.22 In its assessment of retail low bandwidth traditional interface leased lines set out in Chapter 3 and Annex B, Ofcom has concluded that the market is not effectively competitive and designated that BT has SMP in this market. Section 92 of the Act provides that where Ofcom has made a determination that a person is dominant in the market reviewed, it shall set such SMP conditions as it considers are appropriate and as are authorised in the Act. This implements Article 18 of the Universal Service Directive.

5.23 With regard to 8Mbit/s traditional interface retail leased lines and traditional interface leased lines at bandwidths between 64kbit/s and 2Mbit/s, Ofcom considers that the test set out in section 92 is satisfied. In particular, Ofcom considers that it is proportionate to regulate these leased lines at the retail level. There are currently no 8Mbit/s wholesale PPCs and it is unlikely that there will be demand for such a product, since 8Mbit/s retail leased lines are a legacy product, for the technical reasons outlined below.

The minimum set of retail leased lines (64kbit/s and 2Mbit/s)

5.24 Article 16 of the Framework Directive and Article 17 of the Universal Service Directive together provide that *"where an NRA determines that the relevant market is not effectively competitive, it shall identify undertakings with SMP on that market…and…shall on such undertakings impose appropriate specific regulatory obligations…".*

5.25 Annex VII to the Universal Service Directive ('Annex VII') states that if the market for the minimum set of retail leased lines is not found to be effectively competitive then NRAs must ensure that

1. these leased lines are provided; and that they are provided on the principles of
2. non discrimination;
3. transparency; and
4. where appropriate, cost orientation and a cost accounting system.

5.26 As BT has been found to have SMP in this market, Ofcom does not have any discretion regarding the imposition of the first three obligations. Ofcom has not therefore considered a potential option of 'no *ex ante* regulation' that was considered for the wholesale markets. Ofcom does, however, have discretion as regards the fourth obligation.

5.27 For digital retail leased lines, Ofcom believes that prices will be constrained over time by the increased competition which should come about as a result of PPC regulation, in particular the price control on symmetric broadband origination PPC services. Consequently, Ofcom does not believe it is proportionate to apply a cost orientation obligation for digital retail leased lines.

5.28 For analogue traditional interface retail leased lines, however, there is no such underlying wholesale regulation and consequently Ofcom has considered whether cost orientation or other relevant obligations should be imposed.

64kbit/s-2Mbit/s and 8Mbit/s traditional interface retail leased lines

5.29 Article 17 of the Universal Service Directive, which deals with the regulation of retail markets other than the minimum set of retail leased lines, states that where an NRA determines that the relevant retail market is not effectively competitive and has identified undertakings with SMP on that market, it shall “impose appropriate regulatory obligations” on those undertakings.

5.30 In its assessment of the retail low bandwidth traditional interface leased lines market (set out in Chapters 2 and 3 and Annexes A and B), Ofcom has concluded that this market includes circuits between 64kbit/s and 2Mbit/s and 8Mbit/s leased lines and that it is not effectively competitive, and concluded that BT should be designated with SMP. Ofcom has assessed the appropriate level of future regulation for 64kbit/s-2Mbit/s and 8Mbit/s retail leased lines not only in the light of this finding but also against the particular circumstances relating to leased lines of this bandwidth.

5.31 Leased lines at bandwidths between the minimum set identified by the Commission are based primarily on the 64kbit/s circuits and increase in increments of n*64kbit/s. As such, Ofcom considers it appropriate to regulate these circuits at the retail level as well.

5.32 New 8Mbit/s leased lines have not been available since September 2001. BT only allows existing MegaStream8 customers to continue to rent current leased lines at the prevailing rental charge. The reasons for this are largely due to the technical considerations of the infrastructure over which these leased lines are supplied.

5.33 BT’s 8Mbit/s retail leased lines have been provided over old PDH technology, and are not supported by the newer SDH technology used to provide other traditional interface leased lines above 2Mbit/s. In addition, there have been problems in finding appropriate tributary cards to support 8Mbit/s in the PDH network; and the Network Terminating Equipment has been updated to support multiple 2Mbit/s delivery rather than 8Mbit/s. Consequently, the 8Mbit/s lines represent a legacy service that is only viable where already installed.

Remedies considered

5.34 In the light of the above considerations, Oftel examined previously the following options for future regulation in the market for low bandwidth traditional interface leased lines:

1. obligation to supply the minimum set of retail leased lines (and circuits of bandwidths between the minimum set), and to continue to supply existing 8Mbit/s retail leased lines being provided on the date the conditions come into force;

2. requirement not to unduly discriminate;
3. no cost/price obligations;
4. cost orientation and a cost accounting system for analogue circuits and 8Mbit/s retail leased lines;
5. a co-regulatory option by which BT would voluntarily commit to a contractually binding price guarantee for its customers in relation to analogue circuits and/or 8Mbit/s retail leased lines; and
6. for all leased lines in this market, requirement to publish a reference offer (obligation to publish current prices, terms and conditions; and same day price notification) – note that the requirement to publish information concerning delivery and repair times is now being set out in a separate condition, for reasons that are explained in the relevant sections.

5.35 Ofcom undertook a regulatory option appraisal of these options, concluding that option 3 (see paragraphs 5.45 to 5.50 of the April 2003 consultation document) was an inappropriate response to the degree of SMP existing in this market. Responses to that consultation confirmed Ofcom's opinion that the appropriate regulation for this market is a combination of options 4 and 5. This pragmatic solution is described in detail below.

5.36 In assessing the level of regulation to be applied, Ofcom has taken into account the Commission's SMP Guidelines which state at paragraph 15 that regulation should aim to promote an open and competitive market, and at paragraph 16 that *ex ante* regulations should be imposed to ensure that an SMP communications provider cannot use its market power to restrict or distort competition on the relevant market or leverage market power on to adjacent markets.

5.37 Ofcom has also borne in mind its overall view that it is preferable, where possible and appropriate, to deal with any problems found in a retail market by means of the imposition of regulation at the wholesale level. As discussed in Chapter 3, Ofcom recognises that increasing competitive pressures that continued wholesale regulation should bring mean that it is appropriate to impose a relatively light set of remedies at the retail level. The regulation imposed for this retail market is proportionate in line with this intention.

5.38 Ofcom has also acted in accordance with the duties set out in section 4 of the Act. All of the conditions imposed by Ofcom will promote competition in the provision of retail leased lines and, as part of the implementation of the EC Directives referred to above, will assist with the development of the European internal market. In addition, each individual condition fulfils one or more of the other duties set out in section 4, as set out in the discussion of the conditions below.

5.39 Ofcom considers that the conditions satisfy the tests set out in section 47 of the Act. They are objectively justifiable, in that they relate to the need to ensure that competition develops to the benefit of consumers. They do not unduly discriminate against BT because BT has been found to be the only communications provider holding a position of SMP in this market. They are proportionate, since BT has SMP in this market and these products might not be made available on fair and reasonable terms in the absence of the conditions. The conditions are set out in a transparent form in Annex D, so that Ofcom considers that they meet the requirement of transparency set out in the Act.

Volume discounts

5.40 Ofcom is, as discussed in Annex B, aware that BT offers volume discounts on its retail leased lines. In view of the ubiquity of its network, customers in many areas have no alternative to BT. If these customers also need leased lines in other areas where other communications providers also provide leased lines, they are likely to prefer buying these leased lines from BT in order to maximise their volume discounts. It can thus be inferred that offering discounts may enable BT to leverage SMP from its position of sole provider in many areas across the whole of this market.

5.41 As noted in the recent consultation on BT's pricing of services for business customers published in October 2003 (see www.ofcom.org.uk/static/archive/oftel/publications/licensing/2003/price1003.pdf), "where potential competitors are unable, commercially or technically, to replicate all of the services which BT offers to bundle for the purpose of calculating discounts, customers would probably be reluctant to consider splitting their purchase between competing providers if the cost of purchasing services from several suppliers is greater than the cost of purchasing the full bundle offered by BT. If BT is the only viable supplier of one or more elements of the bundle, the level at which BT sets its stand-alone prices for these elements, relative to the implicit prices when supplied within the bundle, may heavily weight the customer's calculation in favour of a bundled purchase, thus foreclosing the market to competitors." In that document, Ofcom considers a number of possible tests that could be used to assess whether a particular discount structure is anti-competitive.

Conclusion on volume discounts

5.42 Ofcom, separately from this market review, is currently considering the appropriate regulatory treatment of relevant volume discounts in two other exercises. In addition to the consultation document mentioned in paragraph 5.41 above, Ofcom is investigating a specific complaint that BT's volume discounts in relation to circuits used for RBS backhaul, are anti-competitive. Consequently, it would be premature to reach a conclusion in this market review as to whether specific *ex-ante* rules are required. These can be added at a later stage if found to be appropriate. Ofcom will, of course, give consideration to any other fully substantiated and evidence-based complaints made about BT's retail volume discounts.

Low bandwidth traditional interface retail leased lines regulation 1:
Requirement to provide the minimum set of retail leased lines, and to continue to provide 8Mbit/s leased lines already being supplied

5.43 The Universal Service Directive states that NRAs must ensure that organisations with SMP provide the minimum set of retail leased lines. The minimum set has been defined in the Commission Decision 2003/548/EC of 24 July 2003, as meaning leased lines of bandwidths of 64kbit/s and 2Mbit/s. As BT has been found to have SMP, Ofcom must impose a general obligation to supply the minimum set of retail leased lines as required by Article 18(1) of the Universal Service Directive.

5.44 As is discussed in Chapter 2, Ofcom also considers that BT has SMP in the provision of leased lines of bandwidths between 64kbit/s and 2Mbit/s and has therefore imposed a similar general obligation to supply these retail leased lines.

5.45 For 8Mbit/s traditional interface retail leased lines, Ofcom considers that it would be disproportionate to impose a condition requiring BT to supply new leased lines, for the technical reasons outlined above. Furthermore, although BT has been identified as having SMP in respect of these services, the shares of volumes previously supplied suggest that competitive conditions may be different from those applying to the remainder of the low bandwidth retail leased lines market.

5.46 BT's share of 8Mbit/s traditional interface retail leased lines is in the region of 45%-50%, whereas for the remainder of low bandwidth traditional interface retail leased lines BT's share is nearer to 70%. BT's position in the lower bandwidths seems to be a more important source of its SMP in this market than its position in 8Mbit/s leased lines, because of the comparative volumes involved. Thus there appears to be a greater need for regulation for the lower bandwidths and the arguments for regulation of 8Mbit/s leased lines are less conclusive.

5.47 Ofcom does consider that it is necessary to implement a condition requiring BT to maintain its existing 8Mbit/s traditional interface retail leased lines, i.e. those that are in existence on the date the conditions come into force. This will ensure that the customers using these lines can continue to use them, and will prevent BT from ceasing to supply these products to existing customers wishing to retain the service. In the absence of these products, the customers would be likely to be faced with a choice of alternatives (such as four 2Mbit/s retail leased lines) that is potentially more expensive and less appropriate to their particular needs.

5.48 Implementation of this obligation to provide the minimum set of retail leased lines, and to continue to provide 8Mbit/s leased lines already being supplied, fits with Recital 18 of the Framework Directive which requires NRAs where possible to take the utmost account of the desirability of making regulation technologically neutral. BT will be required to provide these products irrespective of the methods and technology by which they are provided.

Conclusion on requirement to provide

5.49 On the basis of the analysis above, Ofcom is imposing condition I1 in Annex D, which requires BT to provide the minimum set of retail leased lines, leased lines of bandwidths between 64kbit/s and 2Mbit/s and to continue to provide 8Mbit/s leased lines already being supplied. This condition remains in the same terms as the condition in the draft notification.

Communications Act tests

5.50 Ofcom considers that the condition meets the tests set out in the Act.

5.51 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements detailed in Sections 3 and 4 of the Act. In particular, the condition promotes the interests of consumers in accordance with sections 3(4)(b), 4(5) and 4(9), particularly businesses, since BT has SMP in this market, and in the absence of supply by BT business consumers may find themselves unable to obtain retail leased lines on fair and reasonable terms.

Low bandwidth traditional interface retail leased lines regulation 2:
Requirement not to unduly discriminate

5.52 Annex VII of the Universal Service Directive states that NRAs must ensure that organisations with SMP "apply similar conditions in similar circumstances to organisations providing similar services, and are to provide leased lines to others under the same conditions and of the same quality as they provide for their own services, or those of their subsidiaries or partners, where applicable." As BT has been found to have SMP, Ofcom must impose a no undue discrimination obligation in relation to the minimum set of leased lines. This regulation will promote competition in traditional interface retail leased lines by preventing BT from discriminating in ways which are anti-competitive.

5.53 Ofcom considers that it is necessary also to impose this obligation in respect of 64kbit/s-2Mbit/s and 8Mbit/s traditional interface leased lines. This will ensure that BT does not amend the terms and conditions of supply of existing leased lines in a discriminatory way, and it will also protect customers for new leased lines against any potential discrimination in their conditions of supply, should BT choose to recommence supply of new leased lines.

5.54 Ofcom considers that application of a non discrimination condition should not prevent BT from setting geographically de-averaged tariffs, i.e. charging different prices for traditional interface retail leased lines at different locations (as it does currently for the Central London Zone (CLZ)), provided that in doing so it did not discriminate between customers or have a material adverse effect on competition.

Responses to the draft notification – non-discrimination

5.55 One communications provider suggested that temporary pricing offers by BT should be monitored by Ofcom to ensure that the obligation not to unduly discriminate is not breached.

5.56 As a result of the price publication obligation discussed below, BT will continue to be obliged to notify new price changes, including special offers, to Ofcom. Where Ofcom has concerns about any temporary pricing offers it will consider whether further investigation is appropriate. It remains, however, open for communications providers to submit complaints to Ofcom where they consider that BT is acting in breach of the obligations imposed on it.

Conclusion on no undue discrimination

5.57 Ofcom has concluded that it is appropriate to impose condition I2 in Annex D, which prohibits undue discrimination. This condition remains in the same terms as the condition consulted on in the draft notification.

Communications Act tests

5.58 Ofcom considers that the condition meets the tests set out in the Act.

5.59 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements detailed in Sections 3 and 4 of the Act. In particular, the condition protects business consumers by ensuring supply on equal terms to all parties in accordance with sections 3(4)(b) and 4(3) of the Act. As BT has SMP in this market, it is in a position where in the absence of this condition it would be able to discriminate unduly on the terms of retail leased lines between different parties.

Low bandwidth traditional interface retail leased lines regulation 3:
Voluntary customer price guarantee and cost orientation obligation

5.60 Annex VII states that *"National regulatory authorities are, where appropriate, to ensure that tariffs for leased lines referred to in Article 18 follow the basic principles of cost orientation. To this end, national regulatory authorities are to ensure that undertakings identified as having SMP pursuant to Article 18(1) formulate and put in practice a suitable cost accounting system."* (emphasis added)

5.61 Oftel proposed in the December 2003 draft notification that a combination of the voluntary price guarantee put forward by BT in its response to the April 2003 consultation supported by a cost orientation (and cost accounting) obligation that would apply in the event of a breach of the undertaking, represented a proportionate and balanced solution to potential pricing concerns for the declining analogue and 8Mbit/s traditional interface retail leased lines markets.

5.62 Ofcom considered that the imposition of this combined solution would minimise the risk of adverse effects arising from price distortion that would occur if BT, which has SMP in this market, were to fix and maintain some or all of its prices at an excessively high level. Thus the voluntary guarantee and back up cost orientation condition would help to promote efficiency and sustainable competition.

Responses to the draft notification – cost orientation

5.63 No comments other than those which have already been taken into account were received on this issue.

Conclusions – cost orientation

5.64 For the reasons set out above, Ofcom considers that the voluntary price guarantee provided by BT, backed up with the cost orientation obligation, will be appropriate to promote efficiency and sustainable competition.

Communications Act tests

5.65 Ofcom considers that the condition (Condition I3 in Annex D) meets the tests set out in the Act.

5.66 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements detailed in Sections 3 and 4 of the Act. In particular, the condition protects business consumers by ensuring that the product they are purchasing is cost oriented, in accordance with sections 3(4)(b) and 4(3) of the Act.

Low bandwidth traditional interface retail leased lines regulation 4:
Requirement to publish a reference offer

5.67 Annex VII of the Universal Service Directive states that NRAs must ensure that information on "technical characteristics", "tariffs" and "supply conditions" is easily accessible for the set of leased lines defined. As BT has been found to have SMP, Ofcom must impose a transparency obligation. BT will be obliged to publish its prices, terms and conditions for all retail low bandwidth traditional interface leased lines (i.e. including 8Mbit/s).

5.68 BT will be obliged to publish information on technical characteristics which includes physical and electrical characteristics as well as the detailed technical and performance specifications which apply at the network termination point.

5.69 BT will be obliged to publish tariffs which include initial connection charges, periodic rental charges and other charges. Thus, for example, the individual connection and rental charges for a leased line must be unbundled. Where tariffs are differentiated, this must be indicated. Where BT considers it unreasonable to provide a leased line under its published tariff and supply conditions, it must seek the agreement of Ofcom to vary those conditions in that case.

5.70 In addition, as part of its transparency obligation, Ofcom considers that BT should be required to provide notification specifically to Ofcom, and in addition to all other parties by means of its website, of new products, their prices and terms and conditions, and changes to prices, terms and conditions of existing retail low bandwidth traditional interface leased lines products.

5.71 BT is currently required to give 28 days' notice of changes to the price, terms and conditions of retail traditional interface leased lines under Condition 55.4 of its licence (in line with the Leased Lines Directive).

5.72 The Universal Service Directive requires NRAs to ensure that information such as tariffs, charges, terms and conditions is published in an easily accessible form. Ofcom considers that a requirement to notify prices terms and conditions for new products, and changes to prices terms and conditions for existing products, will make that information more easily accessible to Ofcom and allow it to take prompt action in the event of a complaint or own initiative investigation into the prices terms or conditions. It will also enable Ofcom to monitor BT's performance against its non discrimination obligation.

5.73 It could be argued that it would be unnecessarily onerous to require BT to provide advance notification of new products or changes to existing products. Ofcom agrees that it is unlikely to be of benefit to require BT to provide a short period of notice of such information. However, Ofcom considers that there are distinct advantages as set out above in requiring BT to provide same-day notification.

5.74 Ofcom has therefore concluded that it would be most appropriate to require BT to provide same-day notification of the prices, terms and conditions for new products and changes to the prices, terms and conditions of existing products, for its retail low bandwidth traditional interface leased lines. This is consistent with Ofcom's conclusions in other retail markets where BT has been identified as having SMP, such as those falling within the retail PSTN price control market review.

5.75 Ofcom considers that it is necessary also to impose this obligation in respect of 8Mbit/s traditional interface leased lines. This will ensure that BT's terms and conditions of supply for existing leased lines continue to be transparent, and it will also protect customers for new leased lines by ensuring that they are supplied on a transparent basis, should BT choose to recommence supply of new leased lines.

Responses to the draft notification – reference offer and same day notification

5.76 As discussed at paragraphs 5.7 to 5.19 above, a number of respondents argued that the price publication obligations for retail low bandwidth traditional interface leased lines should be extended to other retail leased lines markets. For the reasons set out above, Ofcom does not consider it appropriate to extend the price publication obligation to other retail leased lines markets.

Conclusions – reference offer and same day notification

5.77 Ofcom has concluded that it is appropriate to require BT to publish and notify amendments and new charges, terms and conditions on the day that those amendments or new charges, terms and conditions come into force. This option provides a degree of certainty that all tariffs, terms and conditions will be published and offers the benefits of notification for monitoring purposes without facilitating price following.

5.78 As Ofcom believes BT has SMP in this market, a price publication and notification obligation is needed to provide Ofcom and BT's competitors with visibility of possible anti competitive behaviour.

5.79 Ofcom has included a power to disapply the condition by consent where, for example, BT has notified Ofcom that for a limited period it is not making the services publicly available while it assesses the technical or commercial viability of the service.

Communications Act tests

5.80 Ofcom considers that the condition (Condition I4 in Annex D) meets the tests set out in the Act.

5.81 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4 of the Act. In particular, the condition gives business consumers information, so that they can establish that the terms and conditions on which they are purchasing the services do not discriminate against them, in accordance with sections 3(4)(b) and 4(3) of the Act. This in turn assists the policing of compliance with the non discrimination obligation, allowing Ofcom to tell more easily if discrimination is taking place.

5.82 The condition also promotes competition in retail traditional interface leased lines. Clarity of the product makes it easier for switching to take place. In addition, the condition ensures that competitors know the specifications of BT's products and the terms and conditions to which it must adhere, thereby making it easier for them to offer competing services.

5.83 It is possible that transparency requirements can lead to price following, thereby discouraging vigorous price competition. However, Ofcom believes that BT's market power in this market is so extensive that the benefits of imposing this obligation are likely to outweigh any possible costs of this nature.

Low bandwidth traditional interface retail leased lines regulation 5:
Requirement to publish information concerning delivery and repair times

5.84 As discussed in the previous section, BT will be obliged by this condition to publish supply conditions, including at least information concerning the ordering procedure, the typical delivery period, the contractual period, the typical repair time, and any refund procedure. Justification against the Communications Act tests is set out in the previous section.

Low bandwidth traditional interface retail leased lines: Conclusion on regulation

5.85 Ofcom has concluded that BT has SMP in this market, and that as a consequence the following conditions should be imposed:

1. obligation to supply the minimum set of retail leased lines and retail leased lines at bandwidths between 64kbit/s and 2Mbit/s, and to continue to supply existing 8Mbit/s traditional interface retail leased lines being provided on the date the conditions come into force;
2. requirement not to unduly discriminate;
3. in respect of traditional interface analogue and 8Mbit/s retail leased lines, cost orientation and a cost accounting system to apply only if BT breaches its voluntary undertaking not to raise the combined prices of a basket of these services by more than RPI before June 2006 or the implementation of the next market review, whichever is the earlier;
4. for all leased lines in this market, requirement to publish a reference offer (obligation to publish current prices, terms and conditions; and same day price notification); and
5. requirement to publish information concerning delivery and repair times.

Conditions of entitlement are set out in Annex D.

5.86 Ofcom is, as noted above, not applying any regulation to the high bandwidth or very high bandwidth traditional interface retail markets. Thus there is a withdrawal of the regulation currently applying to leased lines in these markets. In addition, Ofcom is imposing less regulation for the retail low bandwidth traditional interface market than currently exists – including withdrawal of the price control on traditional interface analogue retail leased lines. Ofcom's conclusions in the retail markets reflect its intention to deal with problems at the retail level by means of regulation at the wholesale level, where possible and appropriate.

Chapter 6

Regulatory remedies – SMP services conditions and Directions for BT's wholesale low and high bandwidth traditional interface symmetric broadband origination markets

Introduction

6.1 This chapter sets out the remedies for the wholesale low and high bandwidth traditional interface symmetric broadband origination ("TISBO") markets in the UK excluding Hull. The more general comments on the structure of the analysis, the aims of regulation and CSH and ISH interconnection services at the beginning of this chapter apply equally to these markets and to the wholesale trunk segments market. This chapter then moves on to set out the effect of, and Ofcom's reasons for setting SMP services conditions in these markets. It also explains how certain tests in the Act are satisfied.

6.2 The conditions in respect of BT are attached to the Notification in Annex D of this document, while the Directions are set out in Annex E.

Structure of the analysis

6.3 Ofcom has identified five distinct wholesale product markets for the UK excluding Kingston upon Hull. These are:

- wholesale low bandwidth traditional interface symmetric broadband origination (up to and including 8Mbit/s);
- wholesale high bandwidth traditional interface symmetric broadband origination (above 8Mbit/s up to and including 155Mbit/s);
- wholesale very high bandwidth traditional interface symmetric broadband origination (above 155Mbit/s);
- wholesale alternative interface symmetric broadband origination ("AISBO"); and
- wholesale trunk segments.

6.4 As discussed in Chapter 3, Ofcom has not identified SMP in the very high bandwidth TISBO market. Consequently, there is no need to consider any regulation to be applied in this market, and the PPC and LLU backhaul Directions currently relating to circuits of 622Mbit/s and above will no longer apply to those circuits.

6.5 Ofcom considers that this fits well with Recital 13 of the Access Directive, which notes that the aim of NRAs should be to reduce *ex ante* sector specific rules progressively as competition in the market develops and delivers the desired results.

6.6 Ofcom's assessment of regulatory options is therefore restricted to the trunk segments, the AISBO market, and the low and high bandwidth TISBO markets. The majority of the regulation for the latter two markets is identical, and Ofcom is therefore considering these markets together. Where any differences in regulation are necessitated by technical differences such as a product only being available over either low or high bandwidth, these differences are highlighted.

6.7 The Access Directive deals with wholesale relationships between providers of networks and services. It sets out the responsibilities of NRAs and the remedies that they can impose relating to access and interconnection. Certain specific remedies can only be imposed after a finding of SMP in a relevant market.

6.8 Section 87(1) of the Act provides that where Ofcom has made a determination that a person is dominant in the market reviewed, they shall set such SMP conditions as they consider are appropriate and as are authorised in the Act. This implements Article 8 of the Access Directive. At paragraphs 21 and 114 of the Commission's SMP Guidelines state that this means that Ofcom must impose one or more SMP conditions on a dominant provider. Furthermore, the European Commission states that the imposition of no SMP conditions on a dominant provider would be inconsistent with the new regime. Thus, Ofcom is under a mandatory obligation to impose at least one appropriate SMP condition on a dominant provider.

6.9 The SMP conditions which may be set can be summarised as follows:

(a) the provision of network access (Article 12 of the Access Directive, sections 87(3) and 87(5) of the Act);

(b) no undue discrimination (Article 10 of the Access Directive, section 87(6)(a) of the Act);

(c) transparency (Article 9 of the Access Directive sections 87(6)(b) and (c) of the Act);

(d) accounting separation (Article 11 of the Access Directive, section 87(7) of the Act);

(e) pricing, including, in particular, price controls (Article 13 of the Access Directive, section 87(9) of the Act);

(f) regulatory controls on retail markets (Article 17 of the Universal Service Directive, section 91 of the Act);

(g) regulatory controls with respect to leased lines (Article 18 of the Universal Service Directive, section 92 of the Act); and

(h) conditions with respect to carrier selection and pre-selection (Article 19 of the Universal Service Directive, section 90 of the Act).

6.10 The conditions listed at (a) to (e) and (g) above are relevant to this review of wholesale markets. Ofcom is required to assess which of these obligations are appropriate.

6.11 Ofcom notes Recital 27 of the Framework Directive which provides that *ex ante* regulation should only be imposed where there is not effective competition and where competition law remedies are not sufficient to address the problem. In this light, Ofcom considered this as part of its original assessment as to the appropriateness of SMP conditions, i.e. a situation whereby no regulation was imposed and whether it would be sufficient to rely on competition law alone.

Aims of regulation

6.12 In Chapter 3 and Annex B of this document, Ofcom explains how it has reached the conclusion that BT currently continues to hold a position of SMP in some of the UK (excluding Kingston upon Hull) product markets relating to leased lines covered by this review.

6.13 Article 16 of the Framework Directive provides that *"where an NRA determines that the relevant market is not effectively competitive, it shall identify undertakings with SMP on that market…and…shall on such undertakings impose appropriate specific regulatory obligations…".*

6.14 Regulation at the wholesale level is designed to address the problems which result from the existence of SMP in the relevant wholesale market. In particular it is designed to ensure that the SMP at the wholesale level does not restrict or distort competition in the relevant downstream markets or operate against the interests of consumers, for example through excessively high prices. Accordingly, Ofcom believes the wholesale regulation set out in this chapter reflects its duties in section 4 of the Act. All of the conditions imposed by Ofcom will promote competition in the provision of retail leased lines and, as part of the implementation of the EC Directives referred to above, will assist with the development of the European internal market. In addition, each individual condition fulfils one or more of the other duties set out in section 4, as well as the tests set out in section 47 of the Act, as described in the discussion of the conditions below.

6.15 The application of regulation at the wholesale level also fits with the requirements of the Framework Directive, that NRAs take measures which are proportionate to the objective of encouraging efficient investment in infrastructure and promoting innovation. The introduction of regulation in wholesale markets will encourage communications providers to purchase wholesale products and combine them with their own networks where possible to create retail products in competition with BT's retail leased lines products and other services. This is preferable to retail regulation alone, which would by contrast tend to favour the purchase of BT's retail products and thereby lessen other communications providers' investment in infrastructure and, through less competition, innovation.

6.16 It will also help to ensure that another objective of the Framework Directive is met, namely that NRAs take measures which are proportionate to the objective of *"ensuring that users…derive maximum benefit in terms of choice, price and quality"*. Regulation at the wholesale level will, as noted above, help to increase the number of retail products available, and by increasing competition will help to ensure that price and quality are optimised.

6.17 In assessing the level of regulation to be applied in this market, Ofcom has also taken into account the Commission's SMP Guidelines which state at paragraph 15 that regulation should aim to promote an open and competitive market, and at paragraph 16 that *ex ante* regulations should be imposed to ensure that an SMP communications provider cannot use its market power to restrict or distort competition on the relevant market or leverage market power on to adjacent markets.

6.18 Ofcom has also taken account of Oftel's guidelines on the imposition of access obligations under the new EU Directives (*Imposing access obligations under the new EU Directives*, www.ofcom.org.uk/static/archive/oftel/publications/ind_guidelines/acce0902.htm, referred to in this document as 'Oftel's access guidelines'). These describe the circumstances in which Oftel considered the imposition of wholesale access obligations to be appropriate, gave guidance on the nature of the wholesale products Oftel expected to be supplied as a result of an obligation to provide access, and described the conditions under which products should be made available. It should be noted that Ofcom intends to consult on non-discrimination guidelines later in 2004.

CSH and ISH interconnection services

6.19 The Commission has not identified a market for CSH and ISH POC services in its Recommendation. However, paragraph 3 of section 3.3 of the explanatory memorandum to the Recommendation states that:

"In dealing with lack of effective competition in an identified market, it may be necessary to impose several obligations to achieve an overall solution. For instance, it may often be the case that adjacent or related remedies are applied to technical areas as part of the overall obligation that addresses SMP on the analysed market. If specific remedies are thought to be necessary in a specific narrow technical area, it is not necessary or appropriate to identify each technical area as a relevant market in order to place obligations in that area."

6.20 As noted above, Ofcom has assessed the relevant markets and come to the initial conclusion that BT has SMP in the following wholesale markets in the UK excluding Kingston upon Hull Area:

- wholesale low bandwidth TISBO (up to and including 8Mbit/s);
- wholesale high bandwidth TISBO (above 8Mbit/s up to and including 155Mbit/s);
- wholesale AISBO; and
- wholesale trunk segments.

6.21 Accordingly, Ofcom considers it necessary and appropriate to impose certain obligations in these markets in order to remedy the problems identified. These are discussed below and in Chapters 7 and 8. However, Ofcom is of the view that these obligations and their likely consequences are not sufficient to address the problems in the markets identified. Therefore, Ofcom considers that in order to ensure that regulation in these markets is effective, it is necessary to consider whether additional obligations are required in relation to CSH and ISH services. Ofcom therefore considers that CSH and ISH services should properly be considered as a technical area as set out by the Commission.

Services involved

6.22 A POC is the point at which another communications provider's network interconnects with BT's network. The relevant services provided at a POC can broadly be divided into equipment and links. Equipment is provided at a POC in the form of multiplexers which are used for the aggregation and disaggregation of circuits ready for onward transmission. Links are circuits which link the premises of two interconnecting communications providers in order to allow transmission between the networks of these two communications providers.

6.23 BT provides the following broad types of POC equipment and links:

- Customer-sited handover (CSH): CSH is when BT provides a point of interconnection at the site of the interconnecting communications provider. In order to do so, BT has to extend its network out to the point of interconnection and provide a CSH link along with CSH POC equipment; and
- In-span handover (ISH): ISH is when two communications providers build out their networks to a handover point located between their premises. The handover point is close to the BT exchange and therefore most of the build is the responsibility of the interconnecting communications provider. BT provides the part of the ISH link running from the handover point to its POC, along with ISH equipment at the POC.

Rationale

6.24 Those communications providers that wish to interconnect with BT and purchase wholesale TISBO services or PPCs must purchase the relevant interconnection links and equipment from them. In order to remedy BT's SMP in the TISBO and trunk segments markets, Ofcom has imposed remedies later in this chapter and in Chapter 8. However, regulation of these markets is insufficient to achieve an overall solution to BT's market power in these markets.

6.25 To achieve an overall solution, Ofcom considers that it is also necessary to regulate BT's provision of interconnection links and equipment, in the absence of which, BT would have an incentive to charge prices well above the cost of provision. As communications providers must purchase these links and equipment to interconnect and purchase interconnection services, this would have the same effect as charging excessive prices for the regulated interconnection services in each SMP market, and would undermine the remedies that are being imposed by Ofcom.

6.26 Ofcom considers that it would be insufficient to regulate only one type of interconnection product as they each perform very different functions.

CSH

6.27 CSH does not involve building out to BT exchanges and the significant costs of doing so. Therefore, it is the normal mode of interconnection for a new communications provider or where an interconnection route is expected to carry a limited volume of traffic. Regulation of CSH is essential to ensure that barriers to entry for new interconnecting communications providers are low. If communications providers can only interconnect using ISH links and equipment and the significant costs of building their links up to the BT exchange, this could deter market entry and therefore affect the development of competition in these markets.

ISH

6.28 ISH is the preferred method of interconnection between two communications providers who have reasonably extensive network infrastructure. An interconnecting communications provider will aim to interconnect as close as possible to BT, in order to minimise the charges payable to BT. Regulation of ISH (including the ISH extension and STM-1 point of handover ISH and CSH products discussed below) is necessary to ensure that communications providers have the option of building out their own networks and connecting closer to BT's exchange. This therefore assists a communications provider's ability to extend their own infrastructure and reduces their reliance on BT's.

Remedies

6.29 The remedies imposed in relation to BT's provision of CSH and ISH services are set out in the regulatory option appraisal sections below and in Chapter 8. Note that no such remedies are imposed in respect of the AISBO market at this stage, as the relevant CSH and ISH services have not to date been determined as being applicable to that market. However, while it is not imposing any particular handover solutions at this stage, Ofcom does of course recognise that efficient solutions will need to be found for any product which is supplied.

Regulatory option appraisal for traditional interface symmetric broadband origination

Existing obligations for traditional interface symmetric broadband origination

6.30 The existing obligations applying in relation to the wholesale TISBO markets are as follows:

- obligation to offer leased line interconnection;
- non discrimination;
- cost orientation;
- cost accounting;
- price control;
- accounting separation;
- publication of prices, terms and conditions;
- advance notification of prices, terms and conditions for new products;
- advance notification of changes to prices of existing products;
- requirement to provide quality of service information; and
- requirement to publish technical information.

6.31 In addition, these markets are subject to detailed regulation following these Directions:

- PPCs Phase I;
- PPCs Phase II; and
- LLU backhaul.

Remedies considered

6.32 In its assessment of the wholesale low and high bandwidth TISBO markets set out in Chapter 3 and Annex B, Ofcom has concluded that the markets are not effectively competitive and designated BT as having SMP.

6.33 On the basis of its preliminary conclusions, Oftel proposed in the draft notification the following options for future regulation in the markets for TISBO:

1. a general obligation to provide access on reasonable request;
2. requirement not to unduly discriminate;
3. basis of charges obligations (cost orientation and a cost accounting system);
4. price control;
5. accounting separation obligations;
6. requirement to publish a reference offer;
7. an obligation to give notice of changes to prices, terms and conditions;
8. requirement to provide quality of service information;
9. requirement to publish technical information with 90 days' notice; and
10. obligations relating to requests for new network access.

6.34 In addition to the above conditions, Oftel also proposed making the following Directions under appropriate conditions:

11. Direction under the general access condition to provide PPCs at a range of bandwidths subject to specific terms and conditions;
12. Direction under the cost orientation condition covering pricing matters relating to PPCs and LLU backhaul;

13. Direction under the quality of service condition to require specific information in respect of PPCs;
14. Direction under the general access condition to provide RBS backhaul link products; and
15. Direction under the general access condition to provide LLU backhaul products.

Wholesale traditional interface symmetric broadband origination regulation 1: Requirement to provide network access on reasonable request

6.35 Section 87(3) of the Act authorises the setting of SMP services conditions requiring the dominant provider to provide network access as Ofcom may from time to time direct. These conditions may, pursuant to section 87(5) include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions. When considering the imposition of such conditions in a particular case, Ofcom must have regard to the 6 factors set out in section 87(4) of the Act, including, *inter alia*, the technical and economic viability of installing other competing facilities and the feasibility of the proposed network access.

6.36 Under a general access obligation, BT would be obliged to supply, on fair and reasonable terms, any products falling within the market for the provision of TISBO, upon reasonable request. Specific existing examples of these include PPCs, LLU backhaul products and RBS backhaul links. As explained in Chapter 3 and Annex B, the market also includes services provided using SDSL technology, be they contended or uncontended, and therefore in the future if a reasonable request were made, such services could also be required to be supplied.

6.37 BT has been found to have SMP in this market. This regulation would allow communications providers to make reasonable requests to negotiate innovative low and high bandwidth products which will enable them to compete in the retail markets, encouraging competition at the retail level. If the obligation were not imposed, BT would be able to deny access or impose unreasonable terms having a similar effect, thereby hindering the emergence of a competitive retail market for leased lines and other services which rely on these inputs. The Access Directive states in Article 12 that an NRA may impose access obligations where the denial of access or unreasonable terms and conditions having a similar effect would hinder the emergence of a sustainable competitive market at the retail level, or would not be in the end users' interest.

6.38 While formulation of specific obligations may from time to time be appropriate, either for the avoidance of doubt or in resolving a dispute, Ofcom proposes to rely as far as possible on the general obligation. This removes the need for Ofcom to specify the details of products to be supplied (which it is often not best placed to do), and provides a regime which is responsive to future market and technical developments. While the scope is broad, it is appropriately limited by the ability of BT to refuse any request which is unreasonable. (Ofcom's current views on reasonableness in this context are set out in the Access Guidelines published by Oftel.)

6.39 Reliance on the Competition Act for communications providers' general access requirements will, in Ofcom's view, be insufficient because of the network-based nature of the industry, and would be inconsistent with Ofcom's objective of promoting competition.

6.40 Ofcom therefore considers that it is necessary to introduce a general access obligation to deal with not only the continuation of supply of existing products but also the supply of new TISBO products that may be introduced in the future.

6.41 The words "fair and reasonable terms" would be interpreted by Ofcom as meaning, amongst other things, terms which did not lead to any sort of margin squeeze between wholesale and retail markets, since a margin squeeze is in effect a constructive refusal to supply, i.e. a refusal to supply on commercially viable terms. Thus there will be no need to introduce a specific condition to deal with such an eventuality. The provision of Network Access on fair and reasonable terms and conditions should, where appropriate, include reasonable service level agreement and compensation which ensures such SLAs would be effective.

6.42 The scope of the general access obligation is defined by reference to the scope of the wholesale markets. Ofcom recognises that services within this market can potentially be used to provide a wide range of final services, i.e. the end use of the wholesale services could differ significantly. However, Ofcom does not consider it to be a practical regulatory approach to tie BT's obligation to particular end uses. In Ofcom's experience, such an approach leads to boundary disputes and arbitrage opportunities which have the effect of restricting consumer choice and/or distorting competition. Nor is there generally any public policy argument in favour of allowing a dominant provider to exploit its dominance in relation to one group of customers when it is prohibited from doing so in relation to others.

6.43 Therefore, in assessing whether a request is reasonable, depending on the facts of the case, Ofcom may consider that it might not be reasonable of BT to refuse to supply a certain class of product solely on the grounds that their use of the access product differed from that for which the product was originally developed.

6.44 As explained above, Ofcom has concluded that CSH and ISH interconnection services (including the ISH extension and STM-1 point of handover ISH and CSH products discussed below) can be considered as a technical area related to the markets where Ofcom has found SMP. Ofcom therefore intends to apply this condition also to the technical areas outlined above.

6.45 Recital 6 of the Access Directive states that *"(I)n markets where there continue to be large differences in negotiating power between undertakings, and where some undertakings rely on infrastructure provided by others for delivery of their services, it is appropriate to… secure…adequate access and interconnection and interoperability of services in the interests of end users."* Ofcom considers the markets for TISBO to be of this type, and in accordance with the Access Directive considers it necessary to ensure connectivity by imposing proportionate obligations on undertakings that control access to end users.

6.46 Implementation of this obligation also fits with Recital 18 of the Framework Directive which requires NRAs where possible to take the utmost account of the desirability of making regulation technologically neutral. Communications providers will be able to use BT's wholesale TISBO products to provide services of their choice. Thus this measure is not linked to the activities of the party seeking access of the degree of its investment in network infrastructure, and it consequently accords also with Recital 7 of the Access Directive.

Responses to the draft notification – obligation to provide network access

6.47 No comments were received on this issue.

Conclusions – obligation to provide network access

6.48 For the reasons set out above, Ofcom has concluded that a network access condition should be imposed in these markets in the form set out at Annex D.

Communications Act tests

6.49 Ofcom considers that the conditions (Conditions G1 and GG1 in Annex D) meet the tests set out in the Act.

6.50 In Ofcom's view, these conditions meet the tests set out in Section 47 of the Act. The conditions are objectively justifiable, in that they relate to the need to ensure that competition develops to the benefit of consumers. They do not unduly discriminate, as they are imposed on BT and no other communications provider has SMP in these markets. They are proportionate, since they are targeted at addressing the market power that BT holds in these markets and do not require it to provide access if it is not technically feasible or reasonable. Finally, they are transparent in that they are clear in their intention to ensure that BT provides access to its network in order to facilitate competition.

6.51 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4 of the Act. In particular, because they require BT to provide the necessary access products, the conditions encourage the provision of network access and service interoperability for the purpose of ensuring efficiency and promoting competition in the downstream markets, in accordance with sections 4(7) and 4(8) of the Act. As BT has market power in the provision of wholesale TISBO, it controls a key input into a range of downstream services – principally traditional interface retail leased lines but also virtual private networks, managed services etc. In requiring these conditions, Ofcom is promoting competition and the interests of consumers and maximising choice in the markets for those downstream services, in accordance with sections 3(4)(b) and 4(3) of the Act.

6.52 Ofcom considers that imposition of these conditions satisfies the conditions set out in section 87(4) of the Communications Act. Ofcom recognises that in many circumstances it will not be feasible for other communications providers to build out their networks to achieve a degree of coverage comparable to BT. Since this would restrict the potential development of alternative facilities in the current market, Ofcom considers that these conditions are fair and reasonable. Ofcom is satisfied that these conditions are feasible and technically and economically viable. In respect of existing products supplied by BT such as PPCs, it is clearly feasible and viable for it to continue to provide. In relation to new products, as BT will only be required to provide these on reasonable request, the conditions will not require BT to do anything which is not feasible or viable.

6.53 Ofcom also believes that these conditions are fair and reasonable taking into account the investment made by BT in its network, and bearing in mind that BT will only be required to supply upon a reasonable request that enables it to recover its costs. Ofcom believes that by enabling other communications providers to make effective use of wholesale inputs and to make optimal use of their own networks, these conditions address the need to secure effective competition in the long term and the goal of ensuring that services based on leased line components are provided throughout the UK (excluding Kingston upon Hull).

Wholesale traditional interface symmetric broadband origination regulation 2:
Requirement not to unduly discriminate

6.54 Section 87(6)(a) of the Act authorises the setting of an SMP services condition requiring the dominant provider not to unduly discriminate against particular persons, or against a particular description of persons, in relation to matters connected with the provision of network access.

6.55 The requirement not to unduly discriminate is intended, principally, to prevent dominant providers from discriminating in favour of their own retail activities and to ensure that competing providers purchasing wholesale products from the dominant provider are placed in an equivalent position to the dominant provider’s retail arm.

6.56 Where dominant providers are vertically integrated, like BT, they may have an incentive to provide wholesale services on terms and conditions that favour their own retail activities, in a way that would have a material adverse effect on competition. In particular, they may charge competing providers more than the amount charged (through transfer charging) to their own retail activities for wholesale services, thereby increasing the costs of competing providers and giving themselves an unfair competitive advantage. They might also provide services on different terms and conditions, for example with different delivery timescales, which would disadvantage their retail competitors and in turn consumers.

6.57 In the absence of a non discrimination condition, Ofcom could be called upon to investigate alleged breaches of the Competition Act prohibition on anti-competitive agreements and abuse of a dominant position, and might be required to resolve successive complaints. Imposing an *ex ante* condition in this instance will reduce the potential regulatory costs emanating from multiple or successive complaints related to discrimination.

6.58 It might be argued that the Competition Act provides adequate provision to address allegations or evidence of discriminatory behaviour. However, Ofcom considers that at the wholesale level sectoral regulation provides a faster and more secure means of giving effect to decisions and determinations. In addition, it allows Ofcom to place a greater emphasis on promoting competition (for example by restricting the ability of an SMP communications provider to foreclose segments of the retail market).

6.59 It might also be argued that a requirement not to unduly discriminate prevents BT from fully exploiting its economies of scale. If BT were able to discriminate, it would be able, when needed, to quote a lower price in order to attract sufficient numbers of customers to ensure that its infrastructure is utilised at full capacity. Although this is a valid consideration, Ofcom considers that it is far outweighed by the fact that in view of BT’s position of SMP, it would also be able to use discrimination for other purposes less constructive than maximisation of capacity utilisation (such as predatory pricing), and that this would have a harmful effect on competition.

6.60 Ofcom therefore considers that it is necessary to apply a non discrimination obligation in this market. This accords with Recital 17 of the Access Directive, which states that non discrimination obligations ensure that undertakings with market power do not distort competition, in particular where they are vertically integrated undertakings that supply services to undertakings with whom they compete on downstream markets. This is clearly the case with respect to the wholesale and retail leased lines markets.

6.61 As explained above, Ofcom is minded to conclude that CSH and ISH interconnection services (including the ISH extension and STM-1 point of handover ISH and CSH products discussed below) can be considered as a technical area related to the markets where Ofcom has initially found SMP. Ofcom therefore also intends to apply this condition to the technical areas outlined above.

6.62 A prohibition of discrimination might have disadvantages if it prevented discrimination that was economically efficient or justified. However, the condition provides that there should be no *undue* discrimination. Oftel considered how it might treat undue discrimination in its Access Guidelines (it should be noted that Ofcom intends to consult on non-discrimination guidelines later on in 2004). Oftel's Guidelines note that any obligation with respect to undue discrimination has the objective of preventing behaviour that has a material adverse effect on competition. This does not mean that there should not be any differences in treatment between undertakings, rather that any differences should be objectively justifiable, for example, by differences in underlying costs of supplying different undertakings. The Guidelines also note that in Oftel's view, there is a rebuttable presumption that a vertically integrated SMP communications provider discriminating in favour of its own retail activities or between others of its own activities would have a material adverse effect on competition (paragraph 3.9). This view would also apply to discrimination in relation to the underlying components of services.

Responses to the draft notification – no undue discrimination

6.63 No comments were received on this issue.

Conclusions – no undue discrimination

6.64 For the reasons set out above, Ofcom considers it appropriate to impose conditions G2 and GG2 in Annex D, which prohibit *undue* discrimination. The conditions remain in the same terms as the condition previously consulted on.

Communications Act tests

6.65 Ofcom considers that the condition meets the tests set out in the Act.

6.66 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4 of the Act. In particular, because it requires BT to provide the necessary access products, the condition encourages the provision of network access and service interoperability for the purpose of efficiency and sustainable competition in the downstream markets, in accordance with sections 4(7) and 4(8) of the Act. As BT has market power in the provision of wholesale TISBO, it controls a key input into a range of downstream services – principally leased lines but also virtual private networks, managed services etc. By allowing communications providers access on non-discriminatory terms, competition at the retail level will be encouraged, thereby promoting competition and the interests of consumers and maximising choice in the markets for those downstream services, in accordance with sections 3(4)(b) and 4(3) of the Act.

6.67 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. Ofcom considers that this condition is objectively justifiable, in that it provides safeguards to ensure that competitors, and hence consumers, are not disadvantaged by BT discriminating in favour of its own retail activities or between its own different activities. It does not unduly discriminate, as it is imposed only on communications providers who have SMP. It is proportionate since it only prevents discriminatory behaviour that has a material adverse effect on competition. Finally, it is transparent in that it is clear in its intention to ensure that BT does not unduly discriminate.

6.68 Ofcom considers that imposition of this condition satisfies the conditions set out in section 87(4) of the Communications Act. Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition, as it will ensure that other communications providers are able to make effective use of wholesale inputs and offer products based on these wholesale inputs in competition with BT. By allowing communications providers access on non-discriminatory terms, competition at the retail level will be encouraged, thereby addressing the goal of ensuring that services based on leased line components are provided throughout the UK (excluding Kingston upon Hull).

Wholesale traditional interface symmetric broadband origination regulation 3:
Basis of charges obligations (cost orientation and a cost accounting system)

6.69 Section 87(9) authorises the setting of SMP services conditions imposing on the dominant provider rules concerning the recovery of costs and cost orientation.

6.70 BT is currently required to provide certain wholesale interconnection services, including PPCs, at cost oriented prices. Under the cost orientation obligation, BT will be required to provide wholesale TISBO services at cost oriented prices, calculated on the basis of Long Run Incremental Cost (LRIC) and allowing an appropriate mark-up for the recovery of common costs. In other words, this obligation adds a requirement for cost orientation to BT's requirement to provide access.

6.71 The cost accounting obligation is discussed in Chapter 10, along with justification for the obligation against the various regulatory tests.

6.72 As BT has been identified as having SMP in this market, the availability of wholesale TISBO services at cost oriented prices would help to ensure that the resulting competition in the retail leased lines markets and other downstream markets should lead to lower prices. With this in mind, the proposals for a price control for PPCs to be imposed in addition to a cost orientation condition are discussed below.

6.73 It might be argued that the Competition Act should be used to avoid excessive or predatory pricing. However, Ofcom considers that sectoral tests are likely to be more stringent and more effective than the Competition Act, giving the SMP communications provider less latitude and providing greater certainty for access customers.

6.74 Ofcom therefore considers that it is necessary to apply a cost orientation obligation. The condition sets out that the charges for services should be reasonably derived from the costs of providing those services. It further states that the costs must be calculated on a forward looking long run incremental cost approach, and allowing an appropriate mark-up for the recovery of common costs including an appropriate return on capital employed.

6.75 The condition will apply across all services within this market. This means that the price of all services provided by BT in the market should be based on LRIC and allowing an appropriate mark-up for the recovery of common costs.

6.76 Ofcom confirms that all new services (e.g. SDSL) that are introduced into this market will also be covered by the same pricing rule. This is because new services in the same market would be expected to be subject to the same competitive conditions as existing services. This does not however mean that BT cannot recover costs appropriate to new wholesale services. The recovery of efficiently incurred costs for new wholesale services was discussed in paragraphs 2.23 – 2.25 of Oftel's Access Guidelines.

6.77 Although this condition will apply to all services in this market (i.e. RBS backhaul, LLU backhaul and SDSL, as well as PPCs), and the expectation is that the treatment of new services under the condition will be the same as for existing services, there may be occasional exceptions to this rule. This may arise where the new service is innovative and thus warrants a different regulatory approach. There are three ways in which such services can be dealt with.

i) The service may be so innovative that it falls in a completely new and separate market. In this case the appropriate regulatory obligations will be determined by Ofcom following analysis of this new market.

ii) The new service falls within the market but Ofcom determines that an alternative charging basis is appropriate. For example, a different charging basis may be appropriate for services offered during a trial.

iii) The new service falls within the market and the cost orientation obligation is applied, but there might be a range of prices which would be consistent with cost orientation given the uncertainty about the take up and future profitability of the service. In determining whether a charge is not cost orientated, Ofcom would consider whether the expected or achieved return on capital was excessive. In making this assessment, Ofcom will need to take account of the risk of the new service failing and the lost investment that would result. This therefore maintains an appropriate incentive for the communications provider to invest in new services and technologies.

6.78 The condition contains a clause enabling Ofcom to determine that a price need not be set on a forward-looking LRIC basis. This is particularly relevant to scenario ii) above where Ofcom determines that an alternative charging basis is appropriate. If BT wishes to set a price for a service in any of the markets on any other basis than forward-looking LRIC, it must apply to Ofcom for permission to do this.

6.79 As explained above, Ofcom has concluded that CSH and ISH interconnection services (including the ISH extension and STM-1 point of handover ISH and CSH products discussed below) can be considered as a technical area related to the markets where Ofcom has initially found SMP. Ofcom therefore also intends to apply this condition to the technical areas outlined above.

6.80 Ofcom considers that the cost orientation condition is justifiable and a proportionate response to the extent of competition in the markets analysed. It enables competitors to purchase services at a rate which will enable them to develop competitive services to the benefit of consumers, whilst at the same time allowing BT a fair rate of return which it would expect in a competitive market. The potential for a degree of flexibility envisaged in the approach to the recovery of cost of capital recognises that some investments will carry a higher degree of risk than others and does not remove incentives for the development of new services.

Responses to the draft notification – basis of charges

6.81 It was suggested by some communications providers that the imposition of a cost orientation obligation for SDSL was inconsistent with the retail minus pricing proposed for ADSL. BT opposed cost orientation for SDSL on the grounds that such a move was premature for a recently launched product and could undermine the business plans and infrastructure investment made by communications providers involved in local loop unbundling.

6.82 It was also suggested by one communications provider that the distance premium for TISBO (and AISBO) products (i.e. the per kilometre element of the charges) should be made to properly reflect the underlying cost structure of the products in order to ensure that the products were cost orientated.

6.83 One communications provider suggested that it was unnecessary to impose a cost orientation obligation on CSH services as some communications providers have a business providing such links by exploiting their own networks. The only element of the link that these communications providers were unable to provide is the element within BT's exchange buildings.

6.84 As explained in Chapter 2, Ofcom considers that SDSL and ADSL fall within different product markets. As such, there is no inconsistency in Ofcom imposing different regulatory obligations in these two separate markets. The fact that SDSL has been included in the market for TISBO products means that the same regulatory obligations should be imposed on it as on other products in the same market. Failure to do so could risk undermining regulation and competition in the market as a whole. The same justification for imposing regulation applies to that imposed on CSH services.

6.85 Ofcom is not setting specific charges for TISBO and AISBO products in this market review, other than those for certain PPC charges in the interim price control which merely carries forward existing regulation until such time as the longer term price control comes into force. The longer term price control, the consultation for which was published at the same time as this document, considers in more detail the appropriate cost elements for PPCs. Comments on the appropriateness of distance elements of TISBO charges would be better considered as part of that consultation. If communications providers have concerns that prices for AISBO and TISBO products are not cost oriented in line with the obligations imposed as a result of this document, it remains open for them to submit a complaint to Ofcom for consideration.

Conclusions – basis of charges obligations

6.86 Having considered the responses to the draft notification, Ofcom has concluded that a condition should be imposed in these markets in the form set out at Annex D.

Communications Act tests

6.87 Ofcom considers that the conditions (Conditions G3 and GG3 in Annex D) meet the tests set out in the Act.

6.88 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4 of the Act. In particular, the conditions encourage the provision of network access and service interoperability for the purpose of efficiency and sustainable competition in the markets for electronic communications networks, electronic communications services and associated facilities, in accordance with sections 4(7) and 4(8) of the Act. Excessively high pricing of wholesale inputs distorts allocation of resources and leads to inefficiency for retail competitors who may be forced into using less efficient alternative technologies. Ensuring that BT as the dominant provider is unable to charge excessive prices will therefore promote competition and thereby promote the interests of end users, in accordance with sections 3(4)(b) and 4(3) of the Act.

6.89 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. Ofcom considers that the conditions are an objectively justifiable and proportionate response to the extent of competition in the markets analysed, as they enable competitors to purchase services at charges that will enable them to develop competitive services to the benefit of consumers, whilst at the same time allowing BT a fair rate of return that it would expect in competitive markets. They do not unduly discriminate, as they are imposed on BT and no other communications provider has SMP in these markets. Finally, they are transparent in that they are clear in their intention to ensure that BT charges on a LRIC plus mark-up basis.

6.90 Ofcom considers that imposition of cost orientation conditions satisfies section 88 of the Act. Without them, there is a relevant risk of adverse effects arising from price distortion because BT, as it has SMP in these markets, has the ability to price above the competitive level, so as to have adverse consequences for end users of public electronic communications services. In these markets, this was clearly evidenced by the absence of cost orientation of the prices set by BT prior to the determination of prices by Oftel in the Phase 2 PPC Direction. Ofcom further considers in this connection that the conditions are appropriate for the purposes of promoting efficiency and sustainable competition and conferring the greatest possible benefits on the end users of public electronic communications services.

Wholesale traditional interface symmetric broadband origination regulation 4:
Price control on PPCs

6.91 Section 87(9)(a) of the Act authorises the setting of SMP services conditions imposing price controls in relation to matters connected with the provision of network access.

6.92 Oftel set starting charges for PPCs from 1 August 2001 as part of the PPC Phase 2 Direction and applied interim reductions to these prices from 1 August 2002. The draft notification proposed further interim reductions to these prices from 1

March 2004. This obligation would set future prices for PPCs, in the longer term (see below) by means of an annual RPI-X% reduction.

Putting a long term price control into practice

6.93 Ofcom has commenced an analysis to assess how BT's costs of providing PPC TISBO services will change over the next few years. The conclusions of this analysis will be used to inform Ofcom's conclusions about the longer-term PPC price control to be imposed. However, this analysis will not be completed in time to implement a price control in conjunction with this market review and the other remedies being imposed in this document. Therefore, it was proposed in the draft notification to implement an interim price control effective from 1 March 2004 or the earliest possible date thereafter. At this stage, it is envisaged that the longer term price control will be introduced from 1 October 2004, with a consultation document outlining in full the proposed form, scope, duration and level being published at the same time as this market review document.

6.94 The interim price control will be in place while Ofcom finalises the analysis for proposals for a longer-term PPC price control. Ofcom considers it appropriate to implement an interim price control to reflect the expected reduction in the costs of the provision of PPC TISBO over time. This will ensure that BT continues to offer PPC TISBO services on a broadly cost oriented basis.

Putting an interim price control into practice

Scope

6.95 The scope of the interim PPC price control is limited to the products and equipment (as included in BT's PPC price list) related to the provision of PPC TISBO services, the price of which were determined as part of the Phase 2 Direction. This ensures that BT is unable to set excessively high prices for these products while placing incentives on BT to reduce its costs for the provision of these TISBO services.

Form

6.96 The interim price control takes the form of an indexation of all of the current charges to update them for a further year's cost changes. A discussion of Ofcom's conclusions on the value of the indexation takes place in the "Level" section below. The use of indexation means that Ofcom is not making any changes to the structure or relativity of the PPC charges, but limits adjustments to the level. Possible changes in the structure of the charges is an issue to be considered as part of the longer term price control.

6.97 The actual implementation is carried out by means of a condition stating that BT shall charge the prices set out in the annex to that condition. The condition and prices (see below) are set out in Annex D. Subsequent implementation of the longer term price control will then in all probability be carried out by means of modification of this condition.

Duration

6.98 As explained above, Ofcom intends to continue with the work to assess the costs to BT of providing PPC TISBO and to assess the likely change in costs over time. This work will then inform Ofcom's proposals for a longer-term price control. Ofcom envisages at this stage that the longer term price control will take effect from 1 October 2004.

6.99 The draft notification proposed that the interim price control would take effect from 1 March 2004 and run to the implementation date of the longer term price control. Ofcom has concluded now that the interim price control should take effect from the implementation date of the conditions set out in Annex D, i.e. 25 June 2004.

Level

6.100 As explained above, Ofcom expects that the costs of providing PPC TISBO services should decrease over time in real terms. Therefore, to account for this reduction in costs, it is appropriate to reduce the price that BT charges for its PPC TISBO services.

6.101 In the PPC Phase 2 Direction, Oftel calculated BT's PPC charges from cost information provided by BT from 2000/01. Initial charges were set from 1 August 2001 and subsequently amended from 1 August 2002. To adjust the charges, Oftel used the value of X from the Interconnection Specific Basket (ISB) from the network charge control adjusted to exclude excess profit. The ISB was considered to be the appropriate proxy as the costs within it are driven by the number of circuits (as with leased lines), whereas the other baskets are driven by the number of calls. The ISB value of X after this adjustment is 7%.

6.102 The ISB is the basket in the network charge control that is relevant to the charges that BT can levy on services purchased by other communications providers to interconnect physically with BT at the tandem layer or local exchange layer. The main cost driver of these services is the number of circuits, rather than the volume of calls. Thus, the ISB value of X was in Oftel's view the most suitable proxy for the value of X to be applied to PPCs when setting the charges to apply from 1 August 2001 and 1 August 2002. It would not be appropriate to include PPCs in the ISB as this basket is part of the network charge control and is not related to leased lines.

6.103 Ofcom considers that the ISB value of X is likely again to be the most appropriate proxy to use for the interim adjustment to BT's PPC prices from 25 June 2004 for the same reasons as before. It imposes a real reduction in BT's charges for its PPC TISBO services and trunk segments which recognises that the costs of provision should decrease over time. As the ISB was used as the deflator in the December 2002 Phase 2 Direction, its use for calculation of the PPC TISBO service and trunk segment charges from 25 June 2004 is consistent with the approach that has gone before.

6.104 The interim price control is intended to cover the period 1 August 2003 to 31 July 2004. The value of X that is necessary to meet the obligation to reduce the basket of PPC prices by RPI-7% over that period will depend on the date on which the interim price control actually takes effect. Thus, in the draft notification it was proposed that if the price control took effect from 1 March 2004, a value of X of 12.7% would need to be set to ensure that by 31 July 2004 prices would have fallen by RPI-7% since August 1 2003 (see below for further explanation).

6.105 Ofcom has set out the revised PPC prices in the annex to the PPC price control condition in Annex D of this document.

Justification for price control (interim and long term)

6.106 The arguments for and against a PPC price control are set out below. Ofcom has, in addition, carried out a quantitative analysis in order to illuminate the more rigorously assessed conclusion as to whether a price cap should be imposed on PPCs. The cost benefit analysis is discussed in detail in Annex C, and consists of two CBAs, one studying the obligation to supply (as opposed to no obligation to supply) and one looking at the imposition of an interim price control (as opposed to no price control being implemented). In summary, for both analyses there are similar conclusions, namely that the benefits associated with the PPC CBA outweigh the costs. Ofcom considers that for these reasons and those set out below, a PPC price control should be introduced. This will ensure that communications providers are able more effectively to compete in the retail traditional interface leased lines market and in the provision of other retail services which rely on PPCs as a wholesale input, in turn serving the best interests of consumers.

6.107 It might be argued that Ofcom's proposal for cost orientation in this market is sufficient and that it is therefore unnecessary to apply a price control in addition. However, Ofcom does not consider that the obligations for cost orientation imposed on BT in the low bandwidth and high bandwidth TISBO markets provide sufficient constraint on PPC terminating segment charges and that it is necessary to apply a charge control. In the absence of charge controls, BT would have little incentive to reduce or constrain increases in its costs and hence in its PPC prices.

6.108 A price control, on the other hand, would give BT the incentive to be more efficient. One of the main benefits of RPI-X type price regulation is that it creates incentives for firms to increase their efficiency. By divorcing for a period of time the level of prices from the firm's incurred costs, the regulated firm has an incentive to increase its cost efficiency over and above the increase forecast when setting the price control, by reducing costs below the price cap i.e. unanticipated efficiency gains. The price controlled firm benefits from this efficiency through increased profits.

6.109 However, when setting the terms of the subsequent price control, the gap between price and cost is closed on a forward-looking basis (apart from exceptional circumstances Ofcom does not favour attempting to claw back the increased profits earned by the firm in the previous price control, since this would weaken the firm's incentives to make the cost reductions in the first place). So the unanticipated efficiency gains feed into a tighter price control going forward. In this way the gains from increased cost efficiency are shared between the firm and consumers, so that consumers benefit in the longer term.

6.110 When setting the terms of the price control Ofcom will bear in mind the potential consequences of setting the price control too tightly – this could:

- impact on the ability of LLU communications providers to build a sustainable business since TISBO is one of the markets that LLU communications providers might wish to enter; and/or
- cause BT to price PPCs below cost, which in turn could act as a disincentive (both to BT and to other communications providers) to invest in infrastructure.

6.111 In addition, there are many common network components between the two types of services. If the effective transfer prices for utilisation of these components were lower for PPCs than for LLU communications providers' services it would mean that the services bought by LLU communications providers from BT would be offered at discriminatorily high prices.

6.112 As explained above, Ofcom has concluded that CSH and ISH interconnection services (including the ISH extension and STM-1 point of handover ISH and CSH products discussed below) can be considered as a technical area related to the markets where Ofcom has found SMP. Ofcom has therefore included these services within the price control.

6.113 This Direction fits with Recital 20 of the Access Directive which states that price control may be necessary when market analysis in a particular market reveals ineffective competition.

6.114 The Access Directive further states in Article 13 that an NRA may impose price controls “where a market analysis indicates that lack of effective competition means that the operator might sustain prices at an excessively high level, or apply a price squeeze, to the detriment of end users”.

Responses to the draft notification – PPC price control

6.115 BT and other communications providers suggested that the interim price control sets incorrect expectations that the price cap will lead to prices that are equal to a 12.7% reduction and that these prices would be in line with BT’s costs. Communications providers pointed out that the price control only applies to a small proportion of prices and suggested that some charges have been omitted from the price control.

6.116 Communications providers suggested that they should be provided with transparent workings to support the price control and that it should be ensured that BT does not make any windfall gains.

6.117 BT expressed concern that the proposed 12.7% reduction would lead to a significant one-off price drop and that prices could subsequently rise when the long term price control comes into effect. BT proposed that a retrospective billing exercise take place instead that would see prices for the period August 2003 to July 2004 reduced by RPI-7%.

6.118 UKCTA argued that the long term price control should be based on a bottom-up approach rather than a cost-down approach and that capacity based charging should be reconsidered. BT proposed that the long term price control should start from October 2004, whereas communications providers suggested that it should start as soon as possible.

6.119 It was suggested by one communications provider that the PPC prices understate low bandwidth costs and overstate high bandwidth costs and that rebalancing should take place. It was also claimed that the PPC set-up and fixed costs are too high (especially as regards interconnection points) and that this creates a barrier to entry for smaller entrants as trunk segment lengths are increased.

6.120 BT pointed out that the interim price control does not correct for known pricing anomalies that it has previously made known to Ofcom. Ofcom has taken account of these anomalies in the prices set out in Annex D.

6.121 Ofcom does not consider it likely that communications providers will draw incorrect expectations as to the effect of the price cap imposed through the interim price control. Communications providers appear to be well informed of the effect of the price control and the prices that should take effect are clearly set out in Annex D.

Ofcom has clearly set out below how the value of X for the interim price control has been arrived at. Details of how the long term price control is arrived at are included in the consultation document on these proposals that is being published at the same time as this document and Ofcom considers that any concerns about costs and how they should be apportioned in the price control would be better addressed as part of that consultation rather than this market review, which is simply rolling over the previous price control. Ofcom notes communications providers' comments about the number of prices that the price control actually covers and refers them to paragraph 6.95 above, which sets out the scope of the price control.

6.122 Ofcom agrees with BT that the retrospection of price changes back to 1 August 2003 with an X of 7% would be preferable to the imposition of a higher value of X from 25 June 2004 as it would provide savings to communications providers who have purchased PPCs over the whole 12 months, rather than those who simply make purchases between 25 June and 1 October. On the basis of the indication provided by BT that it will promptly backdate price changes back to 1 August 2003, Ofcom intends to amend this condition slightly so that it will only come into force if BT fails to implement this proposal.

6.123 Ofcom intends that the interim price control should only be in place for as long as is necessary for longer term price control proposals to be developed using reliable information from BT and other sources where this is available. However, at this time, Ofcom does not intend to review whether it is appropriate to introduce service based prices. As set out in the PPC Phase 2 Direction, Ofcom believes that service based prices are desirable in the longer term. However, Ofcom intends to continue with capacity based prices for the time being to ensure stability and certainty in the market while this new market settles down. However, this issue will be revisited in subsequent price control reviews once take-up and usage data for PPCs over a reasonable period of time becomes available and the market has been given a chance to mature.

6.124 As part of the work to develop proposals for the longer term price control, Ofcom has considered whether it is necessary to conduct a bottom-up review of BT's costs of providing PPCs. Ofcom has concluded that while this may be desirable in the longer term, nevertheless due to information and resource constraints and a desire not to alter the current structure of PPC charges, from capacity based to service based, it is not necessary to conduct a bottom-up review at this time. However, Ofcom is using external resources in its formulation of proposals for the longer term price control to help ensure that BT's prices are cost oriented. This will involve using other sources of information as a benchmark against which to assess BT's cost information.

Conclusions – PPC price control

6.125 Ofcom considers that it is appropriate to implement an interim price control on BT's PPC charges. Ofcom has taken account of BT's proposal to retrospectively apply price reductions to 1 August 2003, thereby ensuring that reductions of RPI-7% are necessary rather than the higher reduction that would have been necessary had the price reductions taken place from 25 June 2004. Ofcom has set out in Annex D the table of charges – those that would be applicable from the effective date of 25 June 2004 if BT fails to implement its proposal to retrospectively apply RPI-7% price reductions to 1 August 2003. The method of calculating these charges was set out in the statement accompanying the draft notification, published in December 2003.

6.126 As noted above, Ofcom considers it appropriate to implement a longer term price control from 1 October 2004 using cost data from BT and other appropriate sources. Ofcom has set out in detail its approach to developing proposals for the longer term price control in a separate consultation document that has been published at the same time as this document.

Communications Act tests

6.127 Ofcom considers that the conditions (Conditions G4 and GG4 in Annex D) meet the tests set out in the Act.

6.128 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4 of the Act. In particular, the conditions, by preventing the fixing and maintaining of prices at an excessively high level, encourage the provision of network access and service interoperability for the purpose of efficiency and sustainable competition in the markets for electronic communications networks, electronic communications services and associated facilities, in accordance with sections 4(7) and 4(8) of the Act.

6.129 Ofcom considers that the conditions satisfy the tests set out in section 47(2) of the Act. They are objectively justifiable, in that they relate to the need to ensure that competition develops to the benefit of consumers. They do not discriminate in that any provider of electronic communications networks, services or associated facilities can request access from a dominant provider. They do not discriminate against BT because BT has been found to hold a position of SMP in this market, and as such is in a particular position to exploit its advantages were this regulation not to be implemented. The conditions are set out in a transparent form in Annex D. Ofcom therefore considers that the obligations meet the requirement of transparency set out in the Act.

6.130 Ofcom considers that imposition of these conditions satisfies section 88 of the Communications Act. Without them there is a risk of adverse effects arising from price distortion because BT, as it has SMP in this market, has the ability to price above the competitive level, so as to have adverse consequences for end users of public electronic communications services. By controlling BT's PPC prices in the manner set out above, Ofcom considers that the conditions are appropriate for the purposes of promoting efficiency and sustainable competition by encouraging BT to be more efficient and enabling other communications providers to compete with BT at the retail level. This will result in the availability of a wider range of services at lower prices, thereby conferring the greatest possible benefits on the end users of public electronic communications services.

Wholesale traditional interface symmetric broadband origination regulation 5:
Accounting separation obligation

6.131 Ofcom is imposing an accounting separation obligation in this market. This is discussed in Chapter 10, along with justification against the various regulatory tests. The precise wording of the condition is discussed in more detail in the separate accounting consultation document *Financial reporting obligations in SMP markets* published by Ofcom.

Wholesale traditional interface symmetric broadband origination regulation 6:
Requirement to publish a reference offer

6.132 Section 87(6)(c) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information for the purpose of securing transparency. Section 87(6)(d) also permits the setting of conditions requiring the dominant provider to include specified terms and conditions into the reference offer.

6.133 BT is currently obliged to publish prices, terms and conditions for leased line interconnection in its Standard Interconnect Agreement. Under this obligation, BT would have to publish in respect of its wholesale TISBO services the prices, terms and conditions in the form of a Reference Offer (RO) – the published RO must include:

- a clear description of the services on offer;
- terms and conditions including charges and ordering, provisioning, billing and dispute resolution procedures . The RO should provide sufficient information to enable communications providers to make technical and commercial judgements such that there is no material adverse effect on competition;
- information relating to technical interfaces and points of interconnection. Such information should ensure that providers are able to make full and effective use of all the services provided;
- conditions relating to maintenance and quality (service level agreement). The inclusion of service levels, as part of the contractual terms of the RO, that provides for a minimum acceptable level of service, will ensure that services are provided in a fair, reasonable, timely and non-discriminatory fashion; and
- terms and conditions that are fair and reasonable. This will help to ensure that products are offered on terms and conditions as they would in a competitive market and that they are sensible, practical, and do not impose a margin squeeze on competitors.

6.134 The obligation prohibits BT from departing from the charges terms and conditions in the Reference Offer and requires BT to comply with any Directions Ofcom may make from time to time under the condition.

6.135 Requiring BT to publish prices, terms and conditions would help to create transparency in this market where BT has been identified as having SMP. Since wholesale TISBO services are an input for retail products, transparency is necessary to ensure competition in downstream (retail) markets.

6.136 An obligation to publish prices could lead to other communications providers following BT's prices, rather than being dynamic in setting prices at the true competitive level. However, this is less of a consideration than in the trunk market (see below) as there is likely to be more limited competition in the provision of TISBO services.

6.137 The condition also requires BT to publish information on the use of network components in providing TISBO services. Network components for TISBO services will be reviewed in the work stream referred to in paragraph 7.35 of Ofcom's statement of April 2004 on *The regulatory financial reporting obligations on BT and Kingston Communications in markets where SMP has been demonstrated*. Following this review, it is likely that Ofcom will direct changes to the current network component list to include appropriate network components for TISBO services. Once this anticipated direction is finalised, the obligation to publish this information will be more meaningful. This will help Ofcom to monitor the effectiveness of BT's non-discrimination obligations, and to deal with any complaints about breaches of those obligations. This is discussed in more detail in Chapter 10.

6.138 Ofcom therefore considers that a price publication obligation should be put in place. This accords with Article 9 and with Recital 16 of the Access Directive, which states that transparency of terms and conditions for access and interconnection, including prices, serves to speed up negotiation, avoid complaints and give confidence to market players that a service is not being provided on discriminatory terms.

6.139 This obligation will help enable communications providers, end users and others to put to Ofcom fully justified and objectively reasoned complaints of anticompetitive behaviour by BT, and to obtain redress where appropriate.

6.140 As explained above, Ofcom has concluded that CSH and ISH interconnection services can be considered as a technical area related to the markets where Ofcom has found SMP. Ofcom has therefore also applied this condition to the technical areas outlined above.

Responses to the draft notification – publication of reference offer

6.141 BT suggests that there appear to be no reasons for including details of the network access that it provides itself in the reference offer. BT argues that the publication of standard services (to be known as wholesale services under the new regulatory reporting regime) already meets this obligation and that any further concerns Ofcom has should be dealt with through the use of competition law.

6.142 Ofcom considers that it is necessary for BT to publish details of the network access services that it provides itself in order to enable BT's competitors to have visibility of the composition of these services. Furthermore it will link the prices charged to external parties to the transfer charges levied on BT's downstream activities which will be disclosed in its regulatory financial statements. Retrospective publication in BT's statement of regulatory financial statements would not make available this information as and when new services are provided to BT's downstream activities. The publication of transfer charges in BT's reference offer will impose little if any additional burden on BT, since the charges would otherwise have needed to be prepared (albeit at a later date) for publication in its regulatory financial statements, and BT will need to be aware of these transfer prices in order to ensure that it is complying with its obligations at all times.

6.143 BT argued in its response that the only practical way for it to implement the condition relating to the inclusion of transfer charges within the reference offer (Condition G5.2(o)) was by a reference out to the Accounting Separation accounts, which already include BT's internal charges.

6.144 Ofcom notes BT's comments on the inclusion of transfer charges within the reference offer but considers that no material additional burden is being imposed on it. Condition G5 imposes an obligation on BT to provide a minimum set of information in its reference offer.

Conclusions – requirement to publish a reference offer

6.145 Having considered the consultation responses, Ofcom has concluded that a condition should be imposed in these markets in the form set out at Annex D.

Communications Act tests

6.146 Ofcom considers that the conditions (Conditions G5 and GG5 in Annex D) meet the tests set out in the Act.

6.147 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4 of the Act. In particular, the conditions encourage compliance with the requirement not to discriminate unduly, for the purpose of facilitating service interoperability and securing freedom of choice for the customers of communications providers, by making BT's contractual terms more transparent, in accordance with sections 4(7) and 4(8) of the Act. They promote the interests of purchasers of wholesale TISBO services by enabling them to adjust their downstream offerings in competition with BT, in response to changes in BT's terms and conditions. They also promote competition in the TISBO market by allowing BT's competitors in the provision of TISBO services to make appropriate changes to their products, in accordance with sections 3(4)(b) and 4(3) of the Act. Finally, they will allow Ofcom more easily to monitor discrimination, so ensuring competition in the downstream markets.

6.148 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The conditions are objectively justifiable in that they require that terms and condition are published in order to encourage competition and provide stability in markets by providing transparency of BT's prices, terms and conditions, thereby allowing communications providers to better plan their businesses and customer relationships. They are proportionate, as only information that is necessary to ensure that that there is no material adverse effect on competition is required to be provided. They do not unduly discriminate as they are applied to BT and no other provider has SMP in these markets. Finally, they are transparent in that they are clear in their intentions to ensure that BT publishes details of its terms and conditions.

6.149 Ofcom considers that imposing these obligations satisfies the conditions set out in section 87(4) of the Communications Act. Ofcom considers that it is fair and reasonable to impose these conditions in the interests of effective competition in the long term, by ensuring communications providers can make effective use of wholesale inputs and offer products based on these wholesale inputs in competition with BT. In addition they will address the goal of ensuring that services based on leased line components are provided throughout the UK.

Wholesale traditional interface symmetric broadband origination regulation 7:
Requirement to provide advance notification of changes to prices, terms and conditions

6.150 Section 87(6)(b) of the Act authorises the setting of SMP services conditions requiring the dominant provider to publish, in such manner as Ofcom may direct, the terms and conditions on which it is willing to enter into an access contract (e.g.: by publication of a reference offer).

6.151 BT is currently required to give advance notification of price changes for certain products as part of its Standard Interconnect agreement (one day for competitive products, 28 days for prospectively competitive products and 90 days for non competitive products).

6.152 BT has been identified as having SMP in these markets. Advance notification will give communications providers the opportunity to respond to prices, creating a 'ripple effect' that passes price reductions down to end users. Customers may take the opportunity to consider changing suppliers.

6.153 It might be argued that an obligation to provide advance notification of prices could lead to a 'chilling' effect where other communications providers follow BT's prices rather than act dynamically to set competitive prices in the TISBO market. However, given that Ofcom's primary aim is to address the consequences for downstream markets of BT's market power in this market, Ofcom does not believe that this consideration will undermine imposition of this obligation.

6.154 Ofcom therefore considers that BT should be obliged to provide advance notice of changes to the prices terms and conditions of its wholesale TISBO services, which are an essential input for products in the retail markets. Ofcom considers that the notification period should vary according to whether the product is a new product or an existing product, as well as the degree of market power.

6.155 For existing wholesale low and high bandwidth TISBO products, Ofcom proposed in the draft notification that 90 days would be an appropriate period for notice of changes to prices terms or conditions. In Ofcom's view, this period of notice was necessary to give communications providers sufficient time to respond to changes to BT's wholesale products and allow them to plan and implement their reactions to those changes, for example they might wish to make similar changes to comparable products they offer, without the increased risk of incurring forecasting penalties that a 28 day notification period might incur. This will prevent them from being put at a competitive disadvantage in relation to BT's retail arm.

6.156 For new wholesale low and high bandwidth TISBO products, Ofcom considers that 28 days would be a more appropriate period of notice for changes to prices, terms or conditions. In Ofcom's view, this provides the appropriate balance between allowing communications providers sufficient time to react to the changes made by BT, and the potential competition 'chilling' effects described above. Forecasting penalties are unlikely to be an issue for new products.

6.157 As explained above, Ofcom has concluded that CSH and ISH interconnection services can be considered as a technical area related to the markets where Ofcom has found SMP. Ofcom is therefore also applying this condition to the technical areas outlined above.

6.158 As noted above, Ofcom considers that transparency obligations, which include notification of prices, accord with Recital 16 of the Access Directive, which states that transparency of terms and conditions for access and interconnection, including prices, serves to speed up negotiation, avoid complaints and give confidence to market players that a service is not being provided on discriminatory terms.

Responses to the draft notification – notification of price changes etc

6.159 BT argues that the increased notification period for changes to TISBO terms and conditions is not justified. BT suggests that the arguments put forward by Ofcom in the draft notification about forecasting might not necessarily be relevant as BT would be ready to allow a change in communications providers' forecasts ensuring that penalty payment would not apply if BT's price notification would otherwise result in these payments. BT also indicated that it did not understand the role of lead times in the reasoning put forward to justify an extension of the notification period for existing products to 90 days. BT argued that a change to the notification periods would introduce delay and adversely affect the market.

6.160 Ofcom welcomes BT's offer to allow change in communications providers' forecasts in case a change in terms and conditions would lead to unexpected forecasting penalties for the operators. Indeed Ofcom's intention in extending the notification period is to minimise the disadvantages that the change in terms and/or conditions can have on the forecasting obligations of communications providers and on their room for manoeuvre to deal with the consequence of a price change. Ofcom is of the view that it is easier to reach that objective by extending the notification period than by specifying to BT how it should allow communications providers to revise their forecasts as a result of a notification of terms and conditions changes that turns out to be disadvantageous.

6.161 Ofcom refers to lead time in its reasoning to extend the notification period because one possible penalty of wrong forecasts (namely in the case of under-forecasting) does not consist in a penalty payment but in the extension of the lead time by 50 per cent for all the orders that were not forecasted. Given that forecasts can only be revised every four months (i.e. every 120 days) and that the percentage of forecast revision is fixed by regulation (10% below and 20% above for the nearest forecast period and 30% below or 30% above for the furthest forecast period), Ofcom considers it proportionate to extend the price notification period for existing products to 90 days. Ofcom is of the view that this offers the appropriate balance between BT's need for a forecasting system and a communications provider's right not to be unduly penalised by a change in terms and conditions due to the reduced flexibility that the forecasting system introduces and this is likely to promote the good functioning of the market,

6.162 BT further suggested that it would be preferable for the notification to refer to 'components' rather than 'products' or 'services' in the context of PPCs.

6.163 To the extent that BT has failed to provide any adequate reasoning as to why it considers it necessary for the word 'component' to be used instead of 'product' or 'service' and that other communications providers have not had an opportunity to comment on BT's proposed changes, Ofcom has concluded that it would not be appropriate to amend the wording of the notification. It appears to Ofcom that the change of wording makes no difference to the obligation imposed on BT.

Conclusions – notification of prices terms and conditions

6.164 Having considered the consultation responses Ofcom is imposing conditions G6 and GG6 in Annex D, which require advance notification periods of 90 days for changes to both existing low and high bandwidth TISBO products, and 28 days for new low and high bandwidth TISBO products.

Communications Act tests

6.165 Ofcom considers that the conditions meet the tests set out in Section 47 of the Act. The justification for imposing the conditions is that general and reliable visibility of a dominant communications provider's prices is needed to enable Ofcom and competitors to monitor BT's prices for possible anti competitive behaviour. Imposition of these conditions does not discriminate unduly against BT as it is the only communications provider in the market with SMP; the behaviour of other communications providers is not capable of having a materially adverse effect on competition as these communications providers do not have market power. The remedies are proportionate, as they are the least burdensome means of achieving the objective of transparency, and the requirements are made fully transparent in Annex D.

6.166 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4 of the Act. In particular, the conditions encourage compliance with transparency, for the purpose of facilitating service interoperability and securing freedom of choice for the customers of communications providers, in accordance with sections 4(7) and 4(8) of the Act. They promote the interests of purchasers of wholesale TISBO services by enabling them to adjust their downstream offerings in competition with BT, in response to changes in BT's terms and conditions by informing them of when those changes are going to occur, thereby allowing them to better plan their businesses and relationships with their customers. They also promote competition in the TISBO market by allowing BT's competitors in the provision of TISBO services to make appropriate changes to their products, in accordance with sections 3(4)(b) and 4(3) of the Act. Finally, they will allow Ofcom more easily to monitor discrimination, thereby ensuring competition in the downstream markets.

6.167 Ofcom considers that imposing these obligations satisfies the conditions set out in section 87(4) of the Communications Act. Ofcom considers that it is fair and reasonable to impose these conditions in the interests of effective competition in the long term, by ensuring communications providers have access to transparent information that enables them to make effective use of wholesale inputs and offer products based on these wholesale inputs in competition with BT In addition they will address the goal of ensuring that services based on leased line components are provided throughout the UK.

Wholesale traditional interface symmetric broadband origination regulation 8:
Obligation to provide quality of service information

6.168 Section 87(6)(b) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information for the purpose of securing transparency. The condition imposed by Ofcom in Annex D requires BT to publish such information in the manner and form required by Ofcom.

6.169 This obligation would require BT to publish information relating to the quality of the service it delivers in providing wholesale TISBO products. The condition would have the potential to deliver benefits in a number of areas, most notably prevention of undue discrimination. Other benefits might include, for example, benchmarking with international comparators in situations where BT delivers a similar quality of service to all communications providers including itself, but this level of service falls short of the service generally offered in comparable countries, most notably within the EU.

6.170 The principle of no undue discrimination is intended to ensure that communications providers with SMP do not distort competition. As noted in Recital 17 of the AID, the application of this principle is particularly important where a vertically integrated communications provider, with market power in a particular wholesale market, supplies services to other communications providers with whom they compete in a downstream retail market.

6.171 Section 87(6)(a) of the Communications Act allows Ofcom to impose a no undue discrimination condition on a dominant provider where there has been an SMP determination in an identified market. The no undue discrimination condition set out in Annex D requires the dominant provider not to unduly discriminate against particular persons, or against a particular description of persons, in relation to matters connected with network access.

6.172 It might be argued that a dominant communications provider should meet this condition by providing wholesale services to other communications providers using the same operational processes and interfaces it uses to supply itself.

6.173 However, the high cost of replacing legacy systems means that this will not always be practical. Instead, Ofcom considers that the most objectively justifiable and proportionate means of meeting this condition is to require that a dominant communications provider delivers the same operational performance to other communications providers as it delivers to itself. Specifically, this means that Key Performance Indicators (KPIs) such as ordering times and fault response times must be the same.

6.174 Ofcom believes that the only means of ensuring that there is no undue discrimination as to quality of service is by imposing a requirement to publish such information. Without such a requirement, Ofcom believes that it would be impossible to monitor that the different operational processes used by the dominant communications provider were delivering an equivalent quality of service. Ofcom also considers that this condition provides the necessary transparency to give it assurance that services are being supplied on fair and reasonable terms and in a timely manner.

6.175 Ofcom believes that it is insufficient to rely on requesting the necessary quality of service information each time it is required, as suggested in paragraph 3.51 of Oftel's Access Guidelines. In the absence of an *ex ante* obligation to do so, there is no guarantee that the necessary information will be collected at the time of any given event. It is not in general possible to reconstruct data for operational performance retrospectively.

6.176 Ofcom therefore concludes that this obligation should be imposed. As explained above, Ofcom has concluded that CSH and ISH interconnection services can be considered as a technical area related to the markets where Ofcom has initially found SMP. Ofcom has also therefore applied this condition to the technical areas outlined above.

6.177 The specific condition set out in Annex D requires BT to publish data on a specified set of KPIs, with a format and frequency to be determined by Ofcom. This condition follows section 87(6)(b)) which allows Ofcom to impose a condition of transparency whereby Ofcom can require a dominant provider to publish all such information as directed by it to secure transparency in relation to matters such as non-discrimination.

6.178 It is Ofcom's intention that the scope of publication should take account of the potential conflict between any obligation to publish performance data, in order to provide transparency, and the need to maintain commercial confidentiality.

6.179 For the wholesale fixed narrowband and wholesale broadband access market reviews, Ofcom has set out its proposals for the specific KPIs to be covered by the condition, as well as the publication process and frequency, in a separate Consultation Document issued on 27 May 2004 – see http://www.ofcom.org.uk/consultations/current/bt_kpi/?a=87101. Ofcom intends to finalise the Directions in the Autumn.

6.180 For this market, however, the issues have recently been addressed in some detail by the recently published PPC Phase 2 Direction, and Ofcom has re-made the majority of those measures by means of a Direction under this condition. This is discussed in detail in the section "Direction under quality of service information condition requiring BT to provide specific information in respect of PPCs", below.

6.181 Implementation of this regulation is in line with the Commission's SMP Guidelines, which state at paragraph 119 that *"in the early stages of the new framework, the Commission would not expect NRAs to withdraw existing regulatory obligations which have been designed to address legitimate regulatory needs which remain relevant, without presenting clear evidence that those obligations have achieved their purpose and are no longer required since competition is deemed to be effective"*. It will enable Ofcom to make Directions requiring BT to publish specific quality of service information.

Responses to the draft notification – quality of service information

6.182 No comments were received on this issue.

Conclusions – provision of quality of service information

6.183 For the reasons set out above, Ofcom has imposed conditions G7 and GG7 in Annex D. The conditions remain in the same terms as those previously consulted on.

Communications Act tests

6.184 Ofcom considers that the condition meets the tests set out in the Act.

6.185 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4 of the Act. In particular, the conditions encourage the provision of network access and service interoperability for the purpose of securing the maximum benefit for the persons who are customers of communications providers and of persons who make such facilities available, in accordance with sections 4(7) and 4(8) of the Act. They promote competition and thereby the interests of end users in downstream markets, by denying BT as the dominant provider in this market the opportunity to discriminate in the quality of service it provides to customers, in accordance with sections 3(4)(b) and 4(3) of the Act.

6.186 It is Ofcom's current view that the transparency conditions imposed satisfy the relevant requirements specified in section 47(2) of the Act. In particular, Ofcom considers that

- The conditions are objectively justifiable because they are the only means of ensuring that a dominant communications provider provides an equivalent quality of service to other communications providers as it provides to itself. This is necessary in order to prevent a vertically integrated communications provider, with market power in a particular wholesale market, leveraging this into a downstream market.
- The conditions do not unduly discriminate against a particular person because they apply to the dominant provider in circumstances where there has been an SMP determination. In the case of the dominant provider, the supply of wholesale services must be in sufficient volume for the publication of KPI data to be statistically meaningful. Ofcom considers that this is not the case in relation to Kingston.
- The conditions are proportionate to what they are intended to achieve. Publication is only required where wholesale remedies have been imposed and where the demand for the product or service is sufficient that the data provided would be statistically meaningful.
- The conditions provide transparency in relation to what they are intended to achieve because the objective of the conditions relates to the problem identified in the market, and *inter alia* they are aimed at ensuring non-discrimination specifically in relation to the quality of service provided by the dominant provider in respect of its key business processes.

6.187 Ofcom has also had regard to its duties under section 4 of the Act, in particular the requirement to promote competition. Ofcom considers that its proposals promote competition amongst providers of electronic communications networks and services as the KPIs are designed to ensure that alternative communications providers have an equivalent opportunity to compete with BT.

6.188 In addition, Ofcom considers that imposition of these conditions satisfies the conditions set out in section 87(4) of the Communications Act. Overall, given the potential for the development of alternative facilities in the current market, Ofcom considers that it is fair and reasonable to impose these conditions in the interests of effective competition in the long term, as they will ensure that communications providers are able to make effective use of wholesale inputs and offer products based on leased lines in competition with BT. They will also assist monitoring of BT's compliance with a non discrimination condition. In addition they will address the goal of ensuring that services based on leased line components are provided throughout the UK by enabling communications providers to compete on comparable terms with BT at the retail level.

Wholesale traditional interface symmetric broadband origination regulation 9:
Requirement to publish technical information

6.189 Section 87(6)(c) of the Act authorises the setting of SMP services conditions requiring the dominant provider to publish, in such manner as Ofcom may direct, the terms and conditions on which it is willing to enter into an access contract. Section 87(6)(b) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information for the purpose of securing transparency.

6.190 Under the Condition 'Requirement to publish a reference offer', BT is obliged to publish a Reference Offer for Network Access, which amongst other things, contains a description of the Network Access to be provided, including technical characteristics; the location of the points of Network Access; and technical standards for Network Access. The Condition sets out the number of days within which a reference offer, or amendments to that reference offer, must be published. For example where BT amends its Reference Offer in respect of high bandwidth TISBO services it must publish an amended version 28 days before the amendment comes into effect. However, the Condition 'Requirement to publish technical information' sets out additional obligations to publish new technical information 90 days in advance of entering into a contract to provide the new Network Access, or amendments to existing technical terms and conditions 90 days before those amended terms and conditions come into effect.

6.191 As set out above, the information to be published under this Condition comprises new or amended technical characteristics (including information on network configuration where necessary to make effective use of the Network Access), locations of the points of Network Access and technical standards (including any usage restrictions and other security issues). Relevant information about network configuration is likely to include information about the function and connectivity of points of access, for example the connectivity of exchanges to end users and other exchanges.

6.192 The requirements in this Condition are important to ensure that communications providers to whom Network Access is being provided by BT are able to make effective use of that Network Access. Changes to technical information must be published in advance so that communications providers have sufficient time to prepare. For example, a competing provider may have to introduce new equipment or modify existing equipment to support a new or changed technical interface. Similarly, a competing provider may need to make changes to their network in order to support changes in the points of network access or configuration.

6.193 Ofcom's view is that 90 days is the minimum time that competing providers will need to modify their network to support a new or changed technical interfaces or support a new point of access or network configuration. Therefore, Ofcom concludes that in the market for wholesale TISBO services, BT must publish any new or modified technical characteristics, points of network access and technical standards not less than 90 days in advance of either BT entering into a contract to provide new Network Access or making technical changes to existing Network Access, unless Ofcom consents otherwise.

6.194 As explained above, Ofcom has concluded that CSH and ISH interconnection services can be considered as a technical area related to the markets where Ofcom has initially found SMP. Ofcom has also, therefore, applied this condition to the technical areas outlined above.

Responses to the draft notification – provision of technical information

6.195 No comments were received on this issue.

Conclusions – requirement to provide technical information

6.196 Having considered responses received in other market review consultations, in particular those received in response to the *Review of the Wholesale Broadband Access Markets*, Ofcom considers that there may be instances where BT, to meet its obligations under the condition to provide Network Access on reasonable request, should provide a period of longer than 90 days. For example, if BT were to make a major change to its technical terms and conditions, a period of more than the 90 day minimum notification period may be necessary.

6.197 Ofcom has, therefore, amended Conditions G8 and GG8 in Annex D to include a reference to publishing a notice "within a reasonable time period but not less than 90 days" before providing the new wholesale services or amending existing technical terms and conditions. Ofcom believes that 90 days is a practical standard period and notes that it is able and willing to consent to a shorter period in justified circumstances. Equally, where longer notice is reasonably required, it must be given.

Communications Act tests

6.198 Ofcom considers that the Condition meets the tests set out in the Act. Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom in imposing the Condition has considered all the Community requirements in sections 3 and 4 of the Act. In particular, Ofcom has considered the requirement to promote competition and to encourage service interoperability for the purpose of securing efficient and sustainable competition and the maximum benefits for consumers by ensuring that providers have sufficient notification of technical changes to BT's network to enable them compete, in accordance with sections 3(4)(b), 4(3), 4(7) and 4(8) of the Act.

6.199 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The condition is objectively justifiable in that it enables competing communications providers to make full and effective use of Network Access. It does not unduly discriminate in that it is imposed on BT and no other communications provider has SMP in these markets. It is proportionate in that 90 days is the minimum necessary to allow competing providers to modify their networks. It is transparent in that it is clear in its intention that BT should notify technical information as set out above.

6.200 Ofcom considers that imposing this obligation satisfies the conditions set out in section 87(4) of the Communications Act. Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition in the long term, by ensuring communications providers can make effective use of wholesale inputs and offer products based on these wholesale inputs in competition with BT. In addition it will address the goal of ensuring that services based on leased line components are provided throughout the UK. By requiring BT to provide advance notification of technical changes, communications providers will be able to better plan their businesses and relationships with their customers.

Consultation on interfaces

6.201 Current regulation on BT (licence condition 15) includes a requirement to consult on interfaces where so directed by Oftel, and subsequently Ofcom. This was to ensure that BT could not impose unnecessary costs on competing communications providers by specifying a proprietary interface.

6.202 However, Ofcom recognises that communications providers are constrained in their choice of interface by the standardised nature of most communications equipment. In addition, Ofcom believes that the scope for further modifications to traditional PSTN equipment, where BT was most likely to be able exert control over interface specifications, is likely to be limited in the future, as communications providers and equipment manufacturers increasingly look to other technologies.

6.203 Therefore, Ofcom now considers it unlikely that BT would be able to exert control over interfaces in a way that could have an adverse effect on competition. Consequently, Ofcom does not believe that imposing a condition requiring consultation on interfaces would be proportionate.

Wholesale traditional interface symmetric broadband origination regulation 10:
Obligations relating to requests for new network access

6.204 This condition is set in accordance with sections 87(3) and 87(5) as detailed above in relation to the condition relating to the provision of network access.

6.205 The draft notification summarised Ofcom's proposals for regulation of the statement of requirements ("SOR") process, following consultation with industry. The SOR process forms part of BT's obligation to provide Network Access where it has SMP. The SOR process and associated timescales are the same in all of these markets.

6.206 Ofcom considered that there was evidence in the markets in this review that BT's current SOR process was not working sufficiently well and that there was a need to improve BT's response to requests for network access. There was evidence from disputes referred to Oftel since April 2002 of instances where the introduction of new products and services had been delayed by the unavailability of feasibility studies and other information which Ofcom would normally expect to be collected during the SOR process. These disputes included, for example, *Software rearrangement - Energis Determination request*, Oftel case CW/00542/08/02; *Indirect access dispute between BT and Cable & Wireless*, CW/00590/01/03; *PPCs - request for Determination from Cable and Wireless*, CW/00514/04/02, *Dispute between THUS plc and BT about the IN dip retention charge for NTS and SurfTime calls to numbers on 1k blocks*, CW/00661/07/03.

6.207 Other communications providers need clarity and certainty about the SOR process. Clear guidelines from BT and the provision of necessary information for the purposes of making a request for Network Access should speed up the SOR process to the benefit of communications providers that require wholesale inputs from BT. An improved process will also enable BT to set a reasonable standard for requests and reject inadequate requests. It should also assist with the timely resolution of disputes, since the nature of the dispute should be clearer and it should be able to be brought in a more timely manner than at present. Accordingly, Ofcom considers that *ex ante* regulation of BT's SOR process is appropriate. Ofcom considers that the condition should also apply to the AISBO market and the wholesale trunk segments market.

6.208 Ofcom considers that the process should apply to modifications to existing Network Access as well as to completely new forms of Network Access. Ofcom would not however expect the process to apply to requests for standard Network Access products offered by BT where the requesting electronic communications provider does not already have the product. Ofcom also notes that requests for modifications on existing Network Access are likely to be less complex and should be able to be dealt with relatively quickly.

6.209 The regulated process set out is designed to accompany the obligation for BT to meet all reasonable requests for access in specific markets. Ofcom acknowledges that a request for a wholesale product could take the form of a request for a new pricing structure or amount to the provision of certain billing information. Therefore, for the avoidance of doubt, Ofcom considers that the regulated SOR process does apply to modifications of this type where BT has an obligation to meet all reasonable requests. The process does not cover general requests, not associated with specific requests for access, such as requests to modify general contractual terms.

6.210 Ofcom has concluded that CSH and ISH interconnection services can be considered as a technical area related to the markets where Ofcom has found SMP. Ofcom has also therefore applied this condition to the technical areas outlined above.

Responses to the draft notification – SORs

6.211 BT suggested that where concurrent SORs were received for substantially the same product there would be major resource implications for BT. BT advised that in such circumstances it would seek to work with individual communications providers to negotiate a phased approach to the assessment of the SORs.

6.212 Ofcom acknowledges BT's comments on this issue and would be prepared to facilitate discussions between BT and other communications providers where appropriate.

Conclusions – SORs

6.213 Having considered the responses to the draft notification, Ofcom considers it appropriate to impose the conditions in G9 and GG9 in Annex D. The conditions remain in the same terms as those previously consulted on.

Communications Act tests

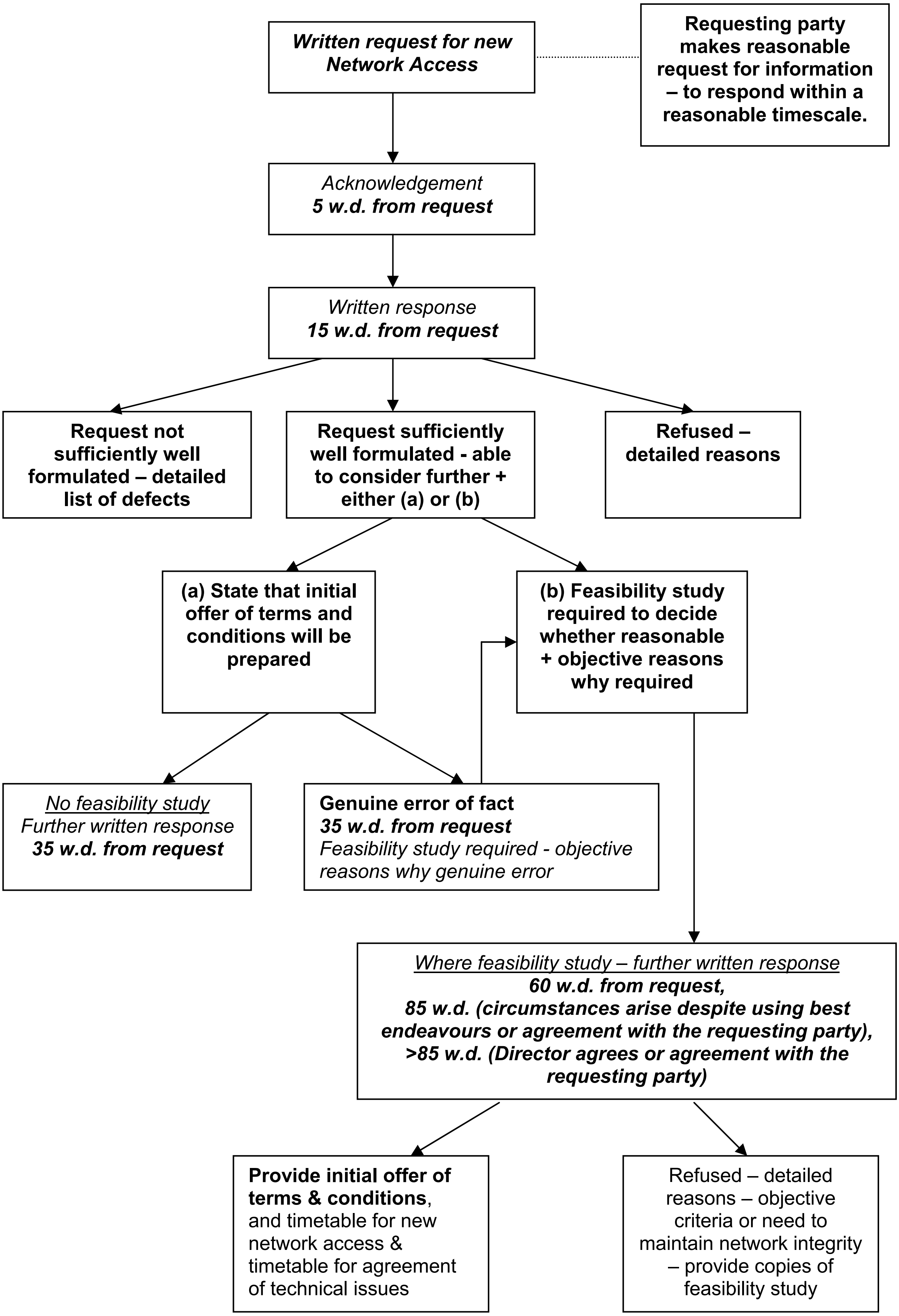
6.214 Ofcom has imposed this condition pursuant to section 87(3) and 87(5) of the Act. Specifically, under section 87(5)(a) Ofcom considers that the provisions of this condition will help to secure fairness and reasonableness in the way in which requests for Network Access are made and responded to, by adding clarity and robustness to the process. In addition, under section 87(5)(b) Ofcom considers that the provisions will help to secure that the obligations contained within the condition are complied with, within the reasonable periods and at the times set out in the condition.

6.215 Ofcom has considered the matters set out in section 87(4). In particular, under section 87(4)(d) Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition in the long term, as reductions in delays in provision of new products will ensure that communications providers are able to make effective use of BT's network in competition with BT.

6.216 Ofcom has also considered the test for setting conditions set out in section 47 of the Act, namely that the condition is objectively justifiable, does not unduly discriminate, is proportionate and transparent. Ofcom considers that the condition meets these tests. In particular, it is objectively justifiable in the light of the deficiencies in the current process which lead to the delays and lack of clarity discussed above. It would not discriminate unduly against BT because BT has been found to have a position of SMP in this market and is therefore able to exploit this position to the potential detriment of its competitors both in this market and in downstream markets. The condition is proportionate since without it being put in place, BT's competitors would continue to experience problems of the nature already described. Furthermore, it is transparent in its intention to ensure that BT has a reasonable process for dealing with requests for new Network Access.

6.217 Finally, under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom, in imposing this condition, has considered all the Community requirements set out in sections 3 and 4 of the Act. In particular, under sections 4(7) and 4(8) Ofcom considers that the provisions help secure efficiency and sustainable competition in the markets in this review. They help to ensure efficiency and sustainable competition by enabling other communications providers to make effective use of BT's network in order to offer their own products, in accordance with sections 3(4)(b) and 4(3) of the Act.

6.218 A summary of Ofcom's conditions is as follows:



Wholesale traditional interface symmetric broadband origination regulation 11: Direction under general access obligation to supply PPCs subject to specific terms and conditions

6.219 The Phase I PPC Direction implemented specific obligations which have led to changes in BT's contract for PPCs. BT is now providing PPCs at various bandwidths on specified terms and conditions in accordance with the PPC Directions. The conditions set out by Oftel in these two Directions have been transposed into the contract between BT and other communications providers.

6.220 This Direction is made under the general access obligation for the wholesale TISBO markets. The Direction specifies regulations for PPCs, which carry forward the existing PPC requirements brought into force by the PPC Directions, as set out within sub-sections below. The imposition of price controls for PPCs is considered separately above.

6.221 BT has been found to have SMP in this market. The requirement to supply PPCs on specific terms will encourage competition in retail markets by enabling communications providers to supply end-to-end leased line products and value added business products in competition with BT. An obligation to provide PPCs on specified terms and conditions will provide more certainty than sole application of a more general obligation to provide low and high bandwidth TISBO services, as BT will be required to continue to provide products to a detailed specification agreed by communications providers.

6.222 Carrying forward this recently introduced regulation will add to the certainty in this market provided by continuity of the market conditions under which BT and other communications providers currently operate. This will help to encourage appropriate investment decisions which will maximise the level of competition in this and related retail markets. Oftel recently considered the justification for requiring BT to supply a number of specific services and found them to be fully justified. There has been no subsequent material change in market conditions.

6.223 As explained above, Ofcom has concluded that CSH and ISH interconnection services can be considered as a technical area related to the markets where Ofcom has found SMP. Ofcom has also therefore applied this Direction to the technical areas outlined above. This includes the ISH extension and STM-1 point of handover ISH and CSH products discussed below.

6.224 Implementation of this PPC regulation is in line with the Commission's SMP Guidelines, which state at paragraph 119 that "in the early stages of the new framework, the Commission would not expect NRAs to withdraw existing regulatory obligations which have been designed to address legitimate regulatory needs which remain relevant, without presenting clear evidence that those obligations have achieved their purpose and are no longer required since competition is deemed to be effective".

6.225 It could be argued that Ofcom should use its powers under the Competition Act to resolve complaints concerning provision of PPCs. However, Ofcom has recently imposed fully justified rules and there has been no significant change in underlying market conditions to warrant their removal. If BT were to depart in any way from those rules, there would inevitably be a further complaint which would be bound to lead to their re-imposition. This would tend to destabilise the market and waste resources.

6.226 Ofcom therefore considers that it is necessary to carry forward the appropriate existing PPC-specific regulation. Ofcom is therefore imposing a Direction under the access obligations requiring the supply of PPCs subject to the terms and conditions set out in the PPC Directions. Ofcom considers that PPCs should, as set out in the Phase 1 and Phase 2 PPC Directions, be supplied subject to the following requirements.

11A: Technical and paper migrations and migration issues

6.227 Ofcom is requiring BT to migrate any retail circuits to PPCs providing the retail circuits were installed before 23 December 2002. This includes retail circuits requiring technical modifications that may have been carried out after 1 August 2001.

11B: ISH extension

6.228 Ofcom is requiring BT to provide an ISH extension product as specified in the Direction set out in Annex E, on a non discriminatory and cost oriented basis.

11C: PPC variant of Genus circuits

6.229 Ofcom is requiring BT to provide a Genus variant 1 PPC.

11D: Forecasting requirements and revisions and forecasting penalties

6.230 Ofcom is requiring BT to set out its forecasting requirements and penalties as specified in the Direction set out in Annex E. This will ensure that appropriate penalties are imposed by BT and will maximise the flexibility for adjustment of forecasts from one period to the next.

11E: STM-1 ISH and CSH handover

6.231 Ofcom is requiring BT to provide STM-1 point of handover ISH and CSH products at non discriminatory and cost oriented prices.

11F: Service Level Agreement

6.232 Ofcom is requiring BT to offer a comprehensive service level agreement covering ordering, supply and repair of equipment and circuits, in order to ensure the following:

- lead times for delivery and repair which are in keeping with European best practice;
- adequate compensation payments which reflect potential losses and provide a proper incentive for BT to act efficiently;
- clarity in the processes for ordering and provisioning avoiding the scope for misunderstanding and inefficient behaviour;
- adequate measures for dealing with the disparities in market position between BT and other communications providers; and
- clauses which reduce ambiguity and strengthen certainty for communications providers.

Responses to the draft notification – PPC Direction

6.233 BT questioned why the PPC forecasting requirement had been split into four separate categories from the three categories contained in the PPC Directions. BT suggested that this would result in the need for major systems changes and have operational impacts.

6.234 Ofcom has had to increase the number of PPC forecasting categories due to the bandwidth parameters of the markets defined. The three forecasting categories identified in the PPC Phase 1 Direction were sub-1Mbit/s, 1Mbit/s-45Mbit/s and 155Mbit/s and above. The second of these categories, however, cuts across the breakpoint of the low and high bandwidth TISBO markets. Given that SMP obligations can only be imposed on a market-by-market basis where SMP has been identified, Ofcom has had to split the 1Mbit/s-45Mbit/s category into 1Mbit/s-2Mbit/s (8Mbit/s circuits are not available for new supply) and over 8Mbit/s-45Mbit/s categories. Similarly, the third category has now been limited to just 155Mbit/s circuits as BT has not been designated as having SMP at higher bandwidths.

6.235 The forecast categories form the widest set of categories that BT can require communications providers to provide forecasts for. They were set following concern that the forecast categories proposed by BT prior to the PPC Phase 1 Direction were overly onerous and imposed an unreasonable burden on communications providers due to the level of granularity required. If BT wishes to continue only to require communications providers to provide forecasts based on the categories in the PPC Phase 1 Direction, i.e. effectively merging two of the four categories, then Ofcom considers that this would comply with the terms of the Directions in Annex E as the categories requested will be no narrower than those specified in the Directions. The Directions in Annex E have been slightly amended to reflect this.

6.236 BT also sought clarification on PPC migration dates and why the date of 24 July 2004 had been used in the Directions. BT further suggested that the wording of the Directions in Annex E should take account of amendments to the Cancellation Threshold agreed at the industry contract forum.

6.237 Ofcom has amended the relevant paragraphs in the Directions so that they now refer to the date of publication of the Directions and not 24 July 2003. Ofcom considers that these paragraphs should be maintained on an open-ended basis in order to deal effectively with new wholesale products introduced by BT at some point in the future – third parties should, in Ofcom's opinion, be able to migrate to such products within a reasonable period without incurring any penalty.

6.238 Ofcom has amended wording of the Directions in Annex E to take account of amendments to the Cancellation Threshold agreed at the industry contract forum.

6.239 BT sought clarification on the implementation period of the Directions, suggesting that where additional requirements had been inserted into the Directions, as compared with the PPC and LLU Directions made under the outgoing regulatory regime, longer implementation timescales would be needed.

6.240 In light of the minor amendments to the proposals contained in the December 2003 document, Ofcom does not consider that lengthy implementation timescales will be required by BT. Amendments to the forecasting categories mean that there is no need for BT to alter its existing forecast categories. Similarly, Ofcom's decision to remove the requirement for BT to publish reports on 'reasons for rejecting orders', 'reasons for faults' and 'reasons for any Committed Delivery Dates beginning 10 working days later than the relevant Requisite Period' (see paragraphs 6.273 below) reduces the need for system development in this respect. The number of other new requirements are few and relatively uncomplicated and Ofcom considers that they could effectively be implemented by the time of the next quarterly reports i.e. those reports covering the period July-September 2004.

Conclusions – PPC Direction

6.241 Having considered the consultation responses Ofcom has imposed the Direction under condition G1, set out in Annex E. This Direction remains in broadly the same terms as the Direction previously consulted on, other than the changes outlined above.

Communications Act tests

6.242 Ofcom considers that the Direction meets the tests set out in the Act.

6.243 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4 of the Act. In particular, the Direction encourages the provision of network access and service interoperability for the purpose of efficiency and sustainable competition in the markets for electronic communications networks, electronic communications services and associated facilities, in accordance with sections 4(7) and 4(8). Ensuring that wholesale services are provided on reasonable terms promotes competition in downstream markets. The forecasting and forecasting penalty requirements protect communications providers against excessive penalties and allow BT a sufficient level of certainty to ensure that it is able to continue to provide network access in an efficient manner. A service level agreement promotes the interests of business consumers by ensuring that products are supplied on reasonable, transparent and consistent terms and conditions.

6.244 Ofcom considers that the Direction satisfies the tests set out in section 49(2) of the Act. It is objectively justifiable, in that it relates to the need to ensure that competition develops to the benefit of consumers. It does not discriminate in that any provider of electronic communications networks, services or associated facilities can request access from a dominant provider. It does not discriminate against BT because BT has been found to hold a position of SMP in this market, and as such is in a particular position to exploit its advantages were this regulation not to be implemented. It is proportionate, since its requirements are technically feasible. The Direction is set out in a transparent form in Annex E. Ofcom therefore considers that the Direction meets the requirement of transparency set out in the Act.

Wholesale traditional interface symmetric broadband origination regulation 12:
Direction under cost orientation condition covering certain pricing matters relating to PPCs and LLU backhaul

6.245 The Phase 1 PPC Direction implemented specific obligations which have led to changes in BT's contract for PPCs. BT is now providing PPCs at various bandwidths on specified terms and conditions in accordance with the PPC Directions. The conditions set out by Oftel in these two Directions have been transposed into the contract between BT and other communications providers.

6.246 This Direction is made under the cost orientation condition for the wholesale TISBO market. The Direction requires BT to provide certain PPC and LLU backhaul products and services according to certain pricing conditions. It carries forward existing PPC requirements brought into force by the PPC Directions, as set out within sub-sections below. The imposition of price controls for PPCs is considered separately above.

6.247 BT has been found to have SMP in this market. The requirement to supply PPCs on specific terms will encourage competition in retail markets by enabling other communications providers to supply end-to-end leased line products and value added business products in competition with BT. Carrying forward this recently introduced regulation will add to the certainty in this market provided by continuity of the market conditions under which BT and other communications providers operate. This will help to encourage appropriate investment decisions which will maximise the level of competition in this and related retail markets. Oftel recently considered the justification for requiring BT to supply a number of specific services and found them to be fully justified. There has been no subsequent material change in market conditions.

6.248 Implementation of this PPC regulation is in line with the Commission’s SMP Guidelines, which state at paragraph 119 that *“in the early stages of the new framework, the Commission would not expect NRAs to withdraw existing regulatory obligations which have been designed to address legitimate regulatory needs which remain relevant, without presenting clear evidence that those obligations have achieved their purpose and are no longer required since competition is deemed to be effective”*.

12A: Charges for capacity on third party customer infrastructure

6.249 Ofcom is imposing maximum charges for connection of subsequent PPCs where a third party already has a PPC connected to third party customer infrastructure which was in situ before 1 August 2001.

12B: Charge for change of speed or interface

6.250 Ofcom is imposing a maximum charge for changes of speed or interface at a wholesale level.

12C: Charges for reclassification of BT Retail Private Circuits

6.251 Ofcom is imposing a maximum reclassification charge in connection with migrated circuits.

12D: Charges for failed migration orders

6.252 Ofcom is imposing a maximum charge for failed migration orders.

12E: Infrastructure tariff conversion charges

6.253 Ofcom is imposing conditions and maximum charges relating to infrastructure tariff conversion.

12F: Equipment re-use

6.254 Ofcom is requiring BT to make equipment re-use at the third party customer end available to communications providers at cost oriented prices, so that they can re-use either their own or other providers' equipment, at the same or a different site, either immediately or after a reasonable period. This will avoid unnecessary duplication of resources and reduce potential barriers to entry.

12G: Cost orientation of LLU backhaul prices

6.255 Ofcom is requiring that charges for LLU backhaul services should be consistent with the charges applicable to those elements which are common to LLU backhaul and PPCs.

Responses to the draft notification – Direction on cost orientation issues

6.256 The alignment of PPC and LLU backhaul prices was welcomed by communication providers, though it was emphasised that LLU backhaul prices should reflect the fact that there is no local end on an LLU backhaul circuit, unlike on a PPC.

6.257 Ofcom explicitly recognises that LLU backhaul prices should only cover costs which are relevant to the product provided. The Direction in Annex E below makes clear that BT *"… shall ensure that its charges for LLU Backhaul Services … are consistent with its charges for those elements which are common to LLU Backhaul and Partial Private circuits"*.

Conclusions – Direction under cost orientation condition

6.258 Having considered the consultation responses Ofcom has imposed the Direction under condition G3, set out in Annex E. This Direction remains in broadly the same terms as the Direction previously consulted on.

Communications Act tests

6.259 Ofcom considers that the Direction meets the tests set out in the Act. Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, the Direction encourages the provision of network access and service interoperability for the purpose of efficiency and sustainable competition in the markets for electronic communications networks, electronic communications services and associated facilities, in accordance with sections 4(7) and 4(8). Ensuring that wholesale services are provided on reasonable terms will promote competition in downstream markets. Equipment re-use will maximise efficiency and sustainable competition in this market, in accordance with sections 3(4)(b) and 4(3) of the Act.

6.260 Ofcom considers that the Direction satisfies the tests set out in section 49(2) of the Act. It is objectively justifiable, in that it relates to the need to ensure that competition develops to the benefit of consumers. It does not discriminate in that any provider of electronic communications networks, services or associated facilities can request access from a dominant provider. It does not discriminate against BT because BT has been found to hold a position of SMP in this market, and as such is in a particular position to exploit its advantages were this regulation not to be implemented. It is proportionate, since its requirements are technically feasible. The

Direction is set out in a transparent form in Annex E. Ofcom therefore considers that the Direction meets the requirement of transparency set out in the Act.

Wholesale traditional interface symmetric broadband origination regulation 13:
Direction under quality of service condition requiring BT to provide specific information in respect of PPCs

6.261 BT is obliged by the PPC Phase 2 Direction to provide various information in respect of PPC quality of service. This Direction has been made under the Quality of Service condition for the wholesale TISBO market discussed above and carries forward the bulk of this regulation.

6.262 BT has been found to have SMP in this market. The requirement to publish specific information relating to the supply and repair of PPCs will encourage competition in retail markets for end-to-end leased line products by giving communications providers confidence in the quality of the wholesale input products supplied to them by BT. Putting this *ex ante* obligation in place will help to avoid the possibility of being required to resolve multiple and successive complaints, creating a large workload for Ofcom which would partially duplicate work already undertaken for the Phase 1 and 2 PPC Directions.

6.263 Carrying forward this recently introduced regulation will add to the certainty in this market provided by continuity of the market conditions under which BT and other communications providers currently operate. This will help to encourage appropriate investment decisions which will maximise the level of competition in this and related retail markets.

6.264 As explained above, Ofcom has concluded that CSH and ISH interconnection services (including the ISH extension and STM-1 point of handover ISH and CSH products discussed above) can be considered as a technical area related to the markets where Ofcom has found SMP. Ofcom has also therefore applied this Direction to the technical areas outlined above.

6.265 Implementation of this PPC regulation is also in line with the Commission's SMP Guidelines, which state at paragraph 119 that:

"…in the early stages of the new framework, the Commission would not expect NRAs to withdraw existing regulatory obligations which have been designed to address legitimate regulatory needs which remain relevant, without presenting clear evidence that those obligations have achieved their purpose and are no longer required since competition is deemed to be effective".

6.266 BT is obliged to publish on its website in an easily accessible form quarterly statistics on its performance with respect to Committed Delivery Dates, Requisite Periods, Reduced Requisite Periods, Firm Offer Confirmation ("FOC") Receipt Intervals, repair, availability of service and reasons for "stopping the clock". These statistics shall include BT's performance with respect to its retail arm, and with respect to each customer. The information with respect to different communications providers shall be presented in such a way that the identity of a communications provider cannot easily be worked out from that information.

6.267 BT is also obliged to publish quarterly statistics on its performance with respect to the list of information below, by reference to:

- all communications providers (aggregated); and
- each communications provider (separately). The information with respect to other communications providers shall be presented in such a way that the identity of a communications provider cannot easily be worked out from that information.

6.268 *Order expedite related*

- Percentage of a communications provider's previous month's orders having Committed Delivery Dates quoted within 50% of Requisite Periods, for applicable circuits only

6.269 *Ordering and provisioning times*

- number and percentage of instances where communications provider exceeds FOC Acceptance Interval for circuits, split by bandwidth;
- number and percentage of instances where communications provider exceeds FOC Acceptance Interval for network infrastructure;
- average amount by which communications provider exceeds FOC Acceptance Interval for circuits, split by bandwidth;
- average amount by which communications provider exceeds FOC Acceptance Interval for network infrastructure;
- number and percentage of order rejections for circuits;
- number and percentage of order rejections for network infrastructure;
- list of reasons for order rejection; and
- list of reasons for any Committed Delivery Dates being over 10 working days later than the relevant requisite periods.

6.270 *Fault management*

- mean response time for circuits and network infrastructure;
- new installation fault report rate for circuits; and
- list of reasons for faults.

Responses to the draft notification – Direction on service quality issues

6.271 BT sought clarification as to why the proposed remedies in the draft direction differed from those in the PPC Phase 2 Direction. BT is currently only required to provide reports on 'reasons for rejecting orders', 'reasons for faults' and 'reasons for any Committed Delivery Dates beginning 10 working days later than the relevant Requisite Period' when requested to do so by Ofcom. The draft notification proposed that BT provide these reports on a quarterly basis. BT estimated that it would take 3-4 months and lead to significant development cost for it to put in place an automated process for delivering these reports.

6.272 Ofcom remains of the view that it is appropriate for BT to be able to provide reports on all the categories listed in paragraphs 6.268 to 6.270 above, including reports on 'reasons for rejecting orders', 'reasons for faults' and 'reasons for any Committed Delivery Dates beginning 10 working days later than the relevant Requisite Period' ("the new reports"). This information would be essential to Ofcom if it receives complaints from communications providers about discrimination, as it may do from time to time.

6.273 However, having taken into account BT's comments on the costs and timescales for implementing delivery of the new reports and the fact that it has not previously requested the provision of such information despite having the ability to do so, Ofcom has concluded that it would be more proportionate to require BT to collect the necessary information so as to be able to provide the new reports if requested, rather than having to publish them on a quarterly basis. Ofcom has therefore amended the Condition to reflect its conclusion that BT be required to collect the relevant data so as to be able to provide reports on 'reasons for rejecting orders', 'reasons for faults' and 'reasons for any Committed Delivery Dates beginning 10 working days later than the relevant Requisite Period' if requested.

6.274 BT sought clarification as to whether the 'stop the clock' report required under the PPC Direction is the same as the proposed 'list of incidences of circumstances beyond BT's reasonable control' report in the draft notification.

6.275 Ofcom can confirm that the 'stop the clock' report required under the PPC Direction is the same as the 'list of incidences of circumstances beyond BT's reasonable control' report in the notification.

6.276 BT asked why individual reports were required for each communications provider previously a single anonymised aggregated report was required. BT suggests that the publication of such reports would be costly due to the need to put in place and ensure security protection for the individual communications provider data published on the website.

6.277 Ofcom considers that the key issue is that each communications provider has access to the reports that BT prepares and is able to compare the performance of BT's provision to them as against BT's provision to other communications providers and to BT's retail business. The method by which this information is provided is of less importance, providing it is reliable and timely. Ofcom is therefore prepared to allow BT to continue to provide these reports by e-mail, rather than incurring the additional cost of putting in place a password-protected website, providing that BT keeps up-to-date the contact details that communications providers provide it with of the relevant people within their organisations who the reports should be sent through to. The aggregated report should continue to be published on the website as it will enable potential new entrants into the market to properly plan their businesses.

6.278 Ofcom considers that a single aggregated report is insufficient to allow a communications provider to properly assess the provision of PPCs to itself and it does not allow Ofcom to assess whether any individual communications providers are continually receiving a lower quality of service than their competitors.

6.279 BT sought clarification as to whether the retail comparators required were the same as those under the PPC Phase 2 Direction as some PPC KPI measures have no sensible retail equivalent.

6.280 Ofcom recognises that some PPC KPI measures have no sensible retail equivalent and can confirm that the retail comparators required are the same as those under the PPC Phase 2 Direction.

6.281 BT argued that publication of BT Retail comparators for some KPI measures will potentially damage its ability to compete as it could, for example, allow communications providers to make unfair or inappropriate comparisons in competitive tenders. BT suggested that instead of publishing the figures it provide them to Ofcom on a confidential basis. BT has suggested that the provision of an aggregated report should be sufficient to enable communications providers to assess whether they are receiving the same treatment as BT Retail.

6.282 Ofcom remains of the view that it is necessary for BT to publish BT Retail comparators. Without such comparators, communications providers will be unable to assess whether BT Retail is receiving preferential treatment or not in the provision of symmetric broadband origination. An aggregated report does not provide sufficient granularity of the performance of one specific communications provider within the aggregated total and so would not allow a communications provider to properly compare the level of service they receive compared to BT Retail.

6.283 Ofcom does not consider that the publication of ordering, provisioning and fault management data will place BT Retail at a competitive disadvantage. The data relates only to wholesale products, rather than the retail leased lines products that communications providers will be tendering for the provision of. In addition, by allowing BT to send the reports to communications providers by e-mail rather than publishing them on the website, Ofcom considers that the opportunity for communications providers to make reference to the data when tendering is reduced.

Conclusions – Direction under quality of service condition

6.284 Having considered the consultation responses Ofcom has imposed the Direction under condition G7, set out in Annex E. This Direction remains in the same terms as the Direction previously consulted on, subject to the amendments described above.

Communications Act tests

6.285 Ofcom considers that the Direction meets the tests set out in the Act.

6.286 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, the Direction will promote competition in relation to the provision of electronic communications networks and electronic communications services, and it will encourage the provision of service interoperability for the purpose of securing efficiency and sustainable competition in the markets for electronic communications networks, electronic communications services and associated facilities, in accordance with sections 4(7) and 4(8). It promotes competition and thereby the interests of end users in downstream markets, by making it easier to monitor any attempt by BT to discriminate in the quality of service it provides to customers, in accordance with sections 3(4)(b) and 4(3) of the Act.

6.287 Ofcom considers that the Direction satisfies the tests set out in section 49(2) of the Act. It is objectively justifiable, in that it relates to the need to ensure that competition develops to the benefit of consumers. It does not discriminate in that any provider of electronic communications networks, services or associated facilities can request access from a dominant provider. It does not discriminate against BT because BT has been found to hold a position of SMP in this market, and as such is in a particular position to exploit its advantages were this regulation not to be implemented. It is proportionate, since it is feasible for BT to provide the information. The Direction is set out in a transparent form in Annex E. Ofcom therefore considers that the Direction meets the requirement of transparency set out in the Act.

Wholesale traditional interface symmetric broadband origination regulation 14:

Direction under general access condition requiring BT to provide RBS backhaul circuits

6.288 This requires BT to provide particular types of TISBO services, known as RBS backhaul circuits, upon request. Such links are used by mobile phone companies to connect their radio base stations to their networks. A RBS backhaul circuit provides transparent transmission capacity at a range of bandwidths, typically N*64kbit/s and 2Mbit/s between a mobile communications provider's premises and its mobile switching centre.

6.289 Ofcom considers that the provision of RBS backhaul circuits is crucial to the operation of mobile communications providers' networks. Provision of these circuits at wholesale prices could therefore promote greater network efficiency, and thus facilitate innovation and investment for the provision of mobile telephony. Ofcom also believes the reduction in mobile communications providers' costs in this area could bring resultant benefits to end users. The condition could provide multiple, additional benefits for end users in terms of price, products and service.

6.290 It might be argued that a general obligation on BT to supply TISBO services (see above) would give Ofcom the scope to require BT to provide these products if necessary. However, Ofcom believes it is essential to require BT specifically to provide these products for the following reasons:

- it will provide greater certainty and encourage appropriate investment decisions, since BT will be required to provide these particular products as set out in the Direction; and
- it will help to avoid the possibility of multiple and successive complaints, thereby reducing the regulatory burden.

6.291 Ofcom therefore considers that it is necessary to put in place an obligation to supply RBS backhaul link products, in addition to the general access obligation (see above). Ofcom is therefore making a Direction under the access obligation imposed for the wholesale TISBO market, requiring the supply of RBS backhaul link products. It should be noted that these requirements have been merged into a single Direction under the access obligation, along with requirements for BT to provide PPCs and LLU backhaul over TISBO.

Responses to the draft notification – Direction on RBS backhaul circuits

6.292 Several communications providers, including BT, suggested that it was inappropriate for Ofcom to mandate the provision of a cost oriented RBS backhaul product when the potential already exists for communications providers to compete with BT in the provision of RBS backhaul. It was suggested that the only factor currently preventing competition was the discount schemes offered by BT, such as the Netstream discount scheme, which it was alleged were anti-competitive. By mandating the provision by BT of RBS backhaul, it was suggested that Ofcom was removing the incentives on communications providers to build networks, thereby jeopardising infrastructure investment, contrary to Ofcom's Communications Act duties.

6.293 BT further suggested that no evidence had been provided to show that RBS backhaul was not competitively priced and claimed that mobile communications providers have strong countervailing buyer power as well as being able to self-supply RBS backhaul. BT argued that this indicated that the supply of RBS Backhaul does not share the same competitive conditions as other TISBO products and that BT does not have SMP in supplying RBS backhaul.

6.294 As Ofcom has noted in Chapter 2 above, the RBS backhaul product mandated by Ofcom is technically the same as a PPC. The only reason that other fixed communications network providers would be able to provide RBS backhaul in sufficient volumes and with sufficient geographic spread so as to compete with BT would be through the use of PPCs.

6.295 Ofcom considers that it would be unfair to discriminate against mobile communications network providers by denying them the right to use circuits on similar terms to those available to fixed communications network providers. Potentially, this could distort competition in downstream markets, notably those for mobile telephony, adversely affecting end users.

Conclusions – Direction requiring provision of RBS backhaul circuits

6.296 Having considered the responses to the draft notification, Ofcom has imposed the Direction under condition G1, set out in Annex E. This Direction remains in broadly the same terms as the Direction previously consulted on.

Communications Act tests

6.297 Ofcom considers that the Direction meets the tests set out in the Act.

6.298 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, the Direction, by requiring BT to supply these products, encourages the provision of network access and service interoperability by allowing communications providers access to products that allow them to compete with BT at the retail level for the purpose of efficiency and sustainable competition in the markets for electronic communications networks, electronic communications services and associated facilities, in accordance with sections 4(7) and 4(8). In addition, as BT is a dominant communications provider in this market, requiring it to make this product available will ensure that competition in downstream markets is promoted, which will in turn promote the interests of competitors and end users, in accordance with sections 3(4)(b) and 4(3) of the Act.

6.299 Ofcom considers that the Direction satisfies the tests set out in section 49(2) of the Act. It is objectively justifiable, in that it relates to the need to ensure that competition develops to the benefit of consumers. It does not discriminate in that any provider of electronic communications networks, services or associated facilities can request access from a dominant provider. It does not discriminate against BT because BT has been found to hold a position of SMP in this market, and as such is in a particular position to exploit its advantages were this regulation not to be implemented. It is proportionate, since its requirements are technically feasible. The Direction is set out in a transparent form in Annex E. Ofcom therefore considers that the obligation meets the requirement of transparency set out in the Act.

Wholesale traditional interface symmetric broadband origination regulation 15:
Direction under general access condition requiring BT to supply LLU backhaul

6.300 Under the LLU backhaul Direction (*Final direction on LLU backhaul services*, 8 August 2002), BT is currently obliged to provide backhaul on reasonable terms (including service level agreements and compensation), at cost oriented prices and at prices consistent with PPCs.

6.301 As discussed in the backhaul Direction, backhaul is a similar product to PPCs and therefore consistency of approach is needed. Ofcom's market definitions have reflected the close links between backhaul and PPC products. LLU backhaul links and PPC TISBO are also defined as being in the same market.

6.302 In order to carry over the full detail of the LLU backhaul Direction Ofcom has imposed an obligation to provide SLAs and compensation arrangements.

6.303 BT has been identified as having SMP in this market. In the absence of an obligation to supply backhaul BT would not have any incentive to do so. This would reduce potential for competition by LLU communications providers.

6.304 Carrying forward this recently introduced piece of regulation will add to the certainty in this market provided by continuity of the market conditions under which BT and other communications providers currently operate. This will help to encourage appropriate investment decisions which will maximise the level of competition in this and related retail markets.

6.305 It might be argued that BT would be required to provide LLU backhaul under the terms of a general obligation to provide access (see above) so a specific obligation is not necessary. However, Ofcom believes it is essential to require BT specifically to provide these products for the following reasons:

- it will provide continuity by carrying forward recently introduced regulation;
- it will provide greater certainty and encourage appropriate investment decisions, since BT will be required to continue to provide these particular products as set out in the Direction; and
- it will help to avoid the possibility of multiple and successive complaints, thereby reducing the regulatory burden.

6.306 Ofcom therefore considers that it is necessary to put in place an obligation to supply LLU backhaul, in addition to the general access obligation (see above). Ofcom is therefore imposing a Direction under the access obligation for the wholesale TISBO market, requiring the supply of LLU backhaul. It should be noted that these requirements have been merged into a single Direction under the access obligation, along with requirements for BT to provide PPCs and RBS backhaul.

6.307 Implementation of this regulation is also in line with the Commission's SMP Guidelines, which state at paragraph 119 that *"in the early stages of the new framework, the Commission would not expect NRAs to withdraw existing regulatory obligations which have been designed to address legitimate regulatory needs which remain relevant, without presenting clear evidence that those obligations have achieved their purpose and are no longer required since competition is deemed to be effective"*.

Responses to the draft notification – LLU backhaul Direction

6.308 It was suggested by one communications provider that as the concept of LLU was to allow cost based access to the lowest network elements required, that the provision of dark fibre was an appropriate remedy for the provision of LLU backhaul.

6.309 As Ofcom has explained in Chapter 2, dark fibre falls outside the scope of this market review document. BT has not been determined to have SMP in any market for dark fibre (nor has such a market even been defined) and as such no obligation to provide dark fibre can be imposed on BT. Ofcom considers that the LLU backhaul product detailed in the Direction in Annex E is the appropriate product to require BT to provide in order to meet the needs of communications providers engaged in local loop unbundling.

6.310 It was further suggested that the same flexible commercial arrangements are needed for LLU backhaul as are currently made available for PPC products, such as a spread connection facility.

6.311 The flexible commercial arrangements identified by the communications provider as being available for PPCs did not form part of the original LLU backhaul Direction and no assessment has been carried out by Ofcom as to whether it is reasonable or not to require BT to provide them in relation to LLU backhaul. They have not, therefore, been included in the Direction set out in Annex E. Ofcom does however note that LLU backhaul and PPCs fall within the same market and that it would need to consider whether, in light of the non-discrimination obligation in Annex D, it is acceptable for BT not to offer the same commercial arrangements for LLU backhaul as for PPCs if a complaint were received on the issue.

Conclusions – Direction requiring supply of LLU backhaul circuits

6.312 Having considered the responses to the draft notification, Ofcom has imposed the Direction under condition G1, set out in Annex E. This Direction remains in broadly the same terms as the Direction previously consulted on

Communications Act tests

6.313 Ofcom considers that the Direction (Direction under condition G1, set out in Annex E) meets the tests set out in the Act.

6.314 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, the Direction, by requiring BT to supply these products, encourages the provision of network access and service interoperability by allowing communications providers access to products that allow them to compete with BT at the retail level for the purpose of efficiency and sustainable competition in the markets for electronic communications networks, electronic communications services and associated facilities, in accordance with sections 4(7) and 4(8). In addition, as BT is a dominant communications provider in this market, requiring it to make this product available will ensure that competition in downstream markets is promoted, which will in turn promote the interests of competitors and end users, in accordance with sections 3(4)(b) and 4(3) of the Act.

6.315 Ofcom considers that the Direction satisfies the tests set out in section 49(2) of the Act. It is objectively justifiable, in that it relates to the need to ensure that competition develops to the benefit of consumers. It does not discriminate in that any provider of electronic communications networks, services or associated facilities can request access from a dominant provider. It does not discriminate against BT because BT has been found to hold a position of SMP in this market, and as such is in a particular position to exploit its advantages were this regulation not to be implemented. The Direction is set out in a transparent form in Annex E. Ofcom therefore considers that the obligation meets the requirement of transparency set out in the Act.

Wholesale traditional interface symmetric broadband origination markets: conclusion on regulation

6.316 Ofcom has concluded that BT has SMP in the low and high bandwidth TISBO markets, and that as a consequence the following regulatory measures should be imposed in these markets:

6.317 **Conditions**
1. a general obligation to provide access on reasonable request;
2. requirement not to unduly discriminate;
3. basis of charges obligations (cost orientation and a cost accounting system);
4. price control;
5. accounting separation obligation;
6. requirement to publish a reference offer;
7. an obligation to give 90 days' notice of changes to prices, terms and conditions for existing products;
8. an obligation to give 28 days' notice of the introduction of prices, terms and conditions for new products;
9. requirement to provide quality of service information;
10. requirement to publish technical information with 90 days' notice; and
11. obligations relating to requests for new network access.

Conditions of entitlement reflecting these measures are primarily set out in Annex D. Cost accounting and accounting separation conditions will be set out in a separate statement on accounting issues, to be published in due course.

6.318 **Directions**
- a Direction under the general access condition to provide PPCs at a range of bandwidths, RBS backhaul link products, and LLU backhaul products, subject to specific terms and conditions;
- a Direction under the cost orientation condition covering pricing matters relating to PPCs and LLU backhaul; and
- a Direction under the quality of service condition to require specific information in respect of PPCs.

Directions reflecting these measures are set out in Annex E.

6.319 Ofcom considers that the above measures are, both individually and taken as a whole, sufficient and proportionate given that there is minimal competition to BT in this market. The obligations for these markets are broadly similar to those currently applying, other than additional obligations relating to requests for new network access. As wholesale low and high bandwidth TISBO are an input for products in downstream retail markets, Ofcom needs to ensure that wholesale low and high bandwidth TISBO are available to communications providers to enable them to compete at a retail level.

Chapter 7

Regulatory remedies – SMP services conditions and Directions for BT's wholesale alternative interface symmetric broadband origination market

Introduction

7.1 This chapter sets out the remedies for the wholesale alternative interface symmetric broadband origination ("AISBO") market in the UK excluding Hull. The chapter begins with more general comments on the structure of the analysis and the aims of regulation, then moves on to set out the effect of, and Ofcom's reasons for, setting SMP services conditions in this market. It also explains how certain tests in the Act are satisfied.

7.2 The conditions in respect of BT are attached to the Notification in Annex D of this document, while the Direction is set out in Annex E.

Structure of the analysis

7.3 The Access Directive deals with wholesale relationships between providers of networks and services. It sets out the responsibilities of NRAs and the remedies that they can impose relating to access and interconnection. Certain specific remedies can only be imposed after a finding of SMP in a relevant market.

7.4 Section 87(1) of the Act provides that where Ofcom has made a determination that a person is dominant in the market reviewed, it shall set such SMP conditions as it considers are appropriate and as are authorised in the Act. This implements Article 8 of the Access Directive. Paragraphs 21 and 114 of the Commission's SMP Guidelines state that this means that Ofcom must impose one or more SMP conditions on a dominant provider. Furthermore, the European Commission states that the imposition of no SMP conditions on a dominant provider would be inconsistent with the new regime. Thus, Ofcom is under a mandatory obligation to impose at least one appropriate SMP condition on a dominant provider.

7.5 The SMP conditions which may be set can be summarised as follows:

(a) the provision of network access (Article 12 of the Access Directive, sections 87(3) and 87(5) of the Act);

(b) no undue discrimination (Article 10 of the Access Directive, section 87(6)(a) of the Act);

(c) transparency (Article 9 of the Access Directive sections 87(6)(b) and (c) of the Act);

(d) accounting separation (Article 11 of the Access Directive, section 87(7) of the Act);

(e) pricing, including, in particular, price controls (Article 13 of the Access Directive, section 87(9) of the Act);

(f) regulatory controls on retail markets (Article 17 of the Universal Service Directive, section 91 of the Act);
(g) regulatory controls with respect to leased lines (Article 18 of the Universal Service Directive, section 92 of the Act); and
(h) conditions with respect to carrier selection and pre-selection (Article 19 of the Universal Service Directive, section 90 of the Act).

7.6 The conditions listed at (a) to (e) and (g) above are relevant to this review of a wholesale market. Ofcom is required to assess which of these obligations are appropriate.

7.7 Oftel set out its intention to consider the appropriateness of SMP conditions in its regulatory option appraisal guidelines. However, Ofcom also notes Recital 27 of the Framework Directive which provides that *ex ante* regulation should only be imposed where there is not effective competition and where competition law remedies are not sufficient to address the problem. In this light, Ofcom considered this as part of its original assessment as to the appropriateness of SMP conditions, i.e. a situation whereby no regulation was imposed and whether it would be sufficient to rely on competition law alone.

Aims of regulation

7.8 In Chapter 3 and Annex B of this document, Ofcom explains how it has reached the conclusion that BT currently continues to hold a position of SMP in some of the UK (excluding Kingston upon Hull) markets relating to leased lines covered by this review.

7.9 Article 16 of the Framework Directive provides that “where an NRA determines that the relevant market is not effectively competitive, it shall identify undertakings with SMP on that market…and…shall on such undertakings impose appropriate specific regulatory obligations…”.

7.10 Regulation at the wholesale level is designed to address the problems which result from the existence of SMP in the relevant wholesale market. In particular it is designed to ensure that the SMP at the wholesale level does not restrict or distort competition in the relevant downstream markets or operate against the interests of consumers, for example through excessively high prices. Accordingly, Ofcom believes the wholesale regulation imposed in this chapter reflects its duties in section 4 of the Act. All of the conditions imposed by Ofcom will promote competition in the provision of retail leased lines and, as part of the implementation of the EC Directives referred to above, will assist with the development of the European internal market. In addition, each individual condition fulfils one or more of the other duties set out in section 4, as well as the tests set out in section 47 of the Act, as described in the discussion of the conditions below.

7.11 The application of regulation at the wholesale level also fits with the requirements of the Framework Directive, that NRAs take measures which are proportionate to the objective of encouraging efficient investment in infrastructure and promoting innovation. The introduction of regulation in wholesale markets will encourage communications providers to purchase wholesale products and combine them with their own networks where possible to create retail products in competition with BT’s retail leased lines products and other services. This is preferable to retail regulation alone, which would by contrast tend to favour the purchase of BT’s retail products and thereby lessen other communications providers’ investment in infrastructure and, through less competition, innovation.

7.12 It will also help to ensure that another objective of the Framework Directive is met, namely that NRAs take measures which are proportionate to the objective of ensuring users "derive maximum benefit in terms of choice, price and quality". Regulation at the wholesale level will, as noted above, help to increase the number of retail products available, and by increasing competition will help to ensure that price and quality are optimised.

7.13 In assessing the level of regulation to be applied in this market, Ofcom has also taken into account the Commission's SMP Guidelines which state at paragraph 15 that regulation should aim to promote an open and competitive market, and at paragraph 16 that *ex ante* regulations should be imposed to ensure that an SMP communications provider cannot use its market power to restrict or distort competition on the relevant market or leverage market power on to adjacent markets.

7.14 Ofcom has also taken account of Oftel's guidelines on the imposition of access obligations under the new EU Directives (*Imposing access obligations under the new EU Directives*, www.ofcom.org.uk/static/archive/oftel/publications/ind_guidelines/acce0902.htm, referred to in this document as 'Oftel's access guidelines'). These describe the circumstances in which Oftel would consider the imposition of wholesale access obligations to be appropriate, give guidance on the nature of the wholesale products Oftel would expect to be supplied as a result of an obligation to provide access, and describe the conditions under which products should be made available.

Regulatory option appraisal for alternative interface symmetric broadband origination

Existing obligations for alternative interface symmetric broadband origination

7.15 There are no existing obligations applying in relation to the wholesale alternative interface symmetric broadband origination ("AISBO") market. Ofcom considers that going forward, it is necessary for regulation to be imposed in order to enable communications providers to compete effectively with BT, since Ofcom considers that BT has SMP in this market.

Remedies considered

7.16 In its assessment of the wholesale AISBO market set out in Chapter 3 and Annex B, Ofcom has concluded that the market is not effectively competitive and concluded that BT should be designated with SMP.

7.17 In the light of the above consideration, Ofcom is imposing the following future regulation for this market:

1. a general obligation to provide access on reasonable request;
2. requirement not to unduly discriminate;
3. basis of charges obligations (cost orientation and a cost accounting system);
4. accounting separation obligations;
5. requirement to publish a reference offer;
6. an obligation to give 90 days' notice of changes to prices, terms and conditions for existing products;

7. an obligation to give 28 days' notice of the introduction of prices, terms and conditions for new products;
8. requirement to provide quality of service information;
9. requirement to publish technical information with 90 days' notice; and
10. obligations relating to requests for new network access.

7.18 In addition to the above conditions, Ofcom is imposing the following Directions under appropriate conditions:

11. Direction under the general access condition to provide Ethernet-based LLU backhaul products, subject to specific terms and conditions;
12. Direction under the cost orientation condition covering pricing matters relating to Ethernet-based LLU backhaul.

Wholesale alternative interface symmetric broadband origination regulation 1:
Requirement to provide network access on reasonable request

7.19 Section 87(3) of the Act authorises the setting of SMP services conditions requiring the dominant provider to provide network access as Ofcom may from time to time direct. These conditions may, pursuant to section 87(5) include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions. When considering the imposition of such conditions in a particular case, Ofcom must have regard to the six factors set out in section 87(4) of the Act, including, *inter alia*, the technical and economic viability of installing other competing facilities and the feasibility of the network access.

7.20 Under the general access obligation, BT will be obliged to supply, on fair and reasonable terms, any products falling within the market for the provision of AISBO, upon reasonable request.

7.21 BT has been found to have SMP in this market. This regulation will allow communications providers to make reasonable requests to negotiate innovative products which will enable them to compete in the retail markets, encouraging competition at the retail level. If the obligation was not imposed, BT would be able to deny access or impose unreasonable terms having a similar effect, thereby hindering the emergence of a competitive retail market for leased lines and other services which rely on these inputs. The Access Directive states in Article 12 that an NRA may impose access obligations where the denial of access or unreasonable terms and conditions having a similar effect would hinder the emergence of a sustainable competitive market at the retail level, or would not be in the end users' interest.

7.22 While formulation of specific obligations may from time to time be appropriate, either for the avoidance of doubt or in resolving a dispute, Ofcom proposes to rely as far as possible on the general obligation. This removes the need for Ofcom to specify the details of products to be supplied (which it is often not best placed to do), and provides a regime which is responsive to future market and technical developments. While the scope is broad, it is appropriately limited by the ability of BT to refuse any request which is unreasonable. (Ofcom's views on reasonableness in this context are set out in Oftel's Access Guidelines.)

7.23 Reliance on the Competition Act for communications providers' general access requirements will, in Ofcom's view, be insufficient because of the network-based nature of the industry, and would be inconsistent with Ofcom's objective of promoting competition. Ofcom therefore considers that it is necessary to introduce a general access obligation.

7.24 The words "fair and reasonable terms" would be interpreted by Ofcom as meaning, amongst other things, terms which did not lead to any sort of margin squeeze between wholesale and retail markets, since a margin squeeze is in effect a constructive refusal to supply, i.e. a refusal to supply on commercially viable terms. Thus there will be no need to introduce a specific condition to deal with such an eventuality. The provision of Network Access on fair and reasonable terms and conditions should, where appropriate, include reasonable service level agreement and compensation which ensures such SLAs would be effective.

7.25 The scope of the general access obligation is defined by reference to the scope of the wholesale markets. Ofcom recognises that services within this market can potentially be used to provide a wide range of final services, i.e. the end use of the wholesale services could differ significantly. However, Ofcom does not consider it to be a practical regulatory approach to tie BT's obligation to particular end uses. In Ofcom's experience, such an approach leads to boundary disputes and arbitrage opportunities which have the effect of restricting consumer choice and/or distorting competition. Nor is there generally any public policy argument in favour of allowing a dominant provider to exploit its dominance in relation to one group of customers when it is prohibited from doing so in relation to others.

7.26 Therefore, in assessing whether a request is reasonable, depending on the facts of the case, Ofcom may consider that it might not be reasonable of BT to refuse to supply a certain class of product solely on the grounds that their use of the access product differed from that for which the product was originally developed.

7.27 Recital 6 of the Access Directive states that *"(I)n markets where there continue to be large differences in negotiating power between undertakings, and where some undertakings rely on infrastructure provided by others for delivery of their services, it is appropriate to…secure…adequate access and interconnection and interoperability of services in the interests of end users".* Ofcom considers the markets for AISBO to be of this type, and in accordance with the Access Directive considers it necessary to ensure connectivity by imposing proportionate obligations on undertakings that control access to end users.

7.28 Implementation of this obligation also fits with Recital 18 of the Framework Directive which requires NRAs where possible to take the utmost account of the desirability of making regulation technologically neutral. Communications providers will be able to use BT's wholesale AISBO products to provide services of their choice. Thus this measure is not linked to the activities of the party seeking access of the degree of its investment in network infrastructure, and it consequently accords also with Recital 7 of the Access Directive.

Responses to the draft notification – obligation to provide network access

7.29 BT pointed out in its response that the remedies proposed in the draft notification could have a significant impact on infrastructure competition if the market definition and SMP finding is not correct.

7.30 Communications providers requested that Ofcom make a clear statement regarding the scope of BT's AISBO obligations, making clear that the obligations extend to new technologies as well as existing technologies.

7.31 Ofcom notes BT's comments on the potential impact on infrastructure competition if it has incorrectly defined the AISBO market or assessed market power. Ofcom remains of the view that its assessment of the market is correct and that BT has SMP in the AISBO market. Ofcom's reasoning is set out in Chapters 2 and 3 above.

7.32 Ofcom considers that the Conditions in Annex D make clear that they apply to all products that fall within the AISBO market and that it is unnecessary to further expand on this.

Conclusions – obligation to provide network access

7.33 Having considered the responses to the draft notification, Ofcom has concluded that it is appropriate to impose a network access condition in the form set out at Annex D.

Communications Act tests

7.34 Ofcom considers that the condition (Condition HH1 in Annex D) meets the tests set out in the Act.

7.35 In Ofcom's view, this condition meets the tests set out in Section 47 of the Act. The condition is objectively justifiable, in that it relates to the need to ensure that competition develops to the benefit of consumers. It does not unduly discriminate, as it is imposed on BT and no other communications provider has SMP in these markets. It is proportionate, since it is targeted at addressing the market power that BT holds in these markets and does not require it to provide access if it is not technically feasible or reasonable. Finally, it is transparent in that it is clear in its intention to ensure that BT provides access to its network in order to facilitate competition.

7.36 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4 of the Act. In particular, because it requires BT to provide the necessary access products, the condition encourages the provision of network access and service interoperability for the purpose of ensuring efficiency and promoting competition in the downstream markets, in accordance with sections 4(7) and 4(8). As BT has market power in the provision of wholesale AISBO, it controls a key input into a range of downstream services – including virtual private networks, managed services etc. In requiring this condition, Ofcom is promoting competition and the interests of consumers and maximising choice in the markets for those downstream services, in accordance with sections 3(4)(b) and 4(3).

7.37 Ofcom considers that imposition of this condition satisfies the conditions set out in section 87(4) of the Communications Act. Ofcom recognises that in many circumstances it will not be feasible for other communications providers to build out their networks to achieve a degree of coverage comparable to BT. Since this would restrict the potential development of alternative facilities in the current market, Ofcom considers that this condition is fair and reasonable. Ofcom is satisfied that this condition is feasible and technically and economically viable. In respect of existing products supplied by BT such as PPCs, it is clearly feasible and viable for it to continue to provide. In relation to new products, as BT will only be required to provide these on reasonable request, the condition will not require BT to do anything which is not feasible or viable.

7.38 Ofcom also believes that this condition is fair and reasonable taking into account the investment made by BT in its network, and bearing in mind that BT will only be required to supply upon a reasonable request that enables it to recover its costs. Ofcom believes that by enabling other communications providers to make effective use of wholesale inputs and to make optimal use of their own networks, this condition addresses the need to secure effective competition in the long term and the goal of ensuring that services based on leased line components are provided throughout the UK (excluding Kingston upon Hull).

Wholesale alternative interface symmetric broadband origination regulation 2:
Requirement not to unduly discriminate

7.39 Section 87(6)(a) of the Act authorises the setting of an SMP services condition requiring the dominant provider not to unduly discriminate against particular persons, or against a particular description of persons, in relation to matters connected with the provision of network access. The requirement not to unduly discriminate is intended, principally, to prevent dominant providers from discriminating in favour of their own retail activities and to ensure that competing providers purchasing wholesale products from the dominant provider are placed in an equivalent position to the dominant provider's retail arm.

7.40 Where dominant providers are vertically integrated, like BT, they may have an incentive to provide wholesale services on terms and conditions that favour their own retail activities, in a way that would have a material adverse effect on competition. In particular, they may charge competing providers more than the amount charged (through transfer charging) to their own retail activities for wholesale services, thereby increasing the costs of competing providers and giving themselves an unfair competitive advantage. They might also provide services on different terms and conditions, for example with different delivery timescales, which would disadvantage their retail competitors and in turn consumers.

7.41 In the absence of a non discrimination condition, Ofcom could be called upon to investigate alleged breaches of the Competition Act prohibition on anti-competitive agreements and abuse of a dominant position, and might be required to resolve successive complaints. Imposing an *ex ante* condition in this instance will reduce the potential regulatory costs emanating from multiple or successive complaints related to discrimination.

7.42 It might be argued that the Competition Act provides adequate provision to address allegations or evidence of discriminatory behaviour. However, Ofcom considers that at the wholesale level sectoral regulation provides a faster and more secure means of giving effect to decisions and determinations. In addition, it allows Ofcom to place a greater emphasis on promoting competition (for example by restricting the ability of an SMP communications provider to foreclose segments of the retail market).

7.43 It might also be argued that a requirement not to unduly discriminate prevents BT from fully exploiting its economies of scale. If BT were able to discriminate, it would be able, when needed, to quote a lower price in order to attract sufficient numbers of customers to ensure that its infrastructure is utilised at full capacity. Although this is a valid consideration, Ofcom considers that it is far outweighed by the fact that in view of BT's position of SMP, it would also be able to use discrimination for other purposes less constructive than maximisation of capacity utilisation (such as predatory pricing), and that this would have a harmful effect on competition.

7.44 Ofcom therefore considers that it is necessary to apply a non discrimination obligation in this market. This accords with Recital 17 of the Access Directive, which states that non discrimination obligations ensure that undertakings with market power do not distort competition, in particular where they are vertically integrated undertakings that supply services to undertakings with whom they compete on downstream markets. This is clearly the case with respect to the wholesale and retail leased lines markets.

7.45 A prohibition of discrimination might have disadvantages if it prevented discrimination that was economically efficient or justified. However, the condition provides that there should be no *undue* discrimination. Oftel considered how it might treat undue discrimination in its Access Guidelines (it should be noted that Ofcom intends to consult on non-discrimination guidelines later on in 2004). Oftel's Guidelines note that any obligation with respect to undue discrimination has the objective of preventing behaviour that has a material adverse effect on competition. This does not mean that there should not be any differences in treatment between undertakings, rather that any differences should be objectively justifiable, for example, by differences in underlying costs of supplying different undertakings. The Guidelines also note that in Oftel's view, there is a rebuttable presumption that a vertically integrated SMP communications provider discriminating in favour of its own retail activities or between others of its own activities would have a material adverse effect on competition (paragraph 3.9). This view would also apply to discrimination in relation to the underlying components of services.

Responses to the draft notification – no undue discrimination

7.46 No comments were received on this issue.

Conclusions – no undue discrimination

7.47 Having considered the responses to the draft notification Ofcom considers it appropriate to impose condition HH2 in Annex D, which prohibits *undue* discrimination. This condition remains in the same terms as the condition previously consulted on in the draft notification.

Communications Act tests

7.48 Ofcom considers that the condition meets the tests set out in the Act.

7.49 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, because it requires BT to provide the necessary access products, the condition encourages the provision of network access and service interoperability for the purpose of efficiency and sustainable competition in the downstream markets, in accordance with sections 4(7) and 4(8) of the Act. As BT has market power in the provision of wholesale AISBO, it controls a key input into a range of downstream services – principally leased lines but also virtual private networks, managed services etc. By allowing communications providers access on non-discriminatory terms, competition at the retail level will be encouraged, thereby promoting competition and the interests of consumers and maximising choice in the markets for those downstream services, in accordance with sections 3(4)(b) and 4(3) of the Act.

7.50 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. Ofcom considers that this condition is objectively justifiable, in that it provides safeguards to ensure that competitors, and hence consumers, are not disadvantaged by BT discriminating in favour of its own retail activities or between its own different activities. It does not unduly discriminate, as it is imposed only on communications providers who have SMP. It is proportionate since it only prevents behaviour which is unduly discriminatory. Finally, it is transparent in that it is clear in its intention to ensure that BT does not unduly discriminate.

7.51 Ofcom considers that imposition of this condition satisfies the conditions set out in section 87(4) of the Communications Act. Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition, as it will ensure that other communications providers are able to make effective use of wholesale inputs and offer products based on these wholesale inputs in competition with BT. By allowing communications providers access on non-discriminatory terms, competition at the retail level will be encouraged, thereby addressing the goal of ensuring that services based on leased line components are provided throughout the UK (excluding Kingston upon Hull).

Wholesale alternative interface symmetric broadband origination regulation 3:
Basis of charges obligations (cost orientation and a cost accounting system)

7.52 Section 87(9) authorises the setting of SMP services conditions imposing on the dominant provider rules concerning the recovery of costs and cost orientation. BT is currently required to provide certain wholesale interconnection services, including PPCs, at cost oriented prices. Under the cost orientation obligation, BT will be required to provide wholesale AISBO services at cost oriented prices, calculated on the basis of Long Run Incremental Cost (LRIC) and allowing an appropriate mark-up for the recovery of common costs. In other words, this obligation would add a requirement for cost orientation to BT's requirement to provide access.

7.53 The cost accounting obligation is discussed in Chapter 10, along with justification for the obligation against the various regulatory tests.

7.54 As BT has been identified as having SMP in this market, the availability of wholesale AISBO services at cost oriented prices would help to ensure that the resulting competition in the retail leased lines markets and other downstream markets should lead to lower prices.

7.55 It might be argued that the Competition Act should be used to avoid excessive or predatory pricing. However, Ofcom considers that sectoral tests are likely to be more stringent and more effective than the Competition Act, giving the SMP communications provider less latitude and providing greater certainty for access customers.

7.56 Ofcom therefore considers that it is necessary to apply a cost orientation obligation. The condition sets out that the charges for services should be reasonably derived from the costs of providing those services. It further states that the costs must be calculated on a forward looking incremental cost approach, and allowing an appropriate mark-up for the recovery of common costs including an appropriate return on capital employed.

7.57 The condition will apply across all services within this market. This means that the price of all services provided by BT in the market should be based on LRIC and allowing an appropriate mark-up for the recovery of common costs.

7.58 Ofcom confirms that all new services that are introduced into this market will also be covered by the same pricing rule. This is because new services in the same market would be expected to be subject to the same competitive conditions as existing services. This does not however mean that BT cannot recover costs appropriate to new wholesale services. The recovery of efficiently incurred costs for new wholesale services was discussed in paragraphs 2.23 – 2.25 of Oftel's access guidelines.

7.59 Although this condition will apply to all services in this market, and the expectation is that the treatment of new services under the condition will be the same as for existing services, there may be occasional exceptions to this rule. This may arise where the new service is innovative and thus warrants a different regulatory approach. There are three ways in which such services can be dealt with.

i) The service may be so innovative that it falls in a completely new and separate market. In this case the appropriate regulatory obligations will be determined by Ofcom following analysis of this new market.

ii) The new service falls within the market but Ofcom determines that an alternative charging basis is appropriate. For example, a different charging basis may be appropriate for services offered during a trial.

iii) The new service falls within the market and the cost orientation obligation is applied, but there might be a range of prices which would be consistent with cost orientation given the uncertainty about the take up and future profitability of the service. In determining whether a charge is not cost orientated, Ofcom would consider whether the expected or achieved return on capital was excessive. In making this assessment, Ofcom will need to take account of the risk of the new service failing and the lost investment that would result. This therefore maintains an appropriate incentive for the communications provider to invest in new services and technologies.

7.60 The condition contains a clause enabling Ofcom to determine that a price need not be set on a forward-looking LRIC basis. This is particularly relevant to scenario ii) above where Ofcom determines that an alternative charging basis is appropriate. If BT wishes to set a price for a service in any of the markets on any other basis than forward-looking LRIC, it must apply to Ofcom for permission to do this.

7.61 Ofcom considers that the cost orientation condition is justifiable and a proportionate response to the extent of competition in the markets analysed. It enables competitors to purchase services at a rate which will enable them to develop competitive services to the benefit of consumers, whilst at the same time allowing BT a fair rate of return which it would expect in a competitive market. The potential for a degree of flexibility envisaged in the approach to the recovery of cost of capital recognises that some investments will carry a higher degree of risk than others and does not remove incentives for the development of new services.

Responses to the draft notification – basis of charges obligations

7.62 Some communications providers suggested that a price control should be imposed on AISBO products, as Ofcom has done for TISBO products.

7.63 Ofcom is of the view that it is not currently necessary to impose a price control on AISBO products. The AISBO market is in a relatively early stage of development and it is necessary to give time for the effects of the cost orientation obligation to impact on the competitiveness of the market before considering whether a price control is necessary. The need for a price control will be considered when the market is next reviewed.

Conclusions – basis of charges obligations

7.64 Having considered the responses to the draft notification, Ofcom has concluded that a condition should be imposed in these markets in the form set out at Annex D.

Communications Act tests

7.65 Ofcom considers that the condition (Condition HH3 in Annex D) meets the tests set out in the Act.

7.66 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, the condition encourages the provision of network access and service interoperability for the purpose of efficiency and sustainable competition in the markets for electronic communications networks, electronic communications services and associated facilities, in accordance with sections 4(7) and 4(8). Excessively high pricing of wholesale inputs distorts allocation of resources and leads to inefficiency for retail competitors who may be forced into using less efficient alternative technologies. Ensuring that BT as the dominant provider is unable to charge excessive prices will therefore promote competition and thereby promote the interests of end users, in accordance with sections 3(4)(b) and 4(3) of the Act.

7.67 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. Ofcom considers that the condition is an objectively justifiable and proportionate response to the extent of competition in the markets analysed, as it enables competitors to purchase services at charges that will enable them to develop competitive services to the benefit of consumers, whilst at the same time allowing BT a fair rate of return that it would expect in competitive markets. It does not unduly discriminate, as it is imposed on BT and no other communications provider has SMP in these markets. Finally, it is transparent in that it is clear in its intention to ensure that BT charges on a LRIC plus mark-up basis.

7.68 Ofcom considers that imposition of a cost orientation condition satisfies section 88 of the Act. Without it, there is a relevant risk of adverse effects arising from price distortion because BT, as it has SMP in this market, has the ability to price above the competitive level, so as to have adverse consequences for end users of public electronic communications services. Ofcom further considers in this connection that the condition is appropriate for the purposes of promoting efficiency and sustainable competition and conferring the greatest possible benefits on the end users of public electronic communications services.

Wholesale alternative interface symmetric broadband origination regulation 4:
Accounting separation obligation

7.69 Ofcom is imposing an accounting separation obligation in this market. This is discussed in Chapter 10, along with justification against the various regulatory tests. The precise wording of the condition is discussed in more detail in the separate accounting document *The regulatory financial reporting obligations on BT and Kingston Communications in markets where SMP has been demonstrated* published by Ofcom.

Wholesale alternative interface symmetric broadband origination regulation 5:
Requirement to publish a reference offer

7.70 Section 87(6)(c) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information for the purpose of securing transparency. Section 87(6)(d) also permits the setting of conditions requiring the dominant provider to include specified terms and conditions into the reference offer.

7.71 BT is currently obliged to publish prices, terms and conditions for leased line interconnection in its Standard Interconnect Agreement. Under this obligation, BT would have to publish in respect of its wholesale AISBO services the prices, terms and conditions in the form of a Reference Offer (RO) – the published RO must include:

- a clear description of the services on offer;
- terms and conditions including charges and ordering, provisioning, billing and dispute resolution procedures. The RO should provide sufficient information to enable communications providers to make technical and commercial judgements such that there is no material adverse effect on competition;
- information relating to technical interfaces and points of interconnection. Such information should ensure that providers are able to make full and effective use of all the services provided;
- conditions relating to maintenance and quality (service level agreement). The inclusion of service levels, as part of the contractual terms of the RO, that provides for a minimum acceptable level of service, will ensure that services are provided in a fair, reasonable, timely and non-discriminatory fashion; and
- terms and conditions that are fair and reasonable. This will help to ensure that products are offered on terms and conditions as they would in a competitive market and that they are sensible, practical, and do not impose a margin squeeze on competitors.

7.72 The obligation prohibits BT from departing from the charges terms and conditions in the Reference Offer and requires BT to comply with any Directions Ofcom may make from time to time under the condition. Requiring BT to publish prices, terms and conditions would help to create transparency in this market where BT has been identified as having SMP. Since wholesale AISBO services are an input for retail products, transparency is necessary to ensure competition in downstream (retail) markets.

7.73 An obligation to publish prices could lead to other communications providers following BT's prices, rather than being dynamic in setting prices at the true competitive level. However, this is less of a consideration than in the trunk market (see below) as there is likely to be more limited competition in the provision of AISBO services.

7.74 The condition also requires BT to publish information on the use of network components in providing AISBO services. Network components for AISBO services will be reviewed in the work stream referred to in paragraph 7.35 of Ofcom's statement of April 2004 on *The regulatory financial reporting obligations on BT and Kingston Communications in markets where SMP has been demonstrated*. Following this review, it is likely that Ofcom will direct changes to the current network component list to include appropriate network components for AISBO services. Once this anticipated direction is finalised, the obligation to publish this information will be more meaningful. This will help Ofcom to monitor the effectiveness of BT's non-discrimination obligations, and to deal with any complaints about breaches of those obligations. This is discussed in more detail in Chapter 10.

7.75 Ofcom therefore considers that a price publication obligation should be put in place. This accords with Article 9 and with Recital 16 of the Access Directive, which states that transparency of terms and conditions for access and interconnection, including prices, serves to speed up negotiation, avoid complaints and give confidence to market players that a service is not being provided on discriminatory terms.

7.76 This obligation will ensure that communications providers, end users and others are able to put to Ofcom fully justified and objectively reasoned complaints of anticompetitive behaviour by BT, and to obtain redress where appropriate.

Responses to the draft notification – publication of reference offer

7.77 BT argued in its response to the draft notification that any obligation to publish reference offers, technical information, quality of service measures, charges, term or conditions should be subject to reasonable scheduling.

7.78 Ofcom considers that the timescales for implementation that it has set in the Conditions in Annex D are reasonable to both BT and other communications providers, balancing the need for BT to have time to properly implement the requirements and the need of other communications providers to have details of the AISBO products available to them and the terms and conditions for those products.

Conclusions – requirement to publish a reference offer

7.79 Having considered the responses to the draft notification, Ofcom has concluded that a condition should be imposed in these markets in the form set out at Annex D.

Communications Act tests

7.80 Ofcom considers that the condition (Condition HH4 in Annex D) meets the tests set out in the Act.

7.81 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, the condition encourages compliance with the requirement not to discriminate unduly, for the purpose of facilitating service interoperability and securing freedom of choice for the customers of communications providers, by making BT's contractual terms more transparent. It promotes the interests of purchasers of wholesale symmetric broadband origination services by enabling them to adjust their downstream offerings in competition with BT, in response to changes in BT's terms and conditions. It also promotes competition in the AISBO market by allowing BT's competitors in the provision of symmetric broadband origination services to make appropriate changes to their products. Finally, it will allow Ofcom more easily to monitor discrimination, so ensuring competition in the downstream markets, in accordance with sections 3(4)(b) and 4(3) of the Act.

7.82 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The condition is objectively justifiable in that it requires that terms and condition are published in order to encourage competition and provide stability in markets by providing transparency of BT's prices, terms and conditions, thereby allowing communications providers to better plan their businesses and customer relationships. It is proportionate, as only information that is necessary to ensure that that there is no material adverse effect on competition is required to be provided. It does not unduly discriminate as it is applied to BT and no other provider has SMP in these markets. Finally, it is transparent in that it is clear in its intention to ensure that BT publishes details of its terms and conditions.

7.83 Ofcom considers that imposing this obligation satisfies the conditions set out in section 87(4) of the Communications Act. Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition in the long term, by ensuring communications providers can make effective use of wholesale inputs and offer products based on these wholesale inputs in competition with BT. In addition it will address the goal of ensuring that services based on leased line components are provided throughout the UK.

Wholesale alternative interface symmetric broadband origination regulation 6:
Requirement to provide advance notification of changes to prices, terms and conditions

7.84 Section 87(6)(b) of the Act authorises the setting of SMP services conditions requiring the dominant provider to publish, in such manner as Ofcom may direct, the terms and conditions on which it is willing to enter into an access contract (e.g.: by publication of a reference offer).

7.85 BT is currently required to give advance notification of price changes for certain symmetric broadband origination products as part of its Standard Interconnect agreement (one day for competitive products, 28 days for prospectively competitive products and 90 days for non competitive products).

7.86 BT has been identified as having SMP in this market. Advance notification will give communications providers the opportunity to respond to prices, creating a 'ripple effect' that passes price reductions down to end users. Customers may take the opportunity to consider changing suppliers.

7.87 It might be argued that an obligation to provide advance notification of prices could lead to a 'chilling' effect where other communications providers follow BT's prices rather than act dynamically to set competitive prices in the symmetric broadband origination market. However, given that Ofcom's primary aim is to address the consequences for downstream markets of BT's market power in this market, it does not believe that this consideration will undermine imposition of this obligation.

7.88 Ofcom therefore considers that BT should be obliged to provide advance notice of changes to the prices, terms and conditions of its wholesale AISBO services, which are an essential input for products in the retail markets. Ofcom considers that 90 days would be an appropriate period for notice of changes to the prices, terms or conditions of existing AISBO products. In Ofcom's view, this period of notice is necessary to give communications providers sufficient time to respond to changes to BT's wholesale products and allow them to plan and implement their reactions to those changes, for example they might wish to make similar changes to comparable products they offer, without the increased risk of incurring any forecasting penalties that are in place. This will prevent them from being put at a competitive disadvantage in relation to BT's retail arm.

7.89 Ofcom considers that a shorter notice period of 28 days is appropriate for the introduction of prices, terms and conditions for new AISBO products. In Ofcom's view, this provides the appropriate balance between allowing communications providers sufficient time to react to changes made by BT and the risk of potential competition 'chilling' effects described above. Forecasting penalties are unlikely to be an issue for new products.

7.90 As noted above, Ofcom considers that transparency obligations, which include notification of prices, accord with Recital 16 of the Access Directive, which states that transparency of terms and conditions for access and interconnection, including prices, serves to speed up negotiation, avoid complaints and give confidence to market players that a service is not being provided on discriminatory terms.

Responses to the draft notification – notification of prices terms and conditions

7.91 No comments were made on this issue.

Conclusions – notification of prices terms and conditions

7.92 Having considered the responses to the draft notification, Ofcom considers that it is appropriate to impose condition HH5 in Annex D, which requires an advance notification period of 90 days for changes to existing AISBO products and 28 days for the introduction of new products.

Communications Act tests

7.93 Ofcom considers that the condition meets the tests set out in Section 47 of the Act. The justification for imposing the condition is that general and reliable visibility of a dominant communications provider's prices is needed to enable Ofcom and competitors to monitor BT's prices for possible anti competitive behaviour. Imposition of this condition does not discriminate unduly against BT as it is the only communications provider in the market with SMP; the behaviour of other communications providers is not capable of having a materially adverse effect on competition as these communications providers do not have market power. The remedy is proportionate, as it is the least burdensome means of achieving the objective of transparency, and the requirement is made fully transparent in Annex D.

7.94 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, the condition encourages compliance with transparency, for the purpose of facilitating service interoperability and securing freedom of choice for the customers of communications providers, in accordance with sections 4(7) and 4(8). It promotes the interests of purchasers of wholesale AISBO by enabling them to adjust their downstream offerings in competition with BT, in response to changes in BT's terms and conditions by informing them of when those changes are going to occur, thereby allowing them to better plan their businesses and relationships with their customers. It also promotes competition in the AISBO market by allowing BT's competitors in the provision of symmetric broadband origination services to make appropriate changes to their products, in accordance with sections 3(4)(b) and 4(3) of the Act. Finally, it will allow Ofcom more easily to monitor discrimination, thereby ensuring competition in the downstream markets.

7.95 Ofcom considers that imposing this obligation satisfies the conditions set out in section 87(4) of the Communications Act. Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition in the long term, by ensuring communications providers have access to transparent information that enables them to make effective use of wholesale inputs and offer products based on these wholesale inputs in competition with BT In addition it will address the goal of ensuring that services based on leased line components are provided throughout the UK.

Wholesale alternative interface symmetric broadband origination regulation 7:
Obligation to provide quality of service information

7.96 Section 87(6)(b) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information for the purpose of securing transparency. The condition imposed by Ofcom in Annex D requires BT to publish such information in the manner and form required by Ofcom.

7.97 This obligation would require BT to publish certain information relating to the quality of the service it delivers in providing wholesale AISBO. The condition would have the potential to deliver benefits in a number of areas, most notably prevention of undue discrimination. Other benefits might include, for example, benchmarking with international comparators in situations where BT delivers a similar quality of service to all communications providers including itself, but this level of service falls short of the service generally offered in comparable countries, most notably within the EU.

7.98 The principle of no undue discrimination is intended to ensure that communications providers with SMP do not distort competition. As noted in Recital 17 of the AID, the application of this principle is particularly important where a vertically integrated communications provider, with market power in a particular wholesale market, supplies services to other communications providers with whom they compete in a downstream retail market.

7.99 Section 87(6)(a) of the Communications Act allows Ofcom to impose a no undue discrimination condition on a dominant provider where there has been an SMP determination in an identified market. The no undue discrimination condition set out in Annex D requires the dominant provider not to unduly discriminate against particular persons, or against a particular description of persons, in relation to matters connected with network access.

7.100 It might be argued that a dominant communications provider should meet this condition by providing wholesale services to other communications providers using the same operational processes and interfaces it uses to supply itself. However, the high cost of replacing legacy systems means that this will not always be practical. Instead, Ofcom considers that the most objectively justifiable and proportionate means of meeting this condition is to require that a dominant communications provider delivers the same operational performance to other communications providers as it delivers to itself. Specifically, this means that Key Performance Indicators (KPIs) such as ordering times and fault response times must be the same.

7.101 Ofcom believes that the only means of ensuring that there is no undue discrimination as to quality of service is by imposing a requirement to publish such information. Without such a requirement, Ofcom believes that it would be impossible to monitor that the different operational processes used by the dominant communications provider were delivering an equivalent quality of service.

7.102 Ofcom believes that it is insufficient to rely on requesting the necessary quality of service information each time it is required, as suggested in paragraph 3.51 of Oftel’s Access Guidelines. In the absence of an *ex ante* obligation to do so, there is no guarantee that the necessary information will be collected at the time of any given event. It is not in general possible to reconstruct data for operational performance retrospectively.

7.103 The specific condition set out in Annex D requires BT to publish data on a specified set of KPIs, with a format and frequency to be determined by Ofcom. This condition follows section 87(6)(b)) which allows Ofcom to impose a condition of transparency whereby it can require a dominant provider to publish all such information as directed by Ofcom to secure transparency in relation to matters such as non-discrimination. It is Ofcom’s intention that the scope of publication should take account of the potential conflict between any obligation to publish performance data, in order to provide transparency, and the need to maintain commercial confidentiality.

7.104 Implementation of this regulation is in line with the Commission’s SMP Guidelines, which state at paragraph 119 that “in the early stages of the new framework, the Commission would not expect NRAs to withdraw existing regulatory obligations which have been designed to address legitimate regulatory needs which remain relevant, without presenting clear evidence that those obligations have achieved their purpose and are no longer required since competition is deemed to be effective”. It will enable Ofcom to make Directions requiring BT to publish specific quality of service information.

Responses to the draft notification – quality of service information

7.105 No comments were received on this issue.

Conclusions – provision of quality of service information

7.106 Having considered the responses to the draft notification, Ofcom has concluded that it is appropriate to impose condition HH6 in Annex D. This condition remains in the same terms as the condition previously consulted on.

Communications Act tests

7.107 Ofcom considers that the condition meets the tests set out in the Act.

7.108 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, the condition encourages the provision of network access and service interoperability for the purpose of securing the maximum benefit for the persons who are customers of communications providers and of persons who make such facilities available, in accordance with sections 4(7) and 4(8). It promotes competition and thereby the interests of end users in downstream markets, by denying BT as the dominant provider in this market the opportunity to discriminate in the quality of service it provides to customers, in accordance with sections 3(4)(b) and 4(3) of the Act.

7.109 It is Ofcom's current view that the transparency condition satisfies the relevant requirements specified in section 47(2) of the Act. In particular, Ofcom considers that

- The condition is objectively justifiable because it is the only means of ensuring that a dominant communications provider provides an equivalent quality of service to other communications providers as it provides to itself. This is necessary in order to prevent a vertically integrated communications provider, with market power in a particular wholesale market, leveraging this into a downstream market.
- The condition does not unduly discriminate against a particular person because it applies to the dominant provider in circumstances where there has been an SMP determination. In the case of the dominant provider, the supply of wholesale services must be in sufficient volume for the publication of KPI data to be statistically meaningful. Ofcom considers that this is not the case in relation to Kingston.
- The condition is proportionate to what it is intended to achieve. Publication is only required where wholesale remedies have been imposed and where the demand for the product or service is sufficient that the data provided would be statistically meaningful.
- The condition provides transparency in relation to what it is intended to achieve because the objective of the condition relates to the problem identified in the market, and *inter alia* it is aimed at ensuring non-discrimination specifically in relation to the quality of service provided by the dominant provider in respect of its key business processes.

7.110 Ofcom has also had regard to its duties under section 4 of the Act, in particular the requirement to promote competition. Ofcom considers that its proposals promote competition amongst providers of electronic communications networks and services as the KPIs are designed to ensure that alternative communications providers have an equivalent opportunity to compete with BT.

7.111 In addition, Ofcom considers that imposition of this condition satisfies the conditions set out in section 87(4) of the Communications Act. Overall, given the potential for the development of alternative facilities in the current market, Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition in the long term, as it will ensure that communications providers are able to make effective use of wholesale inputs and offer products based on leased lines in competition with BT. It will also assist monitoring of BT's compliance with a non discrimination condition. In addition it will address the goal of ensuring that services based on leased line components are provided throughout the UK by enabling communications providers to compete on comparable terms with BT at the retail level.

Wholesale alternative interface symmetric broadband origination regulation 8:
Requirement to publish technical information

7.112 Section 87(6)(c) of the Act authorises the setting of SMP services conditions requiring the dominant provider to publish, in such manner as Ofcom may direct, the terms and conditions on which it is willing to enter into an access contract. Section 87(6)(b) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information for the purpose of securing transparency.

7.113 Under the Condition 'Requirement to publish a reference offer', BT will be obliged to publish a Reference Offer for Network Access, which amongst other things, contains a description of the Network Access to be provided, including technical characteristics; the location of the points of Network Access; and technical standards for Network Access. The Condition sets out the number of days within which a reference offer, or amendments to that reference offer, must be published. For example where BT amends its Reference Offer in respect of high bandwidth symmetric broadband origination services it must publish an amended version 28 days before the amendment comes into effect. However, the Condition 'Requirement to publish technical information' sets out additional obligations to publish new technical information 90 days in advance of entering into a contract to provide the new Network Access, or amendments to existing technical terms and conditions 90 days before those amended terms and conditions come into effect.

7.114 As set out above, the information to be published under this Condition comprises new or amended technical characteristics (including information on network configuration where to necessary to make effective use of the Network Access), locations of the points of Network Access and technical standards (including any usage restrictions and other security issues). Relevant information about network configuration is likely to include information about the function and connectivity of points of access, for example the connectivity of exchanges to end users and other exchanges.

7.115 The terms of this Condition are important to ensure that communications providers to whom Network Access is being provided by BT are able to make effective use of that Network Access. Changes to technical information must be published in advance so that communications providers have sufficient time to prepare. For example, a competing provider may have to introduce new equipment or modify existing equipment to support a new or changed technical interface. Similarly, a competing provider may need to make changes to their network in order to support changes in the points of network access or configuration.

7.116 Ofcom's view is that 90 days is the minimum time that competing providers will need to modify their network to support a new or changed technical interfaces or support a new point of access or network configuration. Therefore, Ofcom has concluded that in the market for wholesale symmetric broadband origination services, BT must publish any new or modified technical characteristics, points of network access and technical standards not less than 90 days in advance of either BT entering into a contract to provide new Network Access or making technical changes to existing Network Access, Ofcom consents otherwise.

Responses to the draft notification – requirement to provide technical information

7.117 No comments were received on this issue.

Conclusions – requirement to provide technical information

7.118 Having considered responses received in other market review consultations, in particular those received in response to the *Review of the Wholesale Broadband Access Markets*, Ofcom considers that there may be instances where BT, to meet its obligations under the condition to provide Network Access on reasonable request, should provide a period of longer than 90 days. For example, if BT were to make a major change to its technical terms and conditions, a period of more than the 90 day minimum notification period may be necessary.

7.119 Ofcom has, therefore, amended Condition HH7 in Annex D to include a reference to publishing a notice "within a reasonable time period but not less than 90 days" before providing the new wholesale services or amending existing technical terms and conditions. Ofcom believes that 90 days is a practical standard period and notes that it is able and willing to consent to a shorter period in justified circumstances. Equally, where longer notice is reasonably required, it must be given.

Communications Act tests

7.120 Ofcom considers that the Condition meets the tests set out in the Act. Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements in sections 3 and 4 and in particular the requirement to promote competition and to encourage service interoperability for the purpose of securing efficient and sustainable competition and the maximum benefits for consumers by ensuring that providers have sufficient notification of technical changes to BT's network to enable them compete, in accordance with sections 3(4)(b), 4(3), 4(7) and 4(8) of the Act.

7.121 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The condition is objectively justifiable in that it enables competing communications providers to make full and effective use of Network Access. It does not unduly discriminate in that it is imposed on BT and no other communications provider has SMP in this market. It is proportionate in that 90 days is the minimum necessary to allow competing providers to modify their networks. It is transparent in that it is clear in its intention that BT should notify technical information as set out above.

7.122 Ofcom considers that imposing this obligation satisfies the conditions set out in section 87(4) of the Communications Act. Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition in the long term, by ensuring communications providers can make effective use of wholesale inputs and offer products based on these wholesale inputs in competition with BT. In addition it will address the goal of ensuring that services based on leased line components are provided throughout the UK. By requiring BT to provide advance notification of technical changes, communications providers will be able to better plan their businesses and relationships with their customers.

Consultation on interfaces

7.123 Current regulation on BT (licence condition 15) includes a requirement to consult on interfaces where so directed by Ofcom. This was to ensure that BT could not impose unnecessary costs on competing communications providers by specifying a proprietary interface.

7.124 However, Ofcom recognises that communications providers are constrained in their choice of interface by the standardised nature of most communications equipment. In addition, Ofcom believes that the scope for further modifications to traditional PSTN equipment, where BT was most likely to be able exert control over interface specifications, is likely to be limited in the future, as communications providers and equipment manufacturers increasingly look to other technologies. Therefore, Ofcom now considers it unlikely that BT would be able to exert control over interfaces in a way that could have an adverse effect on competition. Consequently, Ofcom does not believe that imposing a condition requiring consultation on interfaces would be proportionate.

Wholesale alternative interface symmetric broadband origination regulation 9:
Obligations relating to requests for new network access

7.125 This condition is set in accordance with sections 87(3) and 87(5) as detailed above in relation to the condition relating to the provision of network access.

7.126 The draft notification summarised Ofcom's proposals for regulation of the statement of requirements ("SOR") process, following consultation with industry. The SOR process forms part of BT's obligation to provide Network Access where it has SMP. The SOR process and associated timescales are the same in all of these markets.

7.127 Ofcom considered that there was evidence in the markets in this review that BT's current SOR process was not working sufficiently well and that there was a need to improve BT's response to requests for network access. There was evidence from disputes referred to Oftel since April 2002 of instances where the introduction of new products and services had been delayed by the unavailability of feasibility studies and other information which Ofcom would normally expect to be collected during the SOR process. These disputes included, for example, *Software rearrangement - Energis Determination request*, Oftel case CW/00542/08/02; *Indirect access dispute between BT and Cable & Wireless*, CW/00590/01/03; *PPCs - request for Determination from Cable and Wireless*, CW/00514/04/02, *Dispute between THUS plc and BT about the IN dip retention charge for NTS and SurfTime calls to numbers on 1k blocks*, CW/00661/07/03.

7.128 Other communications providers need clarity and certainty about the SOR process. Clear guidelines from BT and the provision of necessary information for the purposes of making a request for Network Access should speed up the SOR process to the benefit of communications providers that require wholesale inputs from BT. An improved process will also enable BT to set a reasonable standard for requests and reject inadequate requests. It should also assist with the timely resolution of disputes, since the nature of the dispute should be clearer and it should be able to be brought in a more timely manner than at present. Accordingly, Ofcom considers that *ex ante* regulation of BT's SOR process is appropriate. Ofcom considers that the condition should also apply to the TISBO market and the wholesale trunk segments market.

7.129 Ofcom considers that the process should apply to modifications to existing Network Access as well as to completely new forms of Network Access. Ofcom would not however expect the process to apply to requests for standard Network Access products offered by BT where the requesting electronic communications provider does not already have the product. Ofcom also notes that requests for modifications on existing Network Access are likely to be less complex and should be able to be dealt with relatively quickly.

7.130 The regulated process set out is designed to accompany the obligation for BT to meet all reasonable requests for access in specific markets. Ofcom acknowledges that a request for a wholesale product could take the form of a request for a new pricing structure or amount to the provision of certain billing information. Therefore, for the avoidance of doubt, Ofcom considers that the regulated SOR process does apply to modifications of this type where BT has an obligation to meet all reasonable requests. The process does not cover general requests, not associated with specific requests for access, such as requests to modify general contractual terms.

Responses to the draft notification – new network access

7.131 It was suggested by one communications provider that, given the 'flat' nature of alternative interface services, the creation of a PPC equivalent for AISBO would be difficult.

7.132 Ofcom does not consider that this market review document is the appropriate place to speculate on whether or not it is appropriate to require BT to introduce a PPC equivalent for AISBO. This market review sets the framework within which communications providers can request BT to provide network access, it does not set new products that must be provided. The nature of any AISBO product will depend on what is sought from BT by communications providers and whether it is reasonable for BT to provide the requested product.

Conclusions – obligations relating to new network access

7.133 Having considered the responses to the draft notification, Ofcom has concluded that it is appropriate to impose condition HH8 in Annex D. This condition remains in the same terms as the condition previously consulted on.

Communications Act tests

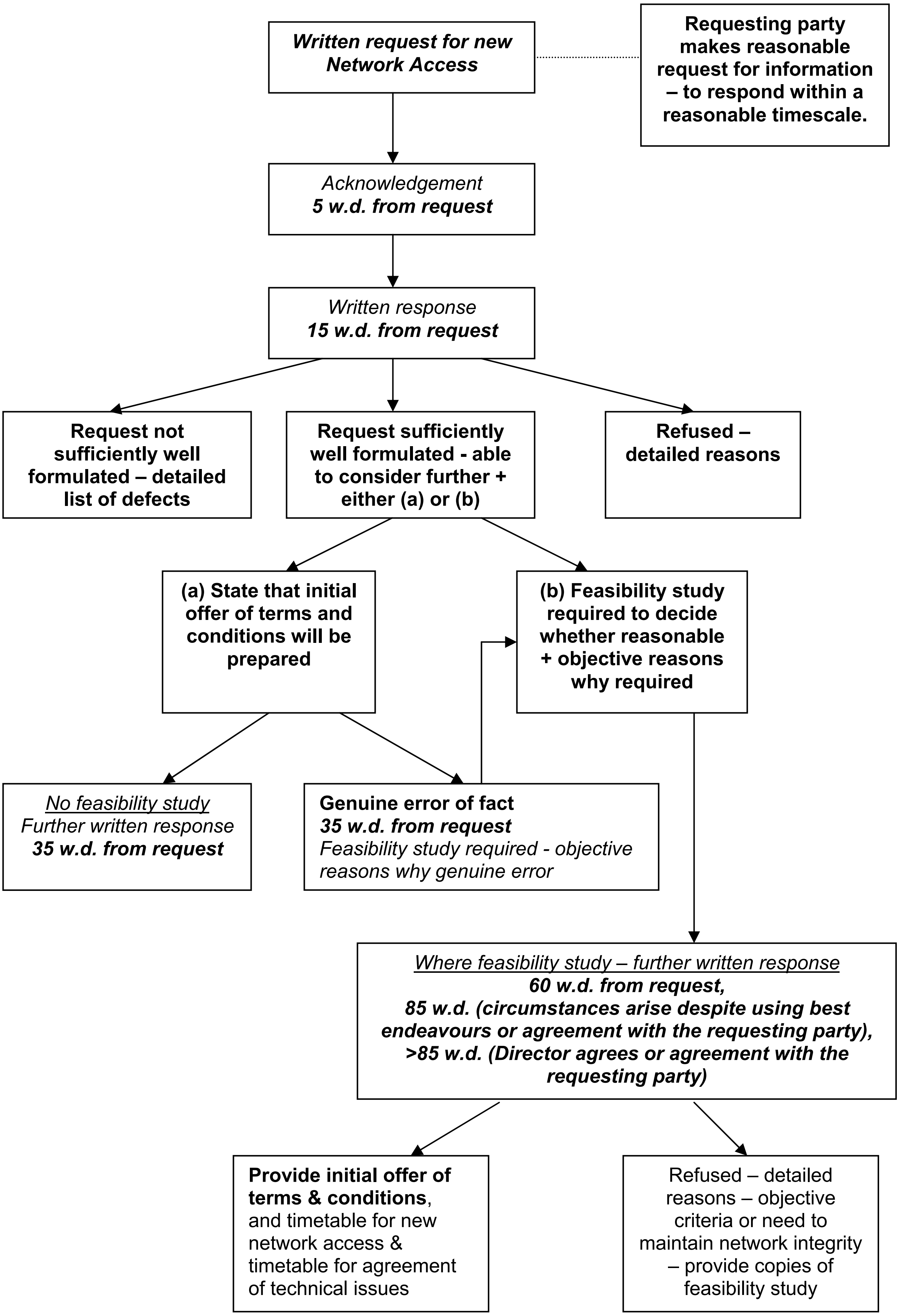
7.134 Ofcom has imposed this condition pursuant to section 87(3) and 87(5) of the Act. Specifically, under section 87(5)(a) Ofcom considers that the provisions of this condition will help to secure fairness and reasonableness in the way in which requests for Network Access are made and responded to, by adding clarity and robustness to the process. In addition, under section 87(5)(b) Ofcom considers that the provisions will help to secure that the obligations contained within the condition are complied with, within the reasonable periods and at the times set out in the condition.

7.135 Ofcom has considered the matters set out in section 87(4). In particular, under section 87(4)(d) Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition in the long term, as reductions in delays in provision of new products will ensure that communications providers are able to make effective use of BT's network in competition with BT.

7.136 Ofcom has also considered the test for setting conditions set out in section 47 of the Act, namely that the condition is objectively justifiable, does not unduly discriminate, is proportionate and transparent. Ofcom considers that the condition meets these tests. In particular, it is objectively justifiable in the light of the deficiencies in the current process which lead to the delays and lack of clarity discussed above. It does not discriminate unduly against BT because BT has been found to have a position of SMP in this market and is therefore able to exploit this position to the potential detriment of its competitors both in this market and in downstream markets. The condition is proportionate since without it being put in place, BT's competitors would continue to experience problems of the nature already described. Furthermore, it is transparent in its intention to ensure that BT has a reasonable process for dealing with requests for new Network Access.

7.137 Finally, under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom, in imposing this condition, has considered all the Community requirements set out in sections 3 and 4 of the Communications Act. In particular, under section 4(8) Ofcom considers that the provisions help secure efficiency and sustainable competition in the markets in this review. They help to ensure efficiency and sustainable competition by enabling other communications providers to make effective use of BT's network in order to offer their own products, in accordance with sections 3(4)(b) and 4(3) of the Act.

7.138 A summary of Ofcom's conditions is as follows:



Wholesale alternative interface symmetric broadband origination regulation 10: Direction under general access condition requiring BT to supply backhaul links via Local Area Network extension services.

7.139 Under the LLU backhaul Direction (*Final direction on LLU backhaul services*, 8 August 2002), BT is currently obliged to provide backhaul on reasonable terms (including service level agreements and compensation), at cost oriented prices and at prices consistent with PPCs.

7.140 The backhaul Direction identified two separate means of providing backhaul, via leased lines (based on traditional interfaces) and via Local Area Network extension services (LES), and concluded that they formed separate markets. This Direction relates only to backhaul links provided over LES, which is a form of AISBO. Backhaul provided via leased lines is discussed in regulation 15 in Chapter 6 above.

7.141 In order to carry over the full detail of the LLU backhaul Direction, Ofcom has imposed an obligation to provide SLAs and compensation arrangements.

7.142 BT has been identified as having SMP in this market. In the absence of an obligation to supply backhaul, BT would not have any incentive to do so. This would reduce potential for competition by LLU communications providers.

7.143 Carrying forward this relatively recently introduced piece of regulation will add to the certainty in this market provided by continuity of the market conditions under which BT and other communications providers currently operate. This will help to encourage appropriate investment decisions which will maximise the level of competition in this and related retail markets.

7.144 It might be argued that BT would be required to provide LLU backhaul under the terms of a general obligation to provide access (see above) so a specific obligation is not necessary. However, Ofcom believes that it is essential to require BT specifically to provide these products for the following reasons:

- it will provide continuity by carrying forward recently introduced regulation;
- it will provide greater certainty and encourage appropriate investment decisions, since BT will be required to continue to provide these particular products as set out in the Direction; and
- it will help avoid the possibility of multiple and successive complaints, thereby reducing the regulatory burden.

7.145 Ofcom therefore considers that it is necessary to put in place an obligation to supply LLU backhaul using AISBO, in addition to the general access obligation (see above). Ofcom has therefore imposed a Direction under the access obligation for the wholesale AISBO market, requiring the supply of LLU backhaul.

7.146 Implementation of this regulation is also in line with the Commission's SMP Guidelines, which state at paragraph 119 that *"in the early stages of the new framework, the Commission would not expect NRAs to withdraw existing regulatory obligations which have been designed to address legitimate regulatory needs which remain relevant, without presenting clear evidence that those obligations have achieved their purpose and are no longer required since competition is deemed to be effective"*.

Responses to the draft notification – Direction on AISBO-based LLU backhaul

7.147 No comments, other than those which have already been taken into account, were received on this issue.

Conclusions – Direction requiring the provision of AISBO-based LLU backhaul

7.148 Having considered the responses to the draft notification, Ofcom has concluded that it is appropriate to impose the Direction under condition HH1 in Annex E. This condition remains in the same terms as the condition previously consulted on.

Communications Act tests

7.149 Ofcom considers that the Direction (Direction under condition HH1, set out in Annex E) meets the tests set out in the Act.

7.150 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, the Direction, by requiring BT to supply these products, encourages the provision of network access and service interoperability by allowing communications providers access to products that allow them to compete with BT at the retail level for the purpose of efficiency and sustainable competition in the markets for electronic communications networks, electronic communications services and associated facilities, in accordance with sections 4(7) and 4(8). In addition, as BT is a dominant communications provider in this market, requiring it to make this product available will ensure that competition in downstream markets is promoted, which will in turn promote the interests of competitors and end users, in accordance with sections 3(4)(b) and 4(3) of the Act.

7.151 Ofcom considers that the Direction satisfies the tests set out in section 49(2) of the Act. It is objectively justifiable, in that it relates to the need to ensure that competition develops to the benefit of consumers. It does not discriminate in that any provider of electronic communications networks, services or associated facilities can request access from a dominant provider. It does not discriminate against BT because BT has been found to hold a position of SMP in this market, and as such is in a particular position to exploit its advantages were this regulation not to be implemented. The Direction is set out in a transparent form in Annex E. Ofcom therefore considers that the obligation meets the requirement of transparency set out in the Act.

Wholesale alternative interface symmetric broadband origination markets: conclusion on regulation

7.152 Ofcom has concluded that BT has SMP in the AISBO market, and that as a consequence the following regulatory measures should be imposed in this market:

1. a general obligation to provide access on reasonable request;
2. requirement not to unduly discriminate;
3. basis of charges obligations (cost orientation and a cost accounting system);
4. accounting separation obligation;
5. requirement to publish a reference offer;

6. an obligation to give 90 days' notice of changes to prices, terms and conditions for existing products;
7. an obligation to give 28 days' notice of the introduction of prices, terms and conditions for new products;
8. requirement to provide quality of service information;
9. requirement to publish technical information with 90 days' notice; and
10. obligations relating to requests for new network access.

Conditions of entitlement reflecting these measures are primarily set out in Annex D. Cost accounting and accounting separation conditions will be set out in a separate statement on accounting issues, to be published in due course.

7.153 **Directions**

- A Direction under the general access condition to provide Ethernet-based LLU backhaul products, subject to specific terms and conditions; and
- A Direction under the cost orientation condition covering pricing matters relating to provide Ethernet-based LLU backhaul.

Directions reflecting these measures are set out in Annex E.

7.154 Ofcom considers that the above measures are, both individually and taken as a whole, sufficient and proportionate given that there is minimal competition to BT in this market. The obligations for this market are broadly similar to those currently applying in the symmetric broadband origination markets. As wholesale AISBO is an input for products in downstream retail markets, Ofcom needs to ensure that wholesale AISBO is available to communications providers to enable them to compete at a retail level.

Chapter 8

Regulatory remedies – SMP services conditions and Directions for BT's wholesale trunk segments market

Introduction

8.1 This chapter sets out the remedies for the wholesale trunk segments market for the UK. Note that this market extends to the whole of the UK including Hull, for the reasons set out in Chapter 2 and Annex A. However, as discussed in Chapter 2 the size of the Hull area means that the functionality provided by trunk segments is not warranted, and consequently the following regulation will not "bite" on BT in that area.

8.2 More general comments on the structure of the analysis and the aims of regulation are set out at the beginning of Chapter 6 – these comments apply equally to this market and to the wholesale symmetric broadband origination markets.

8.3 This chapter sets out the effect of, and Ofcom's reasons for, setting SMP services conditions in these markets. It also explains how certain tests in the Act are satisfied. The conditions in respect of BT are attached to the Notification in Annex D of this document, while the Directions are set out in Annex E.

8.4 The existing obligations applying in relation to the trunk segment market are as follows:

- obligation to offer wholesale trunk segments;
- non discrimination;
- cost orientation;
- cost accounting;
- accounting separation;
- publication of prices, terms and conditions;
- advance notification of prices, terms and conditions for new products;
- advance notification of changes to prices of existing products;
- requirement to provide quality of service information; and
- requirement to publish technical information.

8.5 In addition, these markets are subject to detailed regulation following these Directions:

- PPCs Phase I;
- PPCs Phase II; and
- LLU backhaul.

8.6 In its assessment of the wholesale trunk segment market set out in Chapter 3 and Annex B, Ofcom has concluded that the market is not effectively competitive and that BT should be designated as having SMP.

8.7 In the light of the above considerations in the draft notification, Ofcom made the following proposals for future regulation in the market for wholesale trunk segments:

1. obligation to provide access on reasonable request;

2. requirement not to unduly discriminate;
3. basis of charges obligations (cost orientation and a cost accounting system);
4. accounting separation obligations;
5. requirement to publish a reference offer;
6. same day notification of changes to prices, terms and conditions;
7. requirement to provide quality of service information;
8. requirement to publish technical information with 90 days' notice; and
9. obligations relating to requests for new network access.

8.8 In addition to the above conditions, Ofcom proposed making the following Directions under appropriate conditions:

10. Direction under the general access condition to provide PPCs at a range of bandwidths subject to specific terms and conditions;
11. Direction under the cost orientation condition covering pricing matters relating to PPCs and LLU backhaul;
12. Direction under the quality of service condition to require specific information in respect of PPCs;
13. Direction under the general access condition to provide RBS backhaul link products; and
14. Direction under the general access condition to provide LLU backhaul products.

Wholesale trunk regulation 1: Requirement to provide network access on reasonable request

8.9 Section 87(3) of the Act authorises the setting of SMP services conditions requiring the dominant provider to provide network access as Ofcom may from time to time direct. These conditions may, pursuant to section 87(5) include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions. When considering the imposition of such conditions in a particular case, Ofcom must have regard to the 6 factors set out in section 87(4) of the Act, including, *inter alia*, the technical and economic viability of installing other competing facilities and the feasibility of the proposed network access.

8.10 BT is currently required to provide wholesale trunk segment services on reasonable request. It is also, as noted in Chapter 2, obliged to offer wholesale trunk services as part of some PPC products, under the terms of the PPC Directions.

8.11 BT has been found to have SMP in this market. A general obligation to provide access on reasonable request will enable communications providers to negotiate wholesale trunk segment products according to their needs, enabling them to compete in the retail market and leading to more competition and encouraging lower prices in the markets for retail leased lines and value added business solutions. If the obligation were not imposed, BT would be able to deny access or impose unreasonable terms having a similar effect, thereby hindering the emergence of a competitive retail market.

8.12 While formulation of specific obligations may from time to time be appropriate, either for the avoidance of doubt or in resolving a dispute, Ofcom proposes to rely as far as possible on the general obligation. This removes the need for Ofcom to specify the details of products to be supplied (which it is often not best placed to do), and provides a regime which is responsive to future market and technical developments. While the scope is broad, it is appropriately limited by the ability of

BT to refuse any request which is unreasonable. Without such an obligation, communications providers and customers could be forced to buy from a range of suppliers in order to supply one end-to-end leased line, which may not be as effective.

8.13 Reliance on the Competition Act for communications providers' general access requirements will, in Ofcom's view, be insufficient because of the network-based nature of the industry, and would be inconsistent with Ofcom's objective of promoting competition. Ofcom therefore considers that it is necessary to impose a general access obligation requiring BT to supply trunk products upon reasonable request.

8.14 As explained in Chapter 6, Ofcom has concluded that CSH and ISH interconnection services (including the ISH extension and STM-1 point of handover ISH and CSH products discussed below) can be considered as a technical area related to the markets where Ofcom has found SMP. Ofcom has therefore applied this condition also to the technical areas outlined in Chapter 6.

Responses to the draft notification – obligation to provide network access

8.15 It was suggested by one communications provider that unbundled fibre should be provided for the provision of trunk otherwise any innovation in this area would rely on BT.

8.16 As Ofcom has previously explained in Chapter 2, unbundled (dark) fibre is not a market that is being considered as part of this review. As such, no SMP designation has been placed on BT and no obligations can be imposed by Ofcom as regards the provision of dark fibre.

8.17 BT raised concern at an apparent reference by Ofcom to the provision of standalone trunk segments in the context of BT's obligation to provide network access. BT suggested that it should not be obliged to offer standalone trunk PPCs due to the absence of any market justification for this.

8.18 As BT correctly points out, it was under no obligation to provide standalone trunk segments under the previous regulatory regime. However, standalone trunk segments are identical to those trunk segments provided with terminating segments and so would appear to fall within the scope of the market for trunk segments identified by Ofcom. Were Ofcom to receive a dispute in future regarding any refusal by BT to provide standalone trunk segments, it would have to consider the dispute on its merits and whether it would be reasonable to require the provision of such a product. The criteria for whether or not a product request is reasonable or not are currently set out in Oftel's Access Guidelines. However, Ofcom is not currently aware of any reason why such provision should be considered unreasonable.

Conclusions – obligation to provide network access

8.19 Having considered the responses to the draft notification, Ofcom has concluded that it is appropriate to impose a network access condition in this market in the form set out at Annex D.

Communications Act tests

8.20 Ofcom considers that the condition (Condition H1 in Annex D) meets the tests set out in the Act.

8.21 In Ofcom's view, this condition meets the tests set out in Section 47 of the Act. The condition is objectively justifiable, in that it relates to the need to ensure that competition develops to the benefit of consumers. It does not unduly discriminate, as it is imposed on BT and no other communications provider has SMP in this market. It is proportionate, since it is targeted at addressing the market power that BT holds in this market and does not require it to provide access if it is not technically feasible or reasonable. Finally, it is transparent in that it is clear in its intention to ensure that BT provides access to its network in order to facilitate competition.

8.22 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4 of the Act. In particular, because it requires BT to provide the necessary access products, the condition encourages the provision of network access and service interoperability for the purpose of ensuring efficiency and promoting competition in the downstream markets, in accordance with sections 4(7) and 4(8). As BT has market power in the provision of wholesale trunk segments, it controls a key input into a range of downstream services – principally leased lines but also virtual private networks, managed services etc. In requiring this condition, Ofcom is promoting competition and the interests of consumers and maximising choice in the markets for those downstream services, in accordance with sections 3(4(b) and 4(3).

8.23 Ofcom considers that imposition of this condition satisfies the conditions set out in section 87(4) of the Communications Act. Given the limited potential for the development of alternative facilities in the current market, Ofcom considers that this condition is fair and reasonable. Since BT is currently required to provide trunk segments on request and offers trunk segment as part of some PPC products, Ofcom is satisfied that this condition is feasible. Ofcom believes that this condition is fair and reasonable taking into account the investment made by BT in its network, which means that it is in a position to provide access to wholesale trunk segment products on reasonable request. Ofcom considers that this condition, by ensuring that communications providers will be able to offer products based on leased lines in competition with BT, addresses the need to secure effective competition in the long term. In addition Ofcom considers that it will address the goal of ensuring that services based on leased line components are provided throughout the UK.

Wholesale trunk regulation 2:
Requirement not to unduly discriminate

8.24 Section 87(6)(a) of the Act authorises the setting of an SMP services condition requiring the dominant provider not to unduly discriminate against particular persons, or against a particular description of persons, in relation to matters connected with the provision of network access.

8.25 The requirement not to unduly discriminate is intended, principally, to prevent dominant providers from discriminating in favour of their own retail activities and to ensure that competing providers purchasing wholesale products from the dominant provider are placed in an equivalent position to the dominant provider's retail arm.

8.26 Where dominant providers are vertically integrated, like BT, they may have an incentive to provide wholesale services on terms and conditions that favour their own retail activities, in a way that would have a material adverse effect on competition. In particular, they may charge competing providers more than the amount charged (through transfer charging) to their own retail activities for wholesale services, thereby increasing the costs of competing providers and giving themselves an unfair competitive advantage. They might also provide services on different terms and conditions, for example with different delivery timescales, which would disadvantage their retail competitors and in turn consumers.

8.27 Ofcom's assessment of SMP in wholesale trunk segments has established that within this national market there is some variation in competitive pressures between trunk segment routes. The variations are not sufficient, however, to result in separate geographic markets being identified as was explained in Chapter 2. Ofcom considers that the variations in competition should therefore, where possible, be reflected in the regulatory remedies.

8.28 Oftel proposed in the draft notification that the application of a no undue discrimination condition should not prevent BT from engaging in discrimination, in the form of geographically de-averaged tariffs, i.e. charging different prices for trunk segments at different locations within its network or on different routes, provided that in doing so it did not discriminate between communications providers at the same location or on the same route or have a material adverse effect on competition.

8.29 Oftel considered this to be a flexible regulatory solution tailored to the specific conditions operating in this market. It would prevent BT from entering into agreements with particular communications providers that would put their competitors at a disadvantage, whilst giving it the flexibility to offer competitive deals to all communications providers in parts of the country where greater competition prevails.

8.30 It could be argued that the Competition Act provides adequate provision to address allegations or gather evidence of discriminatory behaviour. However, Ofcom considers that at the wholesale level sectoral regulation provides a faster and more secure means of giving effect to decisions and determinations. In addition, it allows Ofcom to place a greater emphasis on promoting competition (for example by restricting the ability of an SMP communications provider to foreclose segments of the retail market).

8.31 It might also be argued that a requirement not to unduly discriminate prevents BT from fully exploiting its economies of scale. If BT were able to discriminate, it would be able, when needed, to quote a lower price in order to attract sufficient numbers of customers to ensure that its infrastructure is utilised at full capacity. Although this is a valid consideration, Ofcom considers that it is far outweighed by the fact that in view of BT's position of SMP, it would also be able to use discrimination for other purposes less constructive than maximisation of capacity utilisation, and that this would have a harmful effect on competition. Furthermore, the proposal that BT be allowed to discriminate geographically in this market provides BT with considerable additional flexibility for utilising its capacity efficiently.

8.32 A prohibition of discrimination might have disadvantages if it prevented discrimination that was economically efficient or justified. However, the condition provides that there should be no *undue* discrimination. Consideration as to how undue discrimination might be treated was included in Oftel's Access Guidelines (it should be noted that Ofcom intends to consult on non-discrimination guidelines later on in 2004). Oftel's Guidelines note that any obligation with respect to undue discrimination has the objective of preventing behaviour that has a material adverse effect on competition. This does not mean that there should not be any differences in treatment between undertakings, rather that any differences should be objectively justifiable, for example, by differences in underlying costs of supplying different undertakings. The Guidelines also note that in Oftel's view, there is a rebuttable presumption that a vertically integrated SMP communications provider discriminating in favour of its own retail activities or between others of its own activities would have a material adverse effect on competition (paragraph 3.9). This view would also apply to discrimination in relation to the underlying components of services.

8.33 As explained in Chapter 6, Ofcom has concluded that CSH and ISH interconnection services (including the ISH extension and STM-1 point of handover ISH and CSH products discussed below) can be considered as a technical area related to the markets where Ofcom has found SMP. Ofcom has therefore also applied this condition to the technical areas outlined in Chapter 6.

Responses to the draft notification – no undue discrimination

8.34 No comments were received on this issue.

Conclusions – no undue discrimination

8.35 For the reasons set out above, Ofcom has concluded that it is appropriate to impose condition H2 in Annex D, which prohibits *undue* discrimination. This condition remains in the same terms as the condition previously consulted on.

Communications Act tests

8.36 Ofcom considers that the condition meets the tests set out in the Act.

8.37 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, because it requires BT to provide the necessary access products on a non discriminatory basis, the condition encourages the provision of network access and service interoperability for the purpose of efficiency and sustainable competition in the downstream markets, in accordance with sections 4(7) and 4(8). As BT has market power in the provision of wholesale trunk segments, it controls a key input into a range of downstream services – principally leased lines but also virtual private networks, managed services etc. By allowing communications providers access on non-discriminatory terms, competition at the retail level will be encouraged, thereby promoting competition and the interests of consumers and maximising choice in the markets for those downstream services, in accordance with sections 3(4)(b) and 4(3) of the Act.

8.38 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. Ofcom considers that this condition is objectively justifiable, in that it provides safeguards to ensure that competitors, and hence consumers, are not disadvantaged by BT discriminating in favour of its own retail activities or between its own different activities. It does not unduly discriminate, as it is imposed only on communications providers who have SMP. It is proportionate since it only prevents discriminatory behaviour which is unduly discriminatory. Finally, it is transparent in that it is clear in its intention to ensure that BT does not unduly discriminate.

8.39 Ofcom considers that imposition of this condition satisfies the conditions set out in section 87(4) of the Communications Act. Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition, as it will ensure that other communications providers are able to make effective use of wholesale inputs and offer products based on these wholesale inputs in competition with BT. By allowing communications providers access on non-discriminatory terms, competition at the retail level will be encouraged, thereby addressing the goal of ensuring that services based on leased line components are provided throughout the UK (excluding Kingston upon Hull).

Wholesale trunk regulation 3: Basis of charges obligations (cost orientation and a cost accounting system)

8.40 Section 87(9) authorises the setting of SMP services conditions imposing on the dominant provider rules concerning the recovery of costs and cost orientation.

8.41 As BT has been identified as having SMP in this market, the availability of wholesale trunk segments at cost oriented prices would ensure that communications providers were able to compete in the retail leased lines markets in such a way that it results in downward pressure on retail prices and provides the benefits of competition to customers.

8.42 It might be argued that the Competition Act should be used to avoid excessive or predatory pricing. However, Ofcom considers that sectoral tests are likely to be more stringent and more effective than the Competition Act, giving the SMP communications provider less latitude and providing greater certainty for access customers.

8.43 One possibly valid argument against a cost orientation condition is that it could potentially have an adverse effect on competition from other providers of trunk segments. Furthermore, as BT's market power in this market is less on some routes than in the symmetric broadband origination markets, Ofcom is conscious of the need to ensure that the obligation does not discourage either existing competitors or future entrants.

8.44 Ofcom intends to balance this need against the requirement to ensure that the level of input prices does not impede its objective of reducing the current excessive pricing in the retail leased lines markets. Ofcom is allowing BT to set geographically de-averaged prices for trunk segments. This will allow BT to better reflect the costs of provision and level of competition on individual routes and over time could lead to the development of separate geographic markets that could be deregulated where competitive. Ofcom recognises that this 'case by case' approach might potentially be less effective and less certain than a more rigorous application of cost orientation – and that this could in itself discourage competition.

8.45 Ofcom believes, on balance, that the condition provides sufficient flexibility to allow this balance to be struck in an appropriate way. Ofcom would hope that the condition effectively becomes a power in reserve, and that the pricing structures and levels set by BT achieve these objectives.

8.46 Having considered all the arguments, Ofcom believes that it is necessary to apply this obligation.

8.47 As explained in Chapter 6, Ofcom has concluded that CSH and ISH interconnection services (including the ISH extension and STM-1 point of handover ISH and CSH products discussed below) can be considered as a technical area related to the markets where Ofcom has found SMP. Ofcom has therefore also applied this condition to the technical areas outlined in Chapter 6.

8.48 The condition sets out that the charges for services should be reasonably derived from the costs of providing those services. It further states that the costs must be calculated on a forward looking long run incremental cost approach, allowing an appropriate mark-up for the recovery of common costs including an appropriate return on capital employed.

8.49 The condition will apply across all services within this market. This means that the price of all services provided by BT in the market should be based on LRIC and allowing an appropriate mark-up for the recovery of common costs.

8.50 Ofcom confirms that all new services that are introduced into this market will also be covered by the same pricing rule. This is because new services in the same market would be expected to be subject to the same competitive conditions as existing services. This does not however mean that BT cannot recover costs appropriate to new wholesale services. The recovery of efficiently incurred costs for new wholesale services is discussed in Oftel's access guidelines.

8.51 Although this condition will apply to all services in this market, and the expectation is that the treatment of new services under the condition will be the same as for existing services, there may be occasional exceptions to this rule. This may arise where the new service is innovative and thus warrants a different regulatory approach. There are three ways in which such services can be dealt with.

i) The service may be so innovative that it falls in a completely new and separate market. In this case the appropriate regulatory obligations will be determined by Ofcom following analysis of this new market.
ii) The new service falls within the market but Ofcom determines that an alternative charging basis is appropriate. For example, a different charging basis may be appropriate for services offered during a trial.
iii) The new service falls within the market and the cost orientation obligation is applied, but there might be a range of prices which would be consistent with cost orientation given the uncertainty about the take up and future profitability of the service. In determining whether a charge is not cost oriented, Ofcom would consider whether the expected or achieved return on capital was excessive. In making this assessment, Ofcom will need to take account of the risk of the new service failing and the lost investment that would result. This therefore maintains an appropriate incentive for the communications provider to invest in new services and technologies.

8.52 The condition contains a clause enabling Ofcom to determine that a price need not be set on a forward-looking LRIC basis. This is particularly relevant to scenario ii) above where Ofcom determines that an alternative charging basis is appropriate. If BT wishes to set a price for a service in any of the markets on any other basis than forward-looking LRIC, it must apply to Ofcom for permission to do this.

8.53 Ofcom considers that the cost orientation condition is justifiable and a proportionate response to the extent of competition in the markets analysed. It enables competitors to purchase services at a rate which will enable them to develop competitive services to the benefit of consumers, whilst at the same time allowing BT a fair rate of return which it would expect in a competitive market. The potential for a degree of flexibility envisaged in the approach to the recovery of cost of capital recognises that some investments will carry a higher degree of risk than others and does not remove incentives for the development of new services.

Responses to the draft notification – basis of charges obligations

8.54 The introduction of de-averaged trunk pricing was opposed by a number of communications providers. It was suggested that BT’s ability to raise or lower trunk prices at could undermine capital investment by competitors thereby harming competition. Communications providers argued that the true cost of trunk should be examined so that a proper assessment could be made as to whether and individual trunk route charges set by BT are cost oriented.

8.55 Communications providers also suggested that de-averaging trunk would increase concerns about transfer prices to BT Retail and could also lead to billing problems – both as regards BT’s ability to bill accurately and the need for communications providers to make costly alterations to their own billing systems.

8.56 Communications providers further pointed out that de-averaged trunk pricing would lead to higher prices for trunk in more remote areas, which is not in the interests of consumers living in these areas.

8.57 Ofcom is surprised that communications providers believe that BT would be able to raise or lower trunk prices at will on specific routes. BT would still be obliged to price for trunk on a cost oriented basis and given that costs are unlikely to change on a regular basis, Ofcom would expect trunk prices to remain relatively stable once de-averaged prices are set.

8.58 Ofcom considers it premature to carry out a full analysis of the cost to BT of providing trunk and intends only to carry out such an assessment if it receives evidence-based complaints that the trunk prices set by BT are not cost oriented. Similarly, Ofcom notes communications providers concerns about transfer charges and BT’s ability to bill accurately and will look at any complaints on these issues that it receives once the obligations take effect.

8.59 Ofcom is aware that the implications of geographically de-averaged pricing is that consumers living is some areas will face higher prices than those living in other areas. Just as it is not in the interests of some consumers to face higher prices, it similarly is not in the interests of other consumers to pay averaged charges when the actual cost of providing trunk to them is substantially lower than the averaged price.

Conclusions – basis of charges obligations

8.60 Having considered the responses to the draft notification, Ofcom has concluded that it is appropriate to impose a condition in these markets in the form set out at Annex D. Ofcom recognises the concern of communications providers that the condition gives too much freedom to BT and that the effect of this will be to dampen competition in downstream markets. There is a balance to be struck here. Giving more freedom to BT will have the effect of intensifying competition on certain routes, which is beneficial to the end user. Ofcom believes that it has struck the balance appropriately. Nevertheless, Ofcom will be alert for unwanted effects of this approach and will propose corrective measures, if it proves necessary.

Communications Act tests

8.61 Ofcom considers that the condition (Condition H3 in Annex D) meets the tests set out in the Act.

8.62 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, the condition encourages the provision of network access and service interoperability for the purpose of efficiency and sustainable competition in the markets for electronic communications networks, electronic communications services and associated facilities, in accordance with sections 4(7) and 4(8). This is because excessively high pricing of wholesale inputs distorts allocation of resources and leads to inefficiency for retail competitors who may be forced into using less efficient alternative technologies. Ensuring that BT as the dominant provider is unable to charge excessive prices will therefore promote competition and thereby promote the interests of end users, in accordance with sections 3(4)(b) and 4(3) of the Act.

8.63 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. Ofcom considers that the condition is an objectively justifiable and proportionate response to the extent of competition in the markets analysed, as it enables competitors to purchase services at charges that will enable them to develop competitive services to the benefit of consumers, whilst at the same time allowing BT a fair rate of return that it would expect in competitive markets. It does not unduly discriminate, as it is imposed on BT and no other communications provider has SMP in this market. Finally, it is transparent in that it is clear in its intention to ensure that BT charges on a LRIC plus mark-up basis.

8.64 Ofcom considers that imposition of this condition satisfies section 88 of the Act since without it there is a relevant risk of adverse effects arising from price distortion by BT, which has SMP in this market, fixing and maintaining some or all of its prices at an excessively high level, so as to have adverse consequences for end users of public electronic communications services. Ofcom further considers in this connection that the condition is appropriate for the purposes of promoting efficiency and sustainable competition and conferring the greatest possible benefits on the end users of public electronic communications services.

Wholesale trunk regulation 4:
Accounting separation obligation

8.65 Ofcom has imposed an accounting separation obligation in this market. This is discussed in Chapter 10, along with justification against the various regulatory tests. The precise wording of the condition is discussed in more detail in the separate accounting consultation document published by Ofcom on 8 April 2004, available at http://www.ofcom.org.uk/consultations/past/fin_reporting/?a=87101.

Wholesale trunk regulation 5:
Requirement to publish a reference offer

8.66 Section 87(6)(c) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information for the purpose of securing transparency. Section 87(6)(d) also permits the setting of conditions requiring the dominant provider to include specified terms and conditions into the reference offer.

8.67 BT is currently obliged to publish prices, terms and conditions for PPCs in its Standard Interconnect Agreement. Under this obligation, BT would have to publish in respect of its wholesale trunk segment services the prices, terms and conditions in the form of a Reference Offer (RO) – the published RO must include:

- a clear description of the services on offer;
- terms and conditions including charges and ordering, provisioning, billing and dispute resolution procedures . The RO should provide sufficient information to enable communications providers to make technical and commercial judgements such that there is no material adverse effect on competition;
- information relating to technical interfaces and points of interconnection. Such information should ensure that providers are able to make full and effective use of all the services provided;
- conditions relating to maintenance and quality (service level agreement). The inclusion of service levels, as part of the contractual terms of the RO, that provides for a minimum acceptable level of service, will ensure that services are provided in a fair, reasonable, timely and non-discriminatory fashion; and
- terms and conditions that are fair and reasonable. This will ensure that products are offered on terms and conditions as they would in a competitive market and that they are sensible, practical, and do not impose a margin squeeze on competitors.

8.68 The obligation prohibits BT from departing from the charges terms and conditions in the Reference Offer and requires BT to comply with any Directions Ofcom may make from time to time under the condition.

8.69 Requiring BT to publish prices, terms and conditions would help to create transparency in this market where BT has been identified as having SMP. Since wholesale trunk segments are an input for retail products, transparency is necessary to ensure competition in downstream (retail) markets.

8.70 It could be argued that an obligation to publish prices could lead to communications providers following BT's prices, rather than being dynamic in setting prices at the true competitive level. Buyers would not be able to exert so much power in the market as BT would be unable to offer bespoke deals. If Ofcom did not impose this obligation then BT would have more opportunity to respond to competitive pressures on the routes where these are greater.

8.71 However, Ofcom considers that imposition of this obligation is necessary to assist with the policing of potential vertical discrimination between downstream communications providers, including BT. It does not prevent BT from engaging in geographic discrimination between routes, as described above.

8.72 The condition also requires BT to publish information on the use of network components in providing trunk services. Network components for trunk services will be reviewed in the work stream referred to in paragraph 7.35 of Ofcom's statement of April 2004 on *The regulatory financial reporting obligations on BT and Kingston Communications in markets where SMP has been demonstrated*. Following this review, it is likely that Ofcom will direct changes to the current network component list to include appropriate network components for trunk services. Once this anticipated direction is finalised, the obligation to publish this information will be more meaningful. This will help Ofcom to monitor the effectiveness of BT's non-discrimination obligations, and to deal with any complaints about breaches of those obligations. This is discussed in more detail in Chapter 10.

8.73 Ofcom therefore considers that a price publication obligation should be put in place. This accords with Article 9 and with Recital 16 of the Access Directive, which states that transparency of terms and conditions for access and interconnection, including prices, serves to speed up negotiation, avoid complaints and give confidence to market players that a service is not being provided on discriminatory terms.

8.74 This obligation will ensure that communications providers, end users and others are able to put to Ofcom fully justified and objectively reasoned complaints of anti-competitive behaviour by BT, and to obtain redress where appropriate.

8.75 As explained in Chapter 6, Ofcom has concluded that CSH and ISH interconnection services (including the ISH extension and STM-1 point of handover ISH and CSH products discussed below) can be considered as a technical area related to the markets where Ofcom has found SMP. Ofcom has therefore also applied this condition to the technical areas outlined in Chapter 6.

Responses to the draft notification – requirement to publish a reference offer

8.76 No comments were made on this issue.

Conclusions – requirement to publish a reference offer

8.77 For the reasons set out above, Ofcom has concluded that it is appropriate to impose a condition in these markets in the form set out at Annex D.

Communications Act tests

8.78 Ofcom considers that the condition (Condition H4 in Annex D) meets the tests set out in the Act.

8.79 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, the condition encourages compliance with the requirement not to discriminate unduly, for the purpose of facilitating service interoperability and securing freedom of choice for the customers of communications providers, by making BT's contractual terms more transparent, in accordance with sections 4(7) and 4(8). It promotes the interests of purchasers of wholesale trunk segments services by enabling them to adjust their downstream offerings in competition with BT, in response to changes in BT's terms and conditions. It also promotes competition in the wholesale trunk segments market by allowing BT's competitors in the provision of wholesale trunk segments services to make appropriate changes to their products. Finally, it will allow Ofcom more easily to monitor discrimination, so ensuring competition in the downstream markets, in accordance with sections 3(4)(b) and 4(3) of the Act.

8.80 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The condition is objectively justifiable in that it requires that terms and condition are published in order to encourage competition and provide stability in markets by providing transparency of BT's prices, terms and conditions, thereby allowing communications providers to better plan their businesses and customer relationships. It is proportionate, as only information that is necessary to ensure that that there is no material adverse effect on competition is required to be provided. It does not unduly discriminate as it is applied to BT and no other provider has SMP in this market. Finally, it is transparent in that it is clear in its intention to ensure that BT publishes details of its terms and conditions.

8.81 Ofcom considers that imposing this obligation satisfies the conditions set out in section 87(4) of the Communications Act. Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition, as it will ensure that communications providers are able to make effective use of wholesale inputs and offer products based on leased lines in competition with BT. In addition it will address the goal of ensuring that services based on leased line components are provided throughout the UK.

Wholesale trunk regulation 6: Requirement to provide notification of changes to prices, terms and conditions

8.82 Section 87(6)(b) of the Act authorises the setting of SMP services conditions requiring the dominant provider to publish, in such manner as Ofcom may direct, the terms and conditions on which it is willing to enter into an access contract (e.g.: by publication of a reference offer).

8.83 BT is currently required to give advance notification of price changes for certain products as part of its Standard Interconnect agreement (one day for competitive products, 28 days for prospectively competitive products and 90 days for non competitive products). This condition would maintain an obligation to provide notification of changes to prices, terms and conditions of wholesale trunk segments.

8.84 BT has been identified as having SMP in this market. Ofcom considers that a requirement to notify prices terms and conditions for new products, and changes to prices terms and conditions for existing products, will make that information more easily accessible to Ofcom and allow him to take prompt action in the event of a complaint or own initiative investigation into the prices terms or conditions. It will also enable Ofcom to monitor BT's performance against its non discrimination obligation.

8.85 It could be argued that it would be unnecessarily onerous to require BT to provide advance notification of new products or changes to existing products, leading to a 'chilling' effect where communications providers follow BT's prices rather act dynamically to set competitive prices. Ofcom agrees that for this market, where BT's market share is not as great as that in the symmetric broadband origination market, the costs of requiring BT to provide advance notice of such information are likely to outweigh the benefits.

8.86 However, Ofcom considers that there are distinct advantages in requiring BT to provide same-day notification. It will allow Ofcom to keep up to date with changes to BT's wholesale trunk segments products, and in addition it will give to those communications providers who use BT's trunk segments products as wholesale inputs the scope to make appropriate adjustments to their retail product range.

8.87 Ofcom has therefore concluded that it would be most appropriate to require BT to provide same-day notification of the prices, terms and conditions for new products and changes to the prices, terms and conditions of existing products, for its wholesale trunk segments.

8.88 As explained in Chapter 6, Ofcom has concluded that CSH and ISH interconnection services (including the ISH extension and STM-1 point of handover ISH and CSH products discussed below) can be considered as a technical area related to the markets where Ofcom has found SMP. Ofcom has therefore also applied this condition to the technical areas outlined in Chapter 6.

8.89 As noted above, Ofcom considers that transparency obligations, which include notification of prices, accord with Recital 16 of the Access Directive, which states that transparency of terms and conditions for access and interconnection, including prices, serves to speed up negotiation, avoid complaints and give confidence to market players that a service is not being provided on discriminatory terms.

Responses to the draft notification – same day notification

8.90 It was suggested by some communications providers that same-day notification will impact their ability to make accurate tender bids as they face the risk that trunk prices may change at short notice.

8.91 Ofcom considers that the effects of same-day notification of trunk prices will apply equally to all purchasers of trunk, including BT's own retail arms. The non discrimination obligation requires that BT give its own downstream businesses the same notice as it gives other communications providers. All communications providers tendering for a bid should, therefore, be in the same position as regards knowledge of when/if trunk prices will change.

8.92 Ofcom further notes that the risk of inaccurate tender bids being made could equally apply to situations where a 28 days price notification was in place, though clearly the longer the notification period, the lower the risk of this occurring. Ofcom does not consider that the small increase in the risk of making an inaccurate tender bid is sufficient to outweigh the risks of the chilling effect described above.

Conclusions – same day notification

8.93 Ofcom has concluded that it is appropriate to require BT to publish and notify amendments and new charges, terms and conditions on the day that those amendments or new charges, terms and conditions come into force. This option provides a degree of certainty that all tariffs, terms and conditions will be published and offers the benefits of notification for monitoring purposes without facilitating price following.

8.94 As Ofcom believes BT has SMP in this market, a price publication and notification obligation is needed to provide Ofcom and competitors with visibility of possible anti competitive behaviour.

8.95 Ofcom has included a power to disapply the condition by consent where, for example, BT has notified Ofcom that for a limited period it is not making the services publicly available while it assesses the technical or commercial viability of the service.

Communications Act tests

8.96 Ofcom considers that the condition (Condition H5 in Annex D) meets the tests set out in Section 47 of the Act. The justification for imposing the condition is that general and reliable visibility of a dominant communications provider's prices is needed to enable Ofcom and competitors to monitor BT's prices for possible anti competitive behaviour. Imposition of this condition does not discriminate unduly against BT as it is the only communications provider in the market with SMP; the behaviour of other communications providers is not capable of having a materially adverse effect on competition as these communications providers do not have market power. The remedy is proportionate, as it is the least burdensome means of achieving the objective of transparency, and the requirement is made fully transparent in Annex D.

8.97 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, the condition encourages compliance with transparency, for the purpose of facilitating service interoperability and securing freedom of choice for the customers of communications providers, in accordance with sections 4(7) and 4(8). It promotes the interests of purchasers of wholesale trunk segments services by enabling them to adjust their downstream offerings in competition with BT, in response to changes in BT's terms and conditions by informing them of when those changes are going to occur, thereby allowing them to better plan their businesses and relationships with their customers. It also promotes competition in the wholesale trunk segments market by allowing BT's competitors in the provision of wholesale trunk segments services to make appropriate changes to their products. Finally, it will allow Ofcom more easily to monitor discrimination, thereby ensuring competition in the downstream markets, in accordance with sections 3(4)(b) and 4(3) of the Act.

8.98 Ofcom considers that imposing this obligation satisfies the conditions set out in section 87(4) of the Communications Act. Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition in the long term, by ensuring communications providers have access to transparent information that enables them to make effective use of wholesale inputs and offer products based on leased lines in competition with BT In addition it will address the goal of ensuring that services based on leased line components are provided throughout the UK.

Wholesale trunk regulation 7:
Obligation to provide quality of service information

8.99 Section 87(6)(b) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information for the purpose of securing transparency. The condition imposed by Ofcom in Annex D requires BT to publish such information in the manner and form required by Ofcom.

8.100 This obligation requires BT to publish certain information relating to the quality of the service it delivers in providing wholesale trunk segment products. The condition has the potential to deliver benefits in a number of areas, most notably prevention of undue discrimination. Other benefits include, for example, benchmarking with international comparators in situations where BT delivers a similar quality of service to all communications providers including itself, but this level of service falls short of the service generally offered in comparable countries, most notably within the EU.

8.101 The principle of no undue discrimination is intended to ensure that communications providers with SMP do not distort competition. As noted in Recital 17 of the AID, the application of this principle is particularly important where a vertically integrated communications provider, with market power in a particular wholesale market, supplies services to other communications providers with whom they compete in a downstream retail market.

8.102 Section 87(6)(a) of the Communications Act allows Ofcom to impose a no undue discrimination condition on a dominant provider where there has been an SMP determination in an identified market. The no undue discrimination condition set out in Annex D requires the dominant provider not to unduly discriminate against particular persons, or against a particular description of persons, in relation to matters connected with network access.

8.103 It might be argued that a dominant communications provider should meet a no undue discrimination condition by providing wholesale services to other communications providers using the same operational processes and interfaces it uses to supply itself. However, the high cost of replacing legacy systems means that this will not always be practical. Instead, Ofcom considers that the most objectively justifiable and proportionate means of meeting a no undue discrimination condition is to require that a dominant communications provider deliver the same operational performance to other communications providers as it delivers to itself. Specifically, this means that Key Performance Indicators (KPIs) such as ordering times and fault response times must be the same.

8.104 Ofcom believes that the only means of ensuring that there is no undue discrimination as to quality of service is by imposing a requirement to publish such information. Without such a requirement, Ofcom believes that it would be impossible to monitor that the different operational processes used by the dominant communications provider were delivering an equivalent quality of service.

8.105 Ofcom believes that it is insufficient to rely on requesting the necessary quality of service information each time it is required, as suggested in paragraph 3.51 of Oftel's Access Guidelines. In the absence of an *ex ante* obligation to do so, there is no guarantee that the necessary information will be collected at the time of any given event. It is not in general possible to reconstruct data for operational performance retrospectively.

8.106 Ofcom therefore concludes that this obligation should be imposed. As explained in Chapter 6, Ofcom has concluded that CSH and ISH interconnection services (including the ISH extension and STM-1 point of handover ISH and CSH products discussed below) can be considered as a technical area related to the markets where Ofcom has found SMP. Ofcom therefore intends to apply this condition also to the technical areas outlined in Chapter 6.

8.107 The specific condition (set out in Annex D) imposed by Ofcom requires BT to publish data on a specified set of KPIs, with a format and frequency to be determined by Ofcom. This condition follows section 87(6)(b)) which allows Ofcom to impose a condition of transparency whereby Ofcom can require a dominant provider to publish all such information as directed by it to secure transparency in relation to matters such as non-discrimination.

8.108 It is Ofcom's intention that the scope of publication should take account of the potential conflict between any obligation to publish performance data, in order to provide transparency, and the need to maintain commercial confidentiality.

8.109 For the wholesale fixed narrowband and wholesale broadband access market reviews, Ofcom has set out the specific KPIs to be covered by the condition, as well as the publication process and frequency, in a separate Consultation Document issued on 27 May 2004 – see www.ofcom.org.uk/consultations/current/bt_kpi/?a=87101. Ofcom intends to finalise the Directions in the Autumn.

8.110 For this market, however, the issues have recently been addressed in some detail by the PPC Phase 2 Direction published by Oftel in December 2002, and Ofcom has re-made the majority of those measures by means of a Direction under this condition which will apply only to trunk segments where they form part of PPCs. This is discussed in detail in the section "Direction under quality of service information condition requiring BT to provide specific information in respect of PPCs", below. The Direction made under this transparency condition takes Oftel's Access Guidelines into consideration as appropriate.

8.111 Implementation of this regulation is in line with the Commission's SMP Guidelines, which state at paragraph 119 that "in the early stages of the new framework, the Commission would not expect NRAs to withdraw existing regulatory obligations which have been designed to address legitimate regulatory needs which remain relevant, without presenting clear evidence that those obligations have achieved their purpose and are no longer required since competition is deemed to be effective". It will enable Ofcom to make Directions requiring BT to publish specific quality of service information.

Responses to the draft notification – quality of service

8.112 No comments were made on this issue.

Conclusions – quality of service

8.113 Ofcom has concluded that it is appropriate to impose condition H6 in Annex D, which requires BT to publish quality of service information. This condition remains in the same terms as the condition previously consulted on.

Communications Act tests

8.114 Ofcom considers that the condition meets the tests set out in the Act.

8.115 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, the condition encourages the provision of network access and service interoperability for the purpose of securing the maximum benefit for the persons who are customers of communications providers and of persons who make such facilities available, in accordance with sections 4(7) and 4(8). It promotes competition and thereby the interests of end users in downstream markets in accordance with sections 3(4)(b) and 4(3) of the Act, by denying BT as the dominant provider in this market the opportunity to discriminate in the quality of service it provides to customers.

8.116 It is Ofcom's current view that the transparency condition in this statement satisfies the relevant requirements specified in section 47(2) of the Act (as referred to above). In particular, Ofcom considers that

- The condition is objectively justifiable because it is the only means of ensuring that a dominant communications provider provides an equivalent quality of service to other communications providers as it provides to itself. This is necessary in order to prevent a vertically integrated communications provider, with market power in a particular wholesale market, leveraging this into a downstream market.
- The condition does not unduly discriminate against a particular person because it applies to the dominant provider in circumstances where there has been an SMP determination. In the case of the dominant provider, the supply of wholesale services must be in sufficient volume for the publication of KPI data to be statistically meaningful.
- The condition is proportionate to what it is intended to achieve. Publication is only required where wholesale remedies have been imposed and where the demand for the product or service is sufficient that the data provided would be statistically meaningful.
- The condition provides transparency in relation to what it is intended to achieve because the objective of the condition relates to the problem identified in the market, and *inter alia* it is aimed at ensuring non-discrimination specifically in relation to the quality of service provided by the dominant provider in respect of its key business processes.

8.117 Ofcom has also had regard to its duties under section 4 of the Act, in particular the requirement to promote competition. Ofcom considers that its proposals promote competition amongst providers of electronic communications networks and services as the KPIs are designed to ensure that alternative communications providers have an equivalent opportunity to compete with BT.

8.118 In addition, Ofcom considers that imposition of this condition satisfies the conditions set out in section 87(4) of the Communications Act. Overall, given the potential for the development of alternative facilities in the current market, Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition in the long term, as it will ensure that communications providers are able to make effective use of wholesale inputs and offer products based on leased lines in competition with BT. It will also assist monitoring of BT's compliance with a non discrimination condition. In addition it will address the goal of ensuring that services based on leased line components are provided throughout the UK by enabling communications providers to compete on comparable terms with BT at the retail level.

Wholesale trunk regulation 8:
Requirement to publish technical information

8.119 Section 87(6)(c) of the Act authorises the setting of SMP services conditions requiring the dominant provider to publish, in such manner as Ofcom may direct, the terms and conditions on which it is willing to enter into an access contract. Section 87(6)(b) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information for the purpose of securing transparency.

8.120 Under the Condition 'Requirement to publish a reference offer', BT will be obliged to publish a Reference Offer for Network Access, which amongst other things, contains a description of the Network Access to be provided, including technical characteristics; the location of the points of Network Access; and technical standards for Network Access. That Condition sets out that a reference offer, or amendments to that reference offer, must be published on the day of commencement or amendment. However, the Condition 'Requirement to publish technical information' sets out additional obligations to publish new technical information 90 days *in advance* of entering into a contract to provide the new Network Access, or amendments to existing technical terms and conditions 90 days before those amended terms and conditions come into effect.

8.121 As set out above, the information to be published under this Condition comprises new or amended technical characteristics (including information on network configuration where to necessary to make effective use of the Network Access), locations of the points of Network Access and technical standards (including any usage restrictions and other security issues). Relevant information about network configuration is likely to include information about the function and connectivity of points of access, for example the connectivity of exchanges to end users and other exchanges.

8.122 This Condition is important to ensure that communications providers to whom Network Access is being provided by BT are able to make effective use of that Network Access. Changes to technical information must be published in advance so that communications providers have sufficient time to prepare. For example, a competing provider may have to introduce new equipment or modify existing equipment to support a new or changed technical interface. Similarly, a competing provider may need to make changes to their network in order to support changes in the points of network access or configuration.

8.123 Ofcom's view is that 90 days is the minimum time that competing providers will need to modify their network to support a new or changed technical interfaces or support a new point of access or network configuration. Therefore, Ofcom concludes that in the market for wholesale trunk segments, BT must publish any new or modified technical characteristics, points of network access and technical standards not less than 90 days in advance of either BT entering into a contract to provide new Network Access or making technical changes to existing Network Access, unless Ofcom consents otherwise.

8.124 As explained in Chapter 6, Ofcom has concluded that CSH and ISH interconnection services (including the ISH extension and STM-1 point of handover ISH and CSH products discussed below) can be considered as a technical area related to the markets where Ofcom has found SMP. Ofcom has therefore also applied this condition to the technical areas outlined in Chapter 6.

Responses to the draft notification – requirement to provide technical information

8.125 No comments were made on this issue.

Conclusions – requirement to provide technical information

8.126 Having considered responses received in other market review consultations, in particular those received in response to the *Review of the Wholesale Broadband Access Markets*, Ofcom considers that there may be instances where BT, to meet its obligations under the condition to provide Network Access on reasonable request, should provide a notification period of longer than 90 days. For example, if BT were to make a major change to its technical terms and conditions, a notification period of more than the 90 day minimum notification period may be necessary.

8.127 Ofcom has, therefore, amended Condition H7 in Annex D to include a reference to publishing a notice “within a reasonable time period but not less than 90 days” before providing the new wholesale services or amending existing technical terms and conditions. Ofcom believes that 90 days is a practical standard period and notes that it is able and willing to consent to a shorter period in justified circumstances. Equally, where longer notice is reasonably required, it must be given.

Communications Act tests

8.128 Ofcom considers that the Condition meets the tests set out in the Act. Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom’s principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements in section 3 and in particular the requirement in sections 4(7) and 4(8) to promote competition and to encourage service interoperability for the purpose of securing efficient and sustainable competition and the maximum benefits for consumers by ensuring that providers have sufficient notification of technical changes to BT’s network to enable them compete.

8.129 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The condition is objectively justifiable in that it enables competing communications providers to make full and effective use of Network Access. It does not unduly discriminate in that it is imposed on BT and no other communications provider has SMP in this market. It is proportionate in that 90 days is the minimum necessary to allow competing providers to modify their networks. It is transparent in that it is clear in its intention that BT should notify technical information as set out above.

8.130 Ofcom considers that imposing this obligation satisfies the conditions set out in section 87(4) of the Communications Act. Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition in the long term, by ensuring communications providers can make effective use of wholesale inputs and offer products based on these wholesale inputs in competition with BT. In addition it will address the goal of ensuring that services based on leased line components are provided throughout the UK. By requiring BT to provide advance notification of technical changes, communications providers will be able to better plan their businesses and relationships with their customers.

Consultation on interfaces

8.131 Current regulation on BT (licence condition 15) includes a requirement to consult on interfaces where so directed by Oftel. This was to ensure that BT could not impose unnecessary costs on competing communications providers by specifying a proprietary interface.

8.132 However, Ofcom recognises that communications providers are constrained in their choice of interface by the standardised nature of most communications equipment. In addition, Ofcom believes that the scope for further modifications to traditional PSTN equipment, where BT was most likely to be able exert control over interface specifications, is likely to be limited in the future, as communications providers and equipment manufacturers increasingly look to other technologies.

8.133 Therefore, Ofcom now considers it unlikely that BT would be able to exert control over interfaces in a way that could have an adverse effect on competition. Consequently, Ofcom does not believe that imposing a condition requiring consultation on interfaces would be proportionate.

Wholesale trunk regulation 9: Obligations relating to requests for new network access

8.134 This condition is set in accordance with sections 87(3) and 87(5) as detailed above in relation to the condition relating to the provision of network access.

8.135 The SOR process forms part of BT's obligation to provide Network Access where it has SMP. The SOR process and associated timescales are the same in all of these markets. Ofcom has therefore taken account of comments provided in response to consultations on other markets, notably the Fixed narrowband wholesale exchange line, call origination, conveyance and transit markets review: explanatory statement and notification, published 26 August 2003 ('the narrowband statement').

Responses to the draft notification – new network access

8.136 Responses to the proposals in the draft notification (and Ofcom's comments on those responses) and those received in connection with the narrowband statement are set out in Chapter 6.

Conclusions – new network access obligations

8.137 Ofcom considers it appropriate to impose condition H8 in Annex D. This condition remains in the same terms as the condition previously consulted on.

Communications Act tests

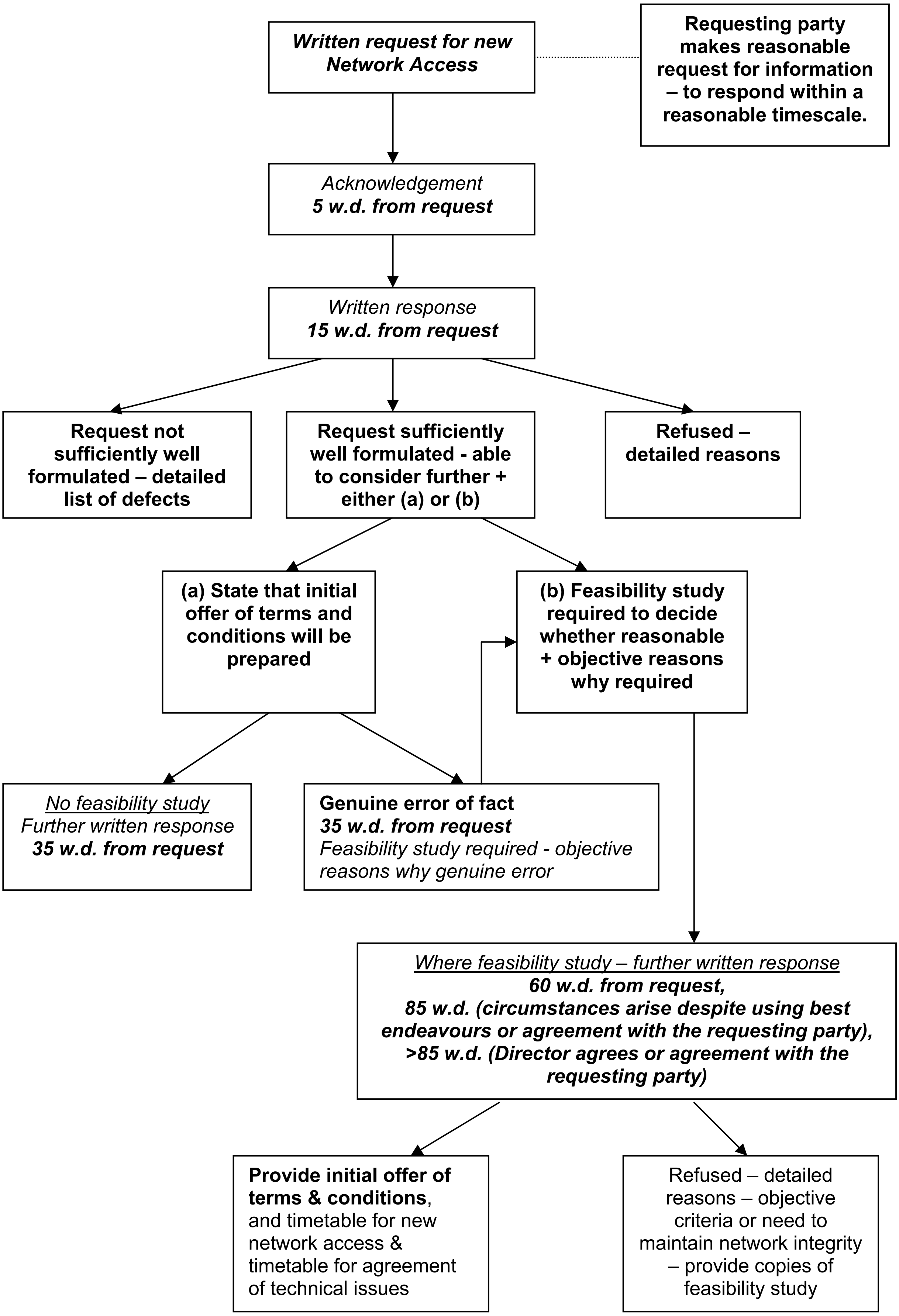
8.138 Ofcom has imposed this condition pursuant to section 87(3) and 87(5) of the Act. Specifically, under section 87(5)(a) Ofcom considers that the provisions of this condition will help to secure fairness and reasonableness in the way in which requests for Network Access are made and responded to, by adding clarity and robustness to the process. In addition, under section 87(5)(b) it considers that the provisions will help to secure that the obligations contained within the condition are complied with, within the reasonable periods and at the times set out in the condition.

8.139 Ofcom has considered the matters set out in section 87(4). In particular, under section 87(4)(d) it considers that it is fair and reasonable to impose this condition in the interests of effective competition in the long term, as reductions in delays in provision of new products will ensure that communications providers are able to make effective use of BT's network in competition with BT.

8.140 Ofcom has also considered the test for setting conditions set out in section 47 of the Act, namely that the condition is objectively justifiable, does not unduly discriminate, is proportionate and transparent. Ofcom considers that this condition meets these tests. In particular, it is objectively justifiable in the light of the deficiencies in the current process which lead to the delays and lack of clarity discussed above. It would not discriminate unduly against BT because BT has been found to have a position of SMP in this market and is therefore able to exploit this position to the potential detriment of its competitors both in this market and in downstream markets. The condition is proportionate since without it being put in place, BT's competitors would continue to experience problems of the nature already described. Furthermore, it is transparent in its intention to ensure that BT has a reasonable process for dealing with requests for new Network Access.

8.141 Finally, under Section 3 of the Communications Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom, in imposing this condition, has considered all the Community requirements set out in sections 3 and 4 of the Act. In particular, under section 4(8) Ofcom considers that the provisions help secure efficiency and sustainable competition in the markets in this review. They help to ensure efficiency and sustainable competition by enabling other communications providers to make effective use of BT's network in order to offer their own products, in accordance with sections 3(4)(b) and 4(3) of the Act.

8.142 A summary of Ofcom's conditions is as follows:



Wholesale trunk regulation 10:
Direction under general access obligation to supply PPCs subject to specific terms and conditions

8.143 The Phase I PPC Direction implemented specific obligations which have led to changes in BT's contract for PPCs. BT is now providing PPCs at various bandwidths on specified terms and conditions in accordance with the PPC Directions. The conditions set out by Oftel in those two Directions have been transposed into the contract between BT and other communications providers.

8.144 These Directions will only apply to the extent that BT provides a PPC which contains an element of a product or services which falls within the wholesale trunk segment market.

8.145 This Direction is made under the general access obligation in the wholesale trunk market. The Direction requires BT to provide PPC type products, upon reasonable request. It specifies regulations for PPCs, which carry forward the existing PPC requirements brought into force by the PPC Directions, as set out within sub-sections below. Ofcom considers that it is necessary to carry forward the appropriate existing PPC-specific regulation. The arguments in favour of such regulation are set out in the section imposing this regulation for the wholesale symmetric broadband origination market, in Chapter 6.

8.146 As explained in Chapter 6, Ofcom has concluded that CSH and ISH interconnection services (including the ISH extension and STM-1 point of handover ISH and CSH products discussed below) can be considered as a technical area related to the markets where Ofcom has found SMP. Ofcom has therefore also applied this condition to the technical areas outlined in Chapter 6.

10A: Technical and paper migrations and migration issues

8.147 Ofcom has required BT to migrate any retail circuits to PPCs providing the retail circuits were installed before 23 December 2002. This includes retail circuits requiring technical modifications that may have been carried out after 1 August 2001. Ofcom is also imposing charges for migration.

10B: ISH extension

8.148 Ofcom is requiring BT to provide an ISH extension product as specified in the Direction set out in Annex E, on a non discriminatory and cost oriented basis.

10C: PPC variant of Genus circuits

8.149 Ofcom is requiring BT to provide a Genus variant 1 PPC.

10D: Forecasting requirements and revisions and forecasting penalties

8.150 Ofcom is requiring BT to set out its forecasting requirements and penalties as specified in the Direction set out in Annex E. This will ensure that appropriate penalties are imposed by BT and will maximise the flexibility for adjustment of forecasts from one period to the next.

10E: STM-1 ISH and CSH handover

8.151 Ofcom is requiring BT to provide STM-1 point of handover ISH and CSH products at non discriminatory and cost oriented prices.

10F: Service Level Agreement

8.152 Ofcom is requiring BT to offer a comprehensive service level agreement covering ordering, supply and repair of equipment and circuits, in order to ensure the following:

- lead times for delivery and repair which are in keeping with European best practice;
- adequate compensation payments which reflect potential losses and provide a proper incentive for BT to act efficiently;
- clarity in the processes for ordering and provisioning avoiding the scope for misunderstanding and inefficient behaviour;
- adequate measures for dealing with the disparities in market position between BT and other communications providers ; and
- clauses which reduce ambiguity and strengthen certainty for communications providers.

Responses to the draft notification – PPC Direction

8.153 No comments, other than those which have already been taken into account, were received on this issue.

Conclusions – PPC Direction

8.154 For the reasons set out above, Ofcom considers it appropriate to impose the Direction under condition H1 set out in Annex E.

Communications Act tests

8.155 Justification against the tests in the Act is set out in the section imposing this regulation for the wholesale symmetric broadband origination market, in Chapter 6.

Wholesale trunk regulation 11:
Direction under cost orientation condition covering certain pricing matters relating to PPCs and LLU backhaul

8.156 The Phase I PPC Direction implemented specific obligations which have led to changes in BT's contract for PPCs. BT is now providing PPCs at various bandwidths on specified terms and conditions in accordance with the PPC Directions. The conditions set out by Oftel in those two Directions have been transposed into the contract between BT and other communications providers.

8.157 This Direction is made under the cost orientation condition for the wholesale symmetric broadband origination market. The Direction requires BT to provide certain PPC and LLU backhaul products and services according to certain pricing conditions. It carries forward existing PPC requirements brought into force by the PPC Directions, as set out within sub-sections below. The imposition of price controls for PPCs is considered separately above. Ofcom considers that it is necessary to carry forward the appropriate existing PPC-specific regulation. The arguments in favour of such regulation are set out in the section imposing this regulation for the wholesale symmetric broadband origination market, in Chapter 6.

8.158 As explained in Chapter 6, Ofcom has concluded that CSH and ISH interconnection services (including the ISH extension and STM-1 point of handover ISH and CSH products discussed above) can be considered as a technical area related to the markets where Ofcom has found SMP. Ofcom has therefore also applied this condition to the technical areas outlined in Chapter 6.

11A: Charges for capacity on third party customer infrastructure

8.159 Ofcom is imposing maximum charges for connection of subsequent PPCs where a third party already has a PPC connected to third party customer infrastructure which was in situ before 1 August 2001.

11B: Charge for change of speed or interface

8.160 Ofcom is imposing a maximum charge for changes of speed or interface at a wholesale level.

11C: Charges for reclassification of BT Retail Private Circuits

8.161 Ofcom is imposing a maximum reclassification charge in connection with migrated circuits.

11D: Charges for failed migration orders

8.162 Ofcom is imposing a maximum charge for failed migration orders.

11E: Infrastructure tariff conversion charges

8.163 Ofcom is imposing conditions and maximum charges relating to infrastructure tariff conversion.

11F: Equipment re-use

8.164 Ofcom is requiring BT to make equipment re-use at the third party customer end available to communications providers at cost oriented prices, so that they can re-use either their own or other communications providers' equipment, at the same or a different site, either immediately or after a reasonable period. This will avoid unnecessary duplication of resources and reduce potential barriers to entry.

11G: Cost orientation of LLU backhaul prices

8.165 Ofcom is requiring that charges for LLU backhaul services should be consistent with the charges applicable to those elements which are common to LLU backhaul and PPCs.

Responses to the draft notification – Direction under cost orientation condition

8.166 No comments, other than those which have already been taken into account, were received on this issue.

Conclusions – Direction under cost orientation condition

8.167 For the reasons set out above, Ofcom considers it appropriate to impose the Direction under condition H3 set out in Annex E. This Direction remains in broadly the same terms as the Direction previously consulted on.

Communications Act tests

8.168 Justification against the tests in the Act is set out in the section imposing this regulation for the wholesale symmetric broadband origination market, in Chapter 6.

Wholesale trunk regulation 12: Direction under quality of service condition requiring BT to provide specific information in respect of PPCs

8.169 BT is obliged by the PPC Phase II Direction to provide various information in respect of PPC quality of service. This Direction is made under the Quality of Service condition discussed above, and carries forward the bulk of this regulation.

8.170 Ofcom considers that it is necessary to carry forward this regulation. The arguments in favour of such regulation are set out in the section imposing this regulation for the wholesale symmetric broadband origination market, in Chapter 6.

8.171 As explained in Chapter 6, Ofcom has concluded that CSH and ISH interconnection services (including the ISH extension and STM-1 point of handover ISH and CSH products discussed above) can be considered as a technical area related to the markets where Ofcom has found SMP. Ofcom has therefore also applied this condition to the technical areas outlined in Chapter 6.

8.172 It was proposed in the draft notification that BT be obliged to publish on its website in an easily accessible form quarterly statistics on its performance with respect to Committed Delivery Dates, Requisite Periods, Reduced Requisite Periods, FOC Receipt Intervals, repair, availability of service and reasons for "stopping the clock". These statistics shall include BT's performance with respect to its retail arm, and with respect to each communications provider. The information with respect to communications providers shall be presented in such a way that the identity of a communications provider cannot easily be worked out from that information.

8.173 BT would also be obliged to publish quarterly statistics on its performance with respect to the list of information below, by reference to:

- all communications providers (aggregated); and
- each communications provider (separately). The information with respect to communications providers shall be presented in such a way that the identity of a communications provider cannot easily be worked out from that information.

8.174 *Order expedite related*

- Percentage of a communications provider's previous month's orders having Committed Delivery Dates quoted within 50% of Requisite Periods, for applicable circuits only

8.175 *Ordering and Provisioning times*

- number and percentage of instances where communications provider exceeds FOC Acceptance Interval for circuits, split by bandwidth;

- number and percentage of instances where communications provider exceeds FOC Acceptance Interval for network infrastructure;
- average amount by which communications provider exceeds FOC Acceptance Interval for circuits, split by bandwidth;
- average amount by which communications provider exceeds FOC Acceptance Interval for network infrastructure;
- number and percentage of order rejections for circuits;
- number and percentage of order rejections for network infrastructure;
- list of reasons for order rejection; and
- list of reasons for any Committed Delivery Dates being over 10 working days later than the relevant requisite periods.

8.176 *Fault management*

- mean response time for circuits and network infrastructure;
- new installation fault report rate for circuits; and
- list of reasons for faults.

Responses to the draft notification – Direction under quality of service condition

8.177 No comments, other than those which have already been taken into account, were received on this issue.

Conclusions – Direction under quality of service condition

8.178 For the reasons set out above, Ofcom considers it appropriate to impose the Direction under condition H6 set out in Annex E. This Direction remains in broadly the same terms as the Direction previously consulted on.

Communications Act tests

8.179 Justification against the tests in the Act is set out in the section imposing this regulation for the wholesale symmetric broadband origination market, in Chapter 6.

Wholesale trunk regulation 13:
Direction under general access condition requiring BT to provide RBS backhaul links

8.180 This requires BT to provide particular types of trunk segments, known as RBS backhaul circuits, upon request. Such links are used by mobile phone companies to connect their radio base stations to their networks. A RBS backhaul circuit provides transparent transmission capacity at a range of bandwidths, typically N*64kbit/s and 2Mbit/s between a mobile communications provider's premises and its mobile switching centre. The Direction is made under the general access obligation imposed for the wholesale trunk market.

8.181 Ofcom considers that it is necessary to impose this regulation. It should be noted that the requirements have been merged into a single Direction under the access obligation, along with requirements for BT to provide PPCs and LLU backhaul. The arguments in favour of such regulation are set out in the section imposing this regulation for the wholesale symmetric broadband origination market, in Chapter 6.

Responses to the draft notification – Direction requiring provision of RBS backhaul

8.182 No comments, other than those which have already been taken into account, were received on this issue.

Conclusions – Direction requiring provision of RBS backhaul circuits

8.183 For the reasons set out above, Ofcom considers it appropriate to impose the Direction under condition H1 set out in Annex E. This Direction remains in broadly the same terms as the Direction previously consulted on.

Communications Act tests

8.184 Justification against the tests in the Act is set out in the section imposing this regulation for the wholesale symmetric broadband origination market, in Chapter 6.

Wholesale trunk regulation 14:
Direction under general access condition requiring BT to supply LLU backhaul

8.185 Under the LLU backhaul Direction (*Final direction on LLU backhaul services*, 8 August 2002), BT is currently obliged to provide backhaul on reasonable terms (including service level agreements and compensation), at cost oriented prices and at prices consistent with PPCs.

8.186 As discussed in the backhaul Direction, backhaul is a similar product to PPCs and therefore consistency of approach is needed. Ofcom's market definitions have reflected the close links between backhaul and PPC products. Leased line backhaul links and PPC symmetric broadband origination are also defined as being in the same market.

8.187 This Direction is made under the general access obligation imposed for the wholesale trunk market. Ofcom considers that it is necessary to carry forward this regulation. It should be noted that these requirements have been merged into a single Direction under the access obligation, along with requirements for BT to provide PPCs and RBS backhaul.

8.188 The arguments in favour of such regulation are set out in the section imposing this regulation for the wholesale symmetric broadband origination market, in Chapter 6.

Responses to the draft notification – Direction requiring supply of LLU backhaul

8.189 No comments, other than those which have already been taken into account, were received on this issue.

Conclusions – Direction requiring supply of LLU backhaul

8.190 For the reasons set out above, Ofcom considers it appropriate to impose the Direction under condition G1 set out in Annex E. This Direction remains in broadly the same terms as the Direction previously consulted on.

Communications Act tests

8.191 Justification against the tests in the Act is set out in the section imposing this regulation for the wholesale symmetric broadband origination market, in Chapter 6.

Wholesale trunk market: Conclusion on regulation

8.192 Ofcom has concluded that as BT has SMP in this market, the following regulatory measures should be imposed:

8.193 **Conditions**

1. a general obligation to provide access on reasonable request;
2. requirement not to unduly discriminate;
3. basis of charges obligations (cost orientation and a cost accounting system);
4. accounting separation obligations;
5. requirement to publish a reference offer;
6. same day notification of changes to prices, terms and conditions;
7. requirement to provide quality of service information;
8. requirement to publish technical information with 90 days' notice; and
9. obligations relating to requests for new network access.

Conditions of entitlement reflecting these measures are primarily set out in Annex D. Cost accounting and accounting separation conditions are set out in a separate document on accounting issues.

8.194 **Directions**

- a Direction under the general access condition to provide PPCs at a range of bandwidths, RBS backhaul link products, and LLU backhaul products, subject to specific terms and conditions;
- a Direction under the cost orientation condition covering pricing matters relating to PPCs and LLU backhaul; and
- a Direction under the quality of service condition to require specific information in respect of PPCs.

Directions reflecting these measures are set out in Annex E.

8.195 The obligations for these markets are broadly similar to those currently applying, other than additional obligations relating to requests for new network access. Ofcom considers that the measures are sufficient and proportionate given that, although BT has SMP in the market for wholesale trunk segments, it is in a context of a degree of competition rather than complete market power. Ofcom must ensure that regulation in this market promotes competition, rather than acting as a substitute for competition, and that remedies imposed do not act as a disincentive to other communications providers in the market to proactively compete with BT.

Chapter 9

Regulatory remedies – SMP services conditions and Directions for Kingston

Introduction

9.1 This chapter sets out the remedies for the wholesale and retail leased lines markets in Kingston upon Hull, which Ofcom considers generally to be a distinct geographical area (see Chapter 2 and Annex A). This chapter sets out the effect of, and Ofcom's reasons for, setting SMP services conditions in these markets, and explains how certain tests in the Act are satisfied.

9.2 The conditions imposed in respect of Kingston are attached to the Notification in Annex D of this document.

9.3 Ofcom has identified the following leased lines markets in Kingston upon Hull. The explanations for these market definitions are set out in Chapter 2 and Annex A.
- retail low bandwidth traditional interface leased lines (up to and including 8Mbit/s) – this incorporates the minimum set of retail leased lines identified by the Commission;
- wholesale low bandwidth traditional interface symmetric broadband origination ("TISBO") (up to and including 8Mbit/s);
- wholesale high bandwidth traditional interface symmetric broadband origination ("TISBO") (above 8Mbit/s up to and including 155Mbit/s); and
- wholesale alternative interface symmetric broadband origination ("AISBO").

9.4 Although Ofcom has considered traditional interface retail leased lines at bandwidths above 8Mbit/s and alternative interface retail leased lines during its analysis, Ofcom does not consider it necessary to formally identify (for the purposes of section 79 of the Act) retail markets covering such products, as it considers that regulation at the wholesale level is sufficient to meet regulatory requirements.

9.5 Ofcom explains in Annex A that in Kingston upon Hull, it does not consider there to be either a separate wholesale trunk segments market or (currently) any markets for very high bandwidth traditional interface leased lines. In Annex B, Ofcom sets out its reasons for concluding that Kingston Communications should be designated as having SMP in all of the above markets other than retail high bandwidth traditional interface leased lines (Ofcom agrees with the Commission that any problems in the high bandwidth retail leased lines market should be dealt with by means of regulation at the wholesale level, rather than at the retail level).

9.6 The existing obligations applicable to the retail traditional interface leased lines markets in Hull are as follows:
- obligation to supply;
- price publication;
- price notification;
- non discrimination; and
- cost orientation, including a cost accounting system.

9.7 The existing obligations applying in the wholesale traditional interface symmetric broadband origination markets in Hull are as follows:

- obligation to offer wholesale leased line interconnection;
- non discrimination;
- cost orientation;
- accounting separation;
- publication of prices, terms and conditions;
- advance notification of prices, terms and conditions for new products;
- advance notification of changes to prices of existing products; and
- requirement to publish technical information.

9.8 Section 87(1) of the Act provides that where Ofcom has made a determination that a person is dominant in the market reviewed, it shall set such SMP conditions as it considers are appropriate and as are authorised in the Act. This implements Article 8 of the Access Directive. Paragraphs 21 and 114 of the European Commission's Guidelines on market analysis and SMP state that this means that Ofcom must impose one or more SMP conditions on a dominant provider. Furthermore, the European Commission states that the imposition of no SMP conditions on a dominant provider would be inconsistent with the new regime. Thus, Ofcom is under a mandatory obligation to impose at least one appropriate SMP condition on a dominant provider.

9.9 The SMP conditions which may be set can be summarised as follows:

(a) the provision of network access (Article 12 of the Access Directive, sections 87(3) and 87(5) of the Act);

(b) no undue discrimination (Article 10 of the Access Directive, section 87(6)(a) of the Act);

(c) transparency (Article 9 of the Access Directive sections 87(6)(b) and (c) of the Act);

(d) accounting separation (Article 11 of the Access Directive, section 87(7) of the Act);

(e) pricing, including, in particular, price controls (Article 13 of the Access Directive, section 87(9) of the Act);

(f) regulatory controls on retail markets (Article 17 of the Universal Service Directive, section 91 of the Act);

(g) regulatory controls with respect to leased lines (Article 18 of the Universal Service Directive, section 92 of the Act); and

(h) conditions with respect to carrier selection and pre-selection (Article 19 of the Universal Service Directive, section 90 of the Act).

These conditions are relevant to this review and Ofcom is required to assess which of these obligations are appropriate.

9.10 Ofcom has also acted in accordance with the duties set out in section 4 of the Act. All of the conditions imposed by Ofcom will promote competition by helping to implement the EC Directives referred to above and by assisting with the development of the European internal market. In addition, each individual condition fulfils one or more of the other duties set out in section 4, as set out in the discussion of the conditions below.

9.11 Ofcom considers that the conditions satisfy the tests set out in section 47 of the Act. They are objectively justifiable, in that they relate to the need to ensure that competition develops to the benefit of consumers. They do not discriminate, in that any provider of electronic communications networks, services or associated facilities can request access from the dominant provider. They do not discriminate against

Kingston because Kingston has been found to hold a position of SMP in these markets, and as such is in a particular position to exploit its advantages were this regulation not to be implemented. They are proportionate, since Kingston has SMP in these markets and these products might not be made available on fair and reasonable terms in the absence of the conditions. The conditions are set out in a transparent form in Annex D, so that Ofcom considers that they meet the requirement of transparency set out in the Act.

Minimum set of retail leased lines in Kingston upon Hull

9.12 In the light of the above considerations, Oftel proposed in the draft notification the following options for future regulation in the market for retail low bandwidth traditional interface leased lines:

1. obligation to supply the minimum set of retail leased lines;
2. requirement not to unduly discriminate;
3. basis of charges obligations (cost orientation and cost accounting); and
4. requirement to publish a reference offer (obligation to publish current prices, terms and conditions).

9.13 These options were proposed for the minimum set of retail leased lines identified by the Commission, i.e. 64kbit/s and 2Mbit/s leased lines, and also for leased lines between these bandwidths as they are mainly based on multiples of the 64kbit/s circuits. Ofcom agrees with the Commission that any problems in the high bandwidth retail leased lines market should be dealt with by means of regulation at the wholesale level, rather than at the retail level. With regard to 8Mbit/s traditional interface leased lines, which (together with leased lines of bandwidths from 64kbits to 2Mbit/s) form part of the low bandwidth market, no leased lines of this bandwidth have been sold in the Kingston upon Hull area and therefore Ofcom does not need to consider any regulatory options.

9.14 A regulatory option appraisal of these options was undertaken, concluding that taken together they formed an appropriate response to the degree of SMP existing in this market.

Kingston minimum set of retail leased lines regulation 1: Requirement to provide the minimum set of retail leased lines

9.15 The Universal Service Directive states that NRAs must ensure that organisations with SMP provide the minimum set of retail leased lines. The minimum set has been defined in the Commission Decision 2003/548/EC of 24 July 2003, as meaning leased lines of bandwidths 64kbit/s and 2Mbit/s.

9.16 As Kingston has been found to have SMP, Ofcom must impose a general obligation to supply.

9.17 Implementation of this obligation fits with Recital 18 of the Framework Directive which requires NRAs where possible to take the utmost account of the desirability of making regulation technologically neutral. Kingston will be required to provide these products irrespective of the purpose for which they are to be used.

Responses to the draft notification – requirement to provide minimum set of retail leased lines

9.18 No comments were received on this issue.

Conclusions – requirement to provide

9.19 For the reasons set out above, Ofcom has concluded that it is appropriate to impose condition IA1 in Annex D, which requires Kingston to provide the minimum set of retail leased lines. This condition remains in the same terms as the condition previously consulted on.

Communications Act tests

9.20 Ofcom considers that the condition meets the tests set out in the Act. Under Section 3 of the Act, and as set out in Section 4 of the Communications Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, the condition promotes the interests of consumers, particularly businesses, since Kingston is dominant in this market, and in the absence of supply by Kingston business consumers may find themselves unable to obtain retail leased lines, in accordance with sections 3(4)(b) and 4(3) of the Act.

Kingston minimum set of retail leased lines regulation 2: Requirement not to unduly discriminate

9.21 Annex VII of the Universal Service Directive states that NRAs must ensure that organisations with SMP "apply similar conditions in similar circumstances to organisations providing similar services, and are to provide leased lines to others under the same conditions and of the same quality as they provide for their own services, or those of their subsidiaries or partners, where applicable."

9.22 As Kingston has been found to have SMP, Ofcom must impose a non discrimination obligation.

Responses to the draft notification – requirement not to unduly discriminate.

9.23 No comments were received on this issue.

Conclusions – no undue discrimination

9.24 Having considered the consultation responses Ofcom considers that it is appropriate to impose condition IA2 in Annex D, which prohibits *undue* discrimination. This condition remains in the same terms as the condition previously consulted on.

Communications Act tests

9.25 Ofcom considers that the condition meets the tests set out in the Act. Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, the condition protects business consumers by ensuring supply on equal terms to all parties. As Kingston is dominant in this market, it is in a position where in the absence of this condition it would be able to discriminate on the terms of retail leased lines between different parties, in accordance with sections 3(4(b) and 4(3) of the Act.

9.26 This regulation will also promote competition in retail leased lines by preventing Kingston from discriminating in ways which are anti-competitive, e.g. by de-averaging its prices in such a way that barriers to entry for competitors are created.

Kingston minimum set of retail leased lines regulation 3: Basis of charges obligations (cost orientation and cost accounting)

9.27 Annex VII states that *"National regulatory authorities are, where appropriate, to ensure that tariffs for leased lines referred to in Article 18 follow the basic principles of cost orientation. To this end, national regulatory authorities are to ensure that undertakings identified as having significant market power pursuant to Article 18(1) formulate and put in practice a suitable cost accounting system."* (emphasis added)

9.28 Ofcom has therefore considered whether it is appropriate to impose a cost orientation and associated cost accounting obligation for Kingston's low bandwidth traditional interface retail leased line products. It might be argued that such an obligation is unnecessary, since other communications providers have shown little or no interest in competing in this market.

9.29 However, Ofcom is not proposing to apply the same level of regulation in the markets for symmetric broadband origination in Kingston upon Hull as it is imposing in the remainder of the UK where PPCs have been made available, for the reasons outlined below. Ofcom therefore considers that it is important to impose some form of cost orientation obligation at the retail level.

9.30 Ofcom considers that imposition of a cost orientation condition will minimise the risk of adverse effects arising from price distortion that would occur if Kingston were to fix and maintain some or all of its prices at an excessively high level. Thus the condition will help to promote efficiency and sustainable competition.

Responses to the draft notification – cost orientation

9.31 In its response to the draft notification, Kingston argued that the imposition of an obligation to maintain appropriate cost accounting systems would be overly onerous, particularly as regards having the associated reports audited, and was not a proportionate remedy. Kingston pointed out that none of its wholesale leased lines products have any customers and that, as such, there is no need for a cost accounting system.

9.32 Ofcom has some sympathy for Kingston's position and considers that the cost to Kingston of providing retail leased lines is likely to be broadly similar to the cost to BT of providing retail leased lines. Ofcom, however, remains of the view that a cost orientation obligation is necessary to ensure that Kingston does not exploit its dominant position to the detriment of consumers. Cost accounting requirements will be necessary in the advent of Kingston acquiring wholesale customers. Ofcom notes that Kingston's prices for retail leased lines also appear to be broadly in line with BT's, even allowing for the differences in the pricing structures adopted by the two communications providers. Ofcom considers in the absence of evidence to the contrary that Kingston is likely to be fulfilling its cost orientation obligation while this remains the case.

9.33 Ofcom considered that the imposition of this solution minimises the risk of adverse effects arising from price distortion that would occur if Kingston, which has SMP in this market, were to fix and maintain some or all of its prices at an excessively high level.

Conclusions – cost orientation

9.34 Ofcom considers that it is necessary to impose a cost orientation (and associated cost accounting) obligation on Kingston. Given the apparent similarities between the costs to BT and Kingston of providing leased lines, Ofcom considers that Kingston's decision to price its retail leased lines at a similar level to those of BT suggests that, in the absence of evidence to the contrary, Kingston is fulfilling is cost orientation obligation. In the absence of complaints, Ofcom would not therefore be minded to require Kingston to produce audited reports to show that its retail leased lines prices were cost oriented. Ofcom considers that this represents a proportionate and balanced solution to the potential pricing concerns for retail leased lines in Kingston upon Hull.

9.35 The condition remains in the same terms as that consulted on in the December 2003 notification document and is set out in Annex D.

Communications Act tests

9.36 Ofcom considers that the condition (Condition IA3 in Annex D) meets the tests set out in the Act.

9.37 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, the condition protects business consumers by ensuring that the product they are purchasing is cost oriented, in accordance with section 3(1) of the Act.

Kingston minimum set of retail leased lines regulation 4: Requirement to publish a reference offer

9.38 Annex VII of the Universal Service Directive states that NRAs must ensure that information on "technical characteristics", "tariffs" and "supply conditions" is easily accessible for the set of leased lines defined in the Universal Service Directive. As Kingston has been found to have SMP, Ofcom must impose a transparency obligation. Kingston will be obliged to publish its prices, terms and conditions for low bandwidth products.

9.39 Kingston will be obliged to publish information on technical characteristics which includes physical and electrical characteristics as well as the detailed technical and performance specifications which apply at the network termination point.

9.40 Kingston will be obliged to publish tariffs which include initial connection charges, periodic rental charges and other charges. Thus, for example, the individual connection and rental charges for a circuit must be unbundled. Where tariffs are differentiated, this must be indicated. Where Kingston considers it unreasonable to provide a leased line under its published tariff and supply conditions, it must seek the agreement of Ofcom to vary those conditions in that case.

Responses to the draft notification – publication of a reference offer

9.41 No comments, other than those which have already been taken into account, were received on this issue.

Conclusions – requirement to publish a reference offer

9.42 For the reasons set out above, Ofcom has concluded that it is appropriate to impose condition IA4 in Annex D, which requires Kingston to publish a reference offer. This condition remains in the same terms as the condition previously consulted on.

Communications Act tests

9.43 Ofcom considers that the condition meets the tests set out in the Act. Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, the condition further the interests of business consumers by providing them with information so that they can establish that the terms and conditions on which they are purchasing the services do not discriminate against them, in accordance with section 3(1) of the Act. This in turn assists the policing of compliance with the non discrimination obligation, allowing Ofcom to tell more easily if discrimination is taking place.

9.44 The condition also promotes competition in retail leased lines, in accordance with sections 3(4)(b) and 4(3) of the Act. Clarity of the product makes it easier for switching to take place. In addition, the condition ensures that competitors know the specifications of Kingston's products and the terms and conditions to which it must adhere, thereby making it easier for them to offer competing services.

9.45 It is possible that transparency requirements can lead to price following, thereby discouraging vigorous price competition. However, Ofcom believes that Kingston's market power in this market is so extensive that the benefits of imposing this obligation are likely to outweigh any possible costs of this nature.

Kingston minimum set of retail leased lines regulation 5: Requirement to publish information concerning delivery and repair times

9.46 As discussed in the previous section, Kingston will be obliged by this condition to publish supply conditions, including at least information concerning the ordering procedure, the contractual period, and any refund procedure. Justification against the Communications Act tests is set out in the previous section.

Kingston minimum set of retail leased lines: Conclusion on regulation

9.47 Ofcom has concluded that Kingston has SMP in the provision of the minimum set of retail leased lines, and that as a consequence the following regulatory measures should be imposed:

1. obligation to supply the minimum set of retail leased lines;
2. requirement not to unduly discriminate;

3. basis of charges obligations (cost orientation and cost accounting), to take effect should Kingston breach its voluntary pricing undertaking;
4. requirement to publish a reference offer (obligation to publish current prices, terms and conditions); and
5. requirement to publish information concerning delivery and repair times.

Conditions of entitlement reflecting these options are set out in Annex D.

9.48 Ofcom is not applying any regulation to the retail high bandwidth or very high bandwidth markets. Thus there is a withdrawal of the regulation currently applying to leased lines in these markets. In addition, Ofcom is imposing less regulation for the retail low bandwidth market than currently exists. Ofcom's conclusions for the retail markets reflect its intention to deal with problems at the retail level by means of regulation at the wholesale level, where possible and appropriate.

Wholesale traditional interface symmetric broadband origination markets in Kingston upon Hull

9.49 In its assessment of the wholesale low and high bandwidth TISBO markets in the Kingston upon Hull area, set out in Chapter 3 and Annex B, Ofcom concluded that the markets are not effectively competitive and designated Kingston as having SMP.

9.50 In light of the above considerations, Ofcom proposed in the draft notification the following options for future regulation in the markets for TISBO:

1. a general access obligation to supply wholesale symmetric broadband origination products upon request;
2. requirement not to unduly discriminate;
3. basis of charges obligations (cost orientation);
4. requirement to publish a reference offer;
5. requirement to publish technical information; and

9.51 Any SMP conditions to be imposed must comply with the various tests set out in section 87(4) of the Communications Act as applicable. Ofcom must also bear in mind the duties set out in section 4 of the Act.

9.52 In particular, each SMP condition must pass the test set out in section 47 of the Act, namely that each condition must be:

(a) objectively justifiable in relation to the networks, services or facilities to which it relates;
(b) not such as to discriminate unduly against particular persons or a particular description of persons;
(c) proportionate to what the condition is intended to achieve; and
(d) in relation to what it is intended to achieve, transparent.

9.53 It is Ofcom's view that the conditions imposed in this document satisfy the relevant requirements specified in the Act, as discussed in detail in the following paragraphs.

Responses to the draft notification – need for wholesale regulation

9.54 Kingston disputed the need for *ex ante* regulation given that the Hull area is small and entry barriers are relatively low. Kingston argued that a lack of SMP regulation was less important to the development of competition due to the Hull area being relatively small. Kingston suggested that although it currently held some market power, this market power would not endure and so any regulation would be unduly interventionist and potentially overly burdensome.

9.55 Kingston argued that the emphasis of the new communications framework is on minimising *ex ante* regulation and using competition and that Ofcom has failed to identify any new or enhanced competition or consumer protection problem to justify *ex ante* regulation. Kingston suggested that it was necessary to show that there is no effective competition in the Hull area **and** that there were high barriers to entry in the Hull area **and** that competition law is insufficient before *ex ante* remedies were imposed.

9.56 Kingston argued that as it was a relatively small company compared to BT, it would be harmed more by regulatory intervention that BT would, impacting on its ability to invest in new services and fulfil its universal service obligations. Kingston suggested that any remedies imposed should be proportionate to its position in the Hull area in comparison to that of BT in the rest of the UK.

9.57 Ofcom disputes Kingston's assertion that *ex ante* regulation is unnecessary and that any SMP in unlikely to endure. Leased lines are a long established product and the lack of competition in the Hull area, as evidenced by Kingston's high market shares, is indicative of a lack of effective competition in the area and the fact that Kingston's SMP has endured.

9.58 Although the Hull area is relatively small meaning that the cost of other communications providers extending their networks into the area is also relatively low, it also means that the number of potential customers for leased lines is also relatively small. As explained in Chapters 2 and 3 above, Ofcom considers it unlikely that communications providers will be willing to extend their networks into the Hull area. As a result, Ofcom does not consider that competition law on its own will be sufficient to encourage competition in the Hull area.

9.59 Ofcom has fully justified below the need for each piece of regulation that it has imposed. Ofcom recognises that Kingston is not of the same size as BT and the regulation imposed is therefore less stringent.

Conclusion on the need for wholesale regulation

9.60 Ofcom considers that wholesale regulation in the Hull area is necessary and justified for the reasons set out above.

Kingston wholesale traditional interface symmetric broadband origination markets regulation 1: Requirement to provide network access on reasonable request

9.61 Section 87(3) of the Act authorises the setting of SMP services conditions requiring the dominant provider to provide network access as Ofcom may from time to time direct. These conditions may, pursuant to section 87(5) include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions. When considering the imposition of such conditions in a particular case, Ofcom must have regard to the 6 factors set out in section 87(4) of the Act, including, *inter alia*, the technical and economic viability of installing other competing facilities and the feasibility of the proposed network access.

9.62 Kingston would be required under this obligation to supply low and high bandwidth wholesale TISBO products on reasonable request.

9.63 Kingston has been found to have SMP in these markets. This regulation would allow communications providers to negotiate innovative wholesale products which will enable them to compete in the retail markets, encouraging competition at the retail level. If the obligation were not imposed, Kingston would be able to deny access or impose unreasonable terms having a similar effect, thereby hindering the emergence of competitive retail markets for leased lines and other services which may rely on these inputs.

9.64 While formulation of specific obligations may from time to time be appropriate, either for the avoidance of doubt or in resolving a dispute, Ofcom proposes to rely as far as possible on the general obligation. This removes the need for Ofcom to specify the details of products to be supplied (which it is often not best placed to do), and provides a regime which is responsive to future market and technical developments. While the scope is broad, it is appropriately limited by the ability of Kingston to refuse any request which is unreasonable. (Ofcom's views on reasonableness in this context are set out in Oftel's Access Guidelines.) The Access Directive states in Article 12 that an NRA may impose access obligations where the denial of access or unreasonable terms and conditions having a similar effect would hinder the emergence of a sustainable competitive market at the retail level, or would not be in the end users' interest. If wholesale leased line products are made available to communications providers upon reasonable request, this will enable them to construct their own retail equivalent products, thereby increasing the level of competition at the retail level with benefits that will feed through to consumers.

9.65 It might be argued that reliance on a general obligation to provide access may require Ofcom to resolve multiple disputes on the provision of wholesale products. However, this appears to be unlikely since communications providers have to date expressed relatively little interest in competing in these markets, and because of this at the current time Ofcom does not have the information necessary to specify particular forms of access.

9.66 Reliance on the Competition Act for communications providers' general access requirements will, in Ofcom's view, be insufficient because of the network-based nature of the industry, and would be inconsistent with Ofcom's objective of promoting competition.

9.67 Ofcom therefore considers that it is necessary to introduce a general access obligation for the Kingston upon Hull markets, to deal with new wholesale leased line products that may be required by communications providers in the future.

9.68 The words "fair and reasonable terms" would be interpreted by Ofcom as meaning, amongst other things, terms which did not lead to any sort of margin squeeze between wholesale and retail markets, since a margin squeeze is in effect a constructive refusal to supply, i.e. a refusal to supply on commercially viable terms. Thus there will be no need to introduce a specific condition to deal with such an eventuality. The provision of Network Access on fair and reasonable terms and conditions should, where appropriate, include reasonable service level agreement and compensation which ensures such SLAs would be effective.

9.69 Recital 6 of the Access Directive states that:

"in markets where there continue to be large differences in negotiating power between undertakings, and where some undertakings rely on infrastructure provided by others for delivery of their services, it is appropriate to secure…adequate access and interconnection and interoperability of services in the interests of end users."

9.70 Ofcom considers the wholesale symmetric broadband origination markets in Hull to be of this type because of Kingston's position of SMP, and in accordance with the Access Directive considers it necessary to ensure end-to-end connectivity by imposing proportionate obligations on undertakings that control access to end users.

9.71 Implementation of this obligation also fits with Recital 18 of the Framework Directive which requires NRAs where possible to take the utmost account of the desirability of making regulation technologically neutral. Communications providers will be able to use Kingston's wholesale TISBO products to provide services of their choice. Thus this measure is not linked to the activities of the party seeking interconnection of the degree of its investment in network infrastructure, and it consequently accords also with Recital 7 of the Access Directive. Ofcom does not consider that it is necessary to add this provision. The requirement to offer on fair and reasonable terms means that terms which would normally be offered in a competitive market should be offered. In Ofcom's view, this includes SLAs. Should Kingston bring forward an argument that a reasonable SLA is not required in the circumstances under consideration, Ofcom will consider the case on its merits.

Responses to the draft notification – network access

9.72 Kingston has suggested that there is no demand for wholesale leased lines products in the Kingston upon Hull area and that as such it is unnecessary and disproportionate to impose a network access obligation.

9.73 Ofcom is of the view that the network access obligation is necessary and proportionate. The obligation does not require Kingston to incur the cost of making available products for which there is no demand but rather requires that where there is a reasonable request for network access that it be provided.

9.74 Kingston suggested that LLU provides a cost-effective means of providing low bit rate leased lines (including AISBO via 'Ethernet over DSL' solutions) and that as such it was unnecessary to impose further network access obligations.

9.75 Leased lines offered using DSL solutions form one small and limited part of the leased lines market. Ofcom does not consider that the availability of LLU to offer such products is sufficient to enable other communications providers to properly compete with Kingston in the Hull area. Ofcom also notes that, to date, there has been no interest by communications providers in taking unbundled local loops in the Hull area.

Conclusions – obligation to provide network access

9.76 Having considered the responses to the draft notification, Ofcom has concluded that a network access condition should be imposed in these markets in the form set out at Annex D.

9.77 Ofcom does not propose to replicate the Annex II list to define entitlement to Network Access. This is because Annex II status flows from the Interconnection Directive 97/33/EC. The provisions of that Directive – including the concept of Annex II status – will fall. For the purposes of the Network Access condition, the definition of Third Party has been amended to the provider of a **public** electronic communications network or **public** electronic communications service (i.e. electronic communications networks which are provided wholly or mainly for the purpose of making electronic communications services available to members of the public; and electronic communications services that are provided so as to be available for use by members of the public). Accordingly, providers of non-public electronic communications networks or non-public electronic communications services will not be entitled to Network Access under the imposed condition. This maintains the status quo existing prior to these consultations.

9.78 Further guidance as to how Ofcom proposes to apply the Network Access obligation can be found in Oftel's guidelines on imposing access obligations under the new EU Directives, dated 13 September 2002 (the "Access Guidelines") and Oftel's guidelines for the interconnection of public electronic communications networks, dated 23 May 2003 (the "Interconnection Guidelines"). These guidelines can be found at www.ofcom.org.uk/static/archive/oftel/publications/ind_guidelines/acce0902.htm and www.ofcom.org.uk/static/archive/oftel/publications/eu_directives /2003/intercon0503.htm respectively.

Communications Act tests

9.79 Ofcom considers that the condition (Conditions GA1 and GGA1 in Annex D) meets the tests set out in the Act.

9.80 In Ofcom's view, this condition meets the tests set out in section 47 of the Act. The condition is objectively justifiable, in that it relates to the need to ensure that competition develops to the benefit of consumers. It does not unduly discriminate, as it is imposed on Kingston and no other communications provider has SMP in this market. It is proportionate, since it is targeted at addressing the market power that Kingston holds in this market and does not require it to provide access if it is not technically feasible or reasonable. Finally, it is transparent in that it is clear in its intention to ensure that Kingston provides access to its network in order to facilitate competition.

9.81 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4 of the Act. In particular, because it requires Kingston to provide the necessary access products, the condition encourages the provision of network access and service interoperability for the purpose of ensuring efficiency and promoting competition in the downstream markets, in accordance with sections 4(7) and 4(8). As Kingston has market power in the provision of wholesale TISBO, it controls a key input into a range of downstream services – principally leased lines but also virtual private networks, managed services etc. In requiring this condition, Ofcom is promoting competition and the interests of consumers and maximising choice in the markets for those downstream services, in accordance with sections 3(4)(b) and 4(3) of the Act.

9.82 In addition, Ofcom considers that imposition of this condition satisfies the conditions set out in section 87(4) of the Communications Act. In particular, it is fair and reasonable taking into account the investment made by Kingston in its network, which means that it is in a position to provide these products upon reasonable request. Further, Ofcom considers that by making wholesale products available to communications providers to enable them to compete at the retail level, the condition satisfies the need to secure effective competition in the long term and the desirability of securing that electronic communications services are provided that are available throughout the member States of the EC.

Kingston wholesale traditional interface symmetric broadband origination markets regulation 2: Requirement not to unduly discriminate

9.83 Section 87(6)(a) of the Act authorises the setting of an SMP services condition requiring the dominant provider not to unduly discriminate against particular persons, or against a particular description of persons, in relation to matters connected with the provision of network access.

9.84 The requirement not to unduly discriminate is intended, principally, to prevent dominant providers from discriminating in favour of their own retail activities and to ensure that competing providers purchasing wholesale products from the dominant provider are placed in an equivalent position to the dominant provider's retail arm.

9.85 Where dominant providers are vertically integrated, like Kingston, they may have an incentive to provide wholesale services on terms and conditions that favour their own retail activities, in a way that would have a material adverse effect on competition. In particular, they may charge competing providers more than the amount charged (through transfer charging) to their own retail activities for wholesale services, thereby increasing the costs of competing providers and giving themselves an unfair competitive advantage. They might also provide services on different terms and conditions, for example with different delivery timescales, which would disadvantage their retail competitors and in turn consumers.

9.86 In the absence of a non discrimination condition, Ofcom could be called upon to investigate alleged breaches of the Competition Act prohibition on anticompetitive agreements and abuse of a dominant position, and might be required to resolve successive complaints. Imposing an *ex ante* condition in this instance will reduce the potential regulatory costs emanating from multiple or successive complaints related to discrimination.

9.87 It could be argued that the Competition Act provides adequate provision to address allegations or gather evidence of discriminatory behaviour. However, Ofcom considers that at the wholesale level sectoral regulation provides a faster and more secure means of giving effect to decisions and determinations. In addition, it allows Ofcom to place a greater emphasis on promoting competition (for example by restricting the ability of an SMP communications provider to foreclose segments of the retail market).

9.88 It might also be argued that a requirement not to unduly discriminate prevents Kingston from fully exploiting its economies of scale. If Kingston were able to discriminate, it would be able, when needed, to quote a lower price in order to attract sufficient numbers of customers to ensure that its infrastructure is utilised at full capacity. Although this is a valid consideration, Ofcom considers that it is far outweighed by the fact that in view of Kingston's position of SMP, it would also be able to use discrimination for other purposes less constructive than maximisation of capacity utilisation, and that this would have a harmful effect on competition.

9.89 Ofcom therefore considers that it is necessary to impose a non discrimination obligation.

9.90 A prohibition of discrimination might have disadvantages if it prevented discrimination that was economically efficient or justified. However, the condition provides that there should be no *undue* discrimination. Oftel considered how it might treat undue discrimination in its Access Guidelines (it should be noted that Ofcom intends to consult on non-discrimination guidelines later on in 2004.). Oftel's Guidelines note that any obligation with respect to undue discrimination has the objective of preventing behaviour that has a material adverse effect on competition. This does not mean that there should not be any differences in treatment between undertakings, rather that any differences should be objectively justifiable, for example, by differences in underlying costs of supplying different undertakings. The Guidelines also note that in Oftel's view, there is a rebuttable presumption that a vertically integrated SMP communications provider discriminating in favour of its own retail activities or between others of its own activities would have a material adverse effect on competition (paragraph 3.9). This view would also apply to discrimination in relation to the underlying components of services.

Responses to the draft notification – no undue discrimination

9.91 No comments were received on this issue.

Conclusions – no undue discrimination

9.92 For the reasons set out above, Ofcom has concluded that it is appropriate to impose conditions GA2 and GGA2 in Annex D, which prohibits *undue* discrimination. This condition remains in the same terms as the condition previously consulted on.

Communications Act tests

9.93 Ofcom considers that the condition meets the tests set out in the Act.

9.94 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, because it requires Kingston to provide the necessary access products on a non discriminatory basis, the condition encourages the provision of network access and service interoperability for the purpose of efficiency and sustainable competition in the downstream markets, in accordance with sections 4(7) and 4(8). As Kingston has market power in the provision of wholesale TISBO, it controls a key input into a range of downstream services – principally retail traditional interface leased lines but also virtual private networks, managed services etc. In requiring this condition, Ofcom is promoting competition and the interests of consumers and maximising choice in the markets for those downstream services by enabling communications providers to compete with Kingston at the retail level, in accordance with sections 3(4)(b) and 4(3) of the Act.

9.95 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. Ofcom considers that this condition is objectively justifiable, in that it provides safeguards to ensure that competitors, and hence consumers, are not disadvantaged by Kingston discriminating in favour of its own retail activities or between its own different activities. It does not unduly discriminate, as it is imposed only on communications providers who have SMP. It is proportionate since it only prevents behaviour which is unduly discriminatory. Finally, it is transparent in that it is clear in its intention to ensure that Kingston does not unduly discriminate.

9.96 Ofcom considers that imposition of this condition satisfies the conditions set out in section 87(4) of the Communications Act. Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition in the long term, as it will ensure that communications providers are able to make effective use of wholesale inputs and offer products based on these wholesale inputs in competition with Kingston. In addition it will address the goal of ensuring that services based on leased line components are provided throughout the geographic market by enabling communications providers to compete with Kingston at the retail level.

Kingston wholesale traditional interface symmetric broadband origination markets regulation 3:
Basis of charges obligations (cost orientation)

9.97 Section 87(9) authorises the setting of SMP services conditions imposing on the dominant provider rules concerning the recovery of costs and cost orientation.

9.98 Under this obligation, Kingston would be required to provide wholesale services at cost oriented prices. As Kingston has been identified as having SMP in these markets, the availability of wholesale services at cost oriented prices would ensure that the competition in the retail leased lines and other downstream markets should lead to lower prices.

9.99 It might be argued that the Competition Act should be used to avoid excessive or predatory pricing. However, Ofcom considers that sectoral tests are likely to be more stringent and more effective than the Competition Act, giving the SMP communications provider less latitude and providing greater certainty for access customers.

9.100 Ofcom therefore considers that it is necessary to apply this obligation. The condition sets out that the charges for services should be reasonably derived from the costs of providing those services. It further states that the costs must be calculated on a forward looking long run incremental cost approach, and allowing an appropriate mark-up for the recovery of common costs including an appropriate return on capital employed.

9.101 The condition will apply across all services within these markets. This means that the price of all services provided by Kingston in the markets should be based on LRIC and allowing an appropriate mark-up.

9.102 Ofcom confirms that all new services that are introduced into this market will also be covered by the same pricing rule. This is because new services in the same market would be expected to be subject to the same competitive conditions as existing services. This does not however mean that Kingston cannot recover costs appropriate to new wholesale services. The recovery of efficiently incurred costs for new wholesale services was discussed in paragraphs 2.23 – 2.25 of Oftel’s access guidelines.

9.103 Although this condition will apply to all services in this market, and the expectation is that the treatment of new services under the condition will be the same as for existing services, there may be occasional exceptions to this rule. This may arise where the new service is innovative and thus warrants a different regulatory approach. There are three ways in which such services can be dealt with.

i) The service may be so innovative that it falls in a completely new and separate market. In this case the appropriate regulatory obligations will be determined by Ofcom following analysis of this new market.

ii) The new service falls within the market but Ofcom determines that an alternative charging basis is appropriate. For example, a different charging basis may be appropriate for services offered during a trial.

iii) The new service falls within the market and the cost orientation obligation is applied, but there might be a range of prices which would be consistent with cost orientation given the uncertainty about the take up and future profitability of the service. In determining whether a charge is not cost orientated, Ofcom would consider whether the expected or achieved return on capital was excessive. In making this assessment, Ofcom will need to take account of the risk of the new service failing and the lost investment that would result. This therefore maintains an appropriate incentive for the communications provider to invest in new services and technologies.

9.104 The condition contains a clause enabling Ofcom to determine that a price need not be set on a forward-looking LRIC basis. This is particularly relevant to scenario ii) above where Ofcom determines that an alternative charging basis is appropriate. If Kingston wishes to set a price for a service in any of the markets on any other basis than forward-looking LRIC, it must apply to Ofcom for permission to do this.

9.105 Ofcom considers that the cost orientation condition is justifiable and a proportionate response to the extent of competition in the markets analysed. It enables competitors to purchase services at a rate which will enable them to develop competitive services to the benefit of consumers, whilst at the same time allowing Kingston a fair rate of return which it would expect in a competitive market. The potential for a degree of flexibility envisaged in the approach to the recovery of cost of capital recognises that some investments will carry a higher degree of risk than others and does not remove incentives for the development of new services.

Responses to the draft notification – basis of charges obligations

9.106 Kingston argued that it would be disproportionate to impose a cost orientation obligation and cause it to incur the cost of putting in place a regulatory cost accounting separation system and having the outputs fully audited when there was no demand for wholesale leased lines products in the Hull area.

9.107 Ofcom notes Kingston's comments and would point out that the obligation to set cost oriented prices and be able to show that they are such will only apply where wholesale products are offered or required to be offered. If, as Kingston suggests, there is no demand for wholesale products in the Hull area, the obligation to set cost oriented prices will not come into force. Where, however, wholesale products are made available, it is important that the prices of such products are set on a cost oriented basis in order to enable other communications providers to compete fairly.

Conclusions – basis of charges obligations

9.108 Having considered the responses to the draft notification, Ofcom has concluded that it is appropriate to impose a condition in the form set out at Annex D.

Communications Act tests

9.109 Ofcom considers that the condition (Conditions GA3 and GGA3 in Annex D) meets the tests set out in the Act.

9.110 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, the condition encourages the provision of network access and service interoperability for the purpose of efficiency and sustainable competition in the markets for electronic communications networks, electronic communications services and associated facilities, in accordance with sections 4(7) and 4(8). Excessively high pricing of wholesale inputs distorts allocation of resources and leads to inefficiency for retail competitors who may be forced into using less efficient alternative technologies. Ensuring that Kingston as the dominant provider is unable to charge excessive prices will therefore promote competition and thereby promote the interests of end users, in accordance with sections 3(4)(b) and 4(3) of the Act.

9.111 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. Ofcom considers that the condition is an objectively justifiable and proportionate response to the extent of competition in the markets analysed, as it enables competitors to purchase services at charges that will enable them to develop competitive services to the benefit of consumers, whilst at the same time allowing Kingston a fair rate of return that it would expect in competitive markets. It does not unduly discriminate, as it is imposed on Kingston and no other communications provider has SMP in this market. Finally, it is transparent in that it is clear in its intention to ensure that Kingston charges on a LRIC plus mark-up basis.

9.112 Ofcom considers that imposition of this condition satisfies section 88 of the Act since without it there is a relevant risk of adverse effects arising from price distortion by Kingston, which has SMP in this market and has the ability to price above the competitive level, so as to have adverse consequences for end users of public electronic communications services. Ofcom further considers in this connection that the condition is appropriate for the purposes of promoting efficiency and sustainable competition and conferring the greatest possible benefits on the end users of public electronic communications services.

Kingston wholesale traditional interface symmetric broadband origination markets regulation 4: Requirement to publish a reference offer

9.113 Section 87(6)(c) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information for the purpose of securing transparency. Section 87(6)(d) also permits the setting of conditions requiring the dominant provider to include specified terms and conditions into the reference offer.

9.114 Kingston is currently obliged to publish prices, terms and conditions for any wholesale leased lines services. Under this obligation, Kingston would have to publish in respect of its wholesale services the prices, terms and conditions in the form of a Reference Offer (RO) – the published RO must include:

- a clear description of the services on offer;
- terms and conditions including charges and ordering, provisioning, billing and dispute resolution procedures . The RO should provide sufficient information to enable communications providers to make technical and commercial judgements such that there is no material adverse effect on competition;
- information relating to technical interfaces and points of interconnection. Such information should ensure that providers are able to make full and effective use of all the services provided;
- conditions relating to maintenance and quality (service level agreement). The inclusion of service levels, as part of the contractual terms of the RO, that provides for a minimum acceptable level of service, will ensure that services are provided in a fair, reasonable, timely and non-discriminatory fashion; and
- terms and conditions that are fair and reasonable. This will ensure that products are offered on terms and conditions as they would in a competitive market and that they are sensible, practical, and do not impose a margin squeeze on competitors.

9.115 The obligation prohibits Kingston from departing from the charges terms and conditions in the Reference Offer and requires Kingston to comply with any Directions Ofcom may make from time to time under the condition.

9.116 The condition also requires Kingston to publish information on the use of network components in providing TISBO services. Network components for TISBO services will be reviewed in the work stream referred to in paragraph 7.35 of Ofcom's statement of April 2004 on *The regulatory financial reporting obligations on BT and Kingston Communications in markets where SMP has been demonstrated*. Following this review, it is likely that Ofcom will direct changes to the current network component list to include appropriate network components for TISBO services. Once this anticipated direction is finalised, the obligation to publish this information will be more meaningful.

9.117 It might be argued that an obligation to publish prices could lead to communications providers following Kingston's prices, rather than being dynamic in setting prices at the true competitive level. Buyers may not exert so much power in the market if Kingston is unable to offer bespoke deals. However, Ofcom considers that requiring Kingston to publish prices, terms and conditions would help to create transparency in these markets where Kingston has been identified as having SMP. Since wholesale services are an input for retail products, transparency is necessary to ensure competition in downstream (retail) markets.

9.118 Ofcom therefore considers that a price publication obligation should be put in place. This accords with Article 9 and with Recital 16 of the Access Directive, which states that transparency of terms and conditions for access and interconnection, including prices, serves to speed up negotiation, avoid complaints and give confidence to market players that a service is not being provided on discriminatory terms.

9.119 This obligation will ensure that communications providers, end users and others are able to put to Ofcom fully justified and objectively reasoned complaints of anti-competitive behaviour by Kingston, and to obtain redress where appropriate.

Responses to the draft notification – publication of reference offer

9.120 Kingston has argued that it would be overly burdensome on it to require it to publish a reference offer when there is no demand for wholesale leased lines products in the Hull area.

9.121 As discussed at paragraph 9.64 above, Ofcom has concluded that it is not appropriate for it to set out in this statement the specific wholesale products that Kingston should be obliged to provide as a result of its network access obligation. Similarly, Ofcom has not used issued any Directions under that Condition to set out specific wholesale leased lines products that Kingston should make available. As such, there is currently no obligation on Kingston to make available any specific wholesale leased line product. On this basis, Ofcom does not consider it necessary for Kingston to publish a reference offer at this time. The obligation to publish a reference offer will only bite when Kingston makes available, or is directed to make available, a wholesale leased line product.

Conclusions – requirement to publish a reference offer

9.122 Having considered the responses to the draft notification, Ofcom has concluded that a condition should be imposed in these markets in the form set out at Annex D.

Communications Act tests

9.123 Ofcom considers that the condition (Conditions GA4 and GGA4 in Annex D) meets the tests set out in the Act.

9.124 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, the condition encourages compliance with the requirement not to discriminate unduly, for the purpose of facilitating service interoperability and securing freedom of choice for the customers of communications providers, in accordance with sections 4(7) and 4(8). It promotes the interests of purchasers of wholesale symmetric broadband origination services by enabling them to adjust their downstream offerings in competition with Kingston, in response to changes in Kingston's terms and conditions. It also promotes competition in the TISBO market by allowing Kingston's competitors in the provision of TISBO services to make appropriate changes to their products, in accordance with sections 3(4)(b) and 4(3) of the Act. Finally, it will allow Ofcom more easily to monitor discrimination, so ensuring competition in the downstream markets.

9.125 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The condition is objectively justifiable in that it requires that terms and condition are published in order to encourage competition and provide stability in markets by providing transparency of Kingston's prices, terms and conditions, thereby allowing communications providers to better plan their businesses and customer relationships. It is proportionate, as only information that is necessary to ensure that that there is no material adverse effect on competition is required to be provided. It does not unduly discriminate as it is applied to Kingston and no other provider has SMP in this market. Finally, it is transparent in that it is clear in its intention to ensure that Kingston publishes details of its terms and conditions.

9.126 Ofcom considers that imposing this obligation satisfies the conditions set out in section 87(4) of the Communications Act. Ofcom also believes that this condition is fair and reasonable taking into account the investment made by Kingston in its network. Given the potential for the development of alternative facilities in the current market, Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition in the long term, as it will ensure that communications providers are able to make effective use of wholesale inputs and offer products based on leased lines in competition with Kingston. In addition it will address the goal of ensuring that services based on leased line components are provided throughout the UK.

Kingston wholesale traditional interface symmetric broadband origination markets regulation 5: Requirement to publish technical information

9.127 Section 87(6)(c) of the Act authorises the setting of SMP services conditions requiring the dominant provider to publish, in such manner as Ofcom may direct, the terms and conditions on which it is willing to enter into an access contract. Section 87(6)(b) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information for the purpose of securing transparency.

9.128 Under the Condition ‘Requirement to publish a reference offer’, Kingston will be obliged to publish a Reference Offer for Network Access, which amongst other things, contains a description of the Network Access to be provided, including technical characteristics; the location of the points of Network Access; and technical standards for Network Access. The Condition ‘Requirement to publish technical information’ sets out additional obligations to publish new technical information 90 days in advance of entering into a contract to provide the new Network Access, or amendments to existing technical terms and conditions 90 days before those amended terms and conditions come into effect.

9.129 As set out above, the information to be published under this Condition comprises new or amended technical characteristics (including information on network configuration where to necessary to make effective use of the Network Access), locations of the points of Network Access and technical standards (including any usage restrictions and other security issues). Relevant information about network configuration is likely to include information about the function and connectivity of points of access, for example the connectivity of exchanges to end users and other exchanges.

9.130 This Condition is important to ensure that communications providers to whom Network Access is being provided by Kingston are able to make effective use of that Network Access. Changes to technical information must be published in advance so that communications providers have sufficient time to prepare. For example, a competing provider may have to introduce new equipment or modify existing equipment to support a new or changed technical interface. Similarly, a competing provider may need to make changes to their network in order to support changes in the points of network access or configuration.

9.131 Ofcom’s view is that 90 days is the minimum time that competing providers will need to modify their network to support a new or changed technical interfaces or support a new point of access or network configuration. Therefore, Ofcom has concluded that in the market for wholesale TISBO, Kingston must publish any new or modified technical characteristics, points of network access and technical standards not less than 90 days in advance of either Kingston entering into a contract to provide new Network Access or making technical changes to existing Network Access, unless Ofcom consents otherwise.

Responses to the draft notification – requirement to provide technical information

9.132 No comments were received on this issue.

Conclusions – requirement to provide technical information

9.133 Having considered responses received in other market review consultations, in particular those received in response to the *Review of the Wholesale Broadband Access Markets*, Ofcom considers that there may be instances where Kingston, to meet its obligations under the condition to provide Network Access on reasonable request, should provide a period of longer than 90 days. For example, if Kingston were to make a major change to its technical terms and conditions, a period of more than the 90 day minimum notification period may be necessary.

9.134 Ofcom has, therefore, amended Conditions GA5 and GGA5 in Annex D to include a reference to publishing a notice “within a reasonable time period but not less than 90 days” before providing the new wholesale services or amending existing technical terms and conditions. Ofcom believes that 90 days is a practical standard period and notes that it is able and willing to consent to a shorter period in justified circumstances. Equally, where longer notice is reasonably required, it must be given.

Communications Act tests

9.135 Ofcom considers that the Condition meets the tests set out in the Act. Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom’s principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom in imposing the Condition has considered all the Community requirements in section 3 and in particular the requirement to promote competition and to encourage service interoperability for the purpose of securing efficient and sustainable competition and the maximum benefits for consumers by ensuring that providers have sufficient notification of technical changes to Kingston’s network to enable them compete in sections 4(7) and 4(8) of the Act.

9.136 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The condition is objectively justifiable in that it enables competing communications providers to make full and effective use of Network Access. It does not unduly discriminate in that it is imposed on Kingston and no other communications provider has SMP in these markets. It is proportionate in that 90 days is the minimum necessary to allow competing providers to modify their networks. It is transparent in that it is clear in its intention that Kingston should notify technical information as set out above.

9.137 Ofcom considers that imposing this obligation satisfies the conditions set out in section 87(4) of the Communications Act. Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition in the long term, by ensuring communications providers can make effective use of wholesale inputs and offer products based on these wholesale inputs in competition with Kingston. In addition it will address the goal of ensuring that services based on leased line components are provided throughout the UK. By requiring Kingston to provide advance notification of technical changes, communications providers will be able to better plan their businesses and relationships with their customers.

Consultation on interfaces

9.138 Current regulation on Kingston (licence condition 15) includes a requirement to consult on interfaces where so directed by Ofcom. This was to ensure that Kingston could not impose unnecessary costs on competing communications providers by specifying a proprietary interface. However, Ofcom recognises that communications providers are constrained in their choice of interface by the standardised nature of most communications equipment. In addition, Ofcom believes that the scope for further modifications to traditional PSTN equipment, where Kingston was most likely to be able exert control over interface specifications, is likely to be limited in the future, as communications providers and equipment manufacturers increasingly look to other technologies.

9.139 Therefore, Ofcom now considers it unlikely that Kingston would be able to exert control over interfaces in a way that could have an adverse effect on competition. Consequently, Ofcom does not believe that imposing a condition requiring consultation on interfaces would be proportionate.

Kingston upon Hull wholesale traditional interface symmetric broadband origination markets: Conclusion on regulation

9.140 Ofcom has concluded that Kingston has SMP in these markets, and that as a consequence the following regulatory measures should be imposed:
1. general access obligation to supply wholesale products upon request;
2. requirement not to unduly discriminate;
3. basis of charges obligations (cost orientation);
4. requirement to publish a reference offer; and
5. requirement to publish technical information.

9.141 Conditions of entitlement reflecting these preferred options are set out in Annex D. The obligations for these markets are broadly similar to those currently applying.

Wholesale alternative interface symmetric broadband origination market in the Hull area

9.142 In Chapter 2, Ofcom has also identified an additional market in the Hull area, Alternative Interface Symmetric Broadband Origination (AISBO). In Chapter 3, Ofcom identified that Kingston has SMP in this market. As a consequence, Ofcom is imposing the following regulation in this market:
1. a general access obligation to supply wholesale AISBO products upon request;
2. requirement not to unduly discriminate;
3. basis of charges obligations (cost orientation);
4. requirement to publish a reference offer; and
5. requirement to publish technical information.

9.143 Any SMP conditions imposed must comply with the various tests set out in section 87(4) of the Communications Act. Ofcom must also bear in mind the duties set out in section 4 of the Act.

9.144 In particular, each SMP condition must pass the test set out in section 47 of the Act, namely that each condition must be:
(a) objectively justifiable in relation to the networks, services or facilities to which it relates;
(b) not such as to discriminate unduly against particular persons or a particular description of persons;
(c) proportionate to what the condition is intended to achieve; and
(d) in relation to what it is intended to achieve, transparent.

9.145 It is Ofcom's view that the conditions imposed in this statement satisfy the relevant requirements specified in the Act, as discussed in detail in the following paragraphs.

Kingston wholesale AISBO markets regulation 1: Requirement to provide network access on reasonable request

9.146 Section 87(3) of the Act authorises the setting of SMP services conditions requiring the dominant provider to provide network access as Ofcom may from time to time direct. These conditions may, pursuant to section 87(5) include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions. When considering the imposition of such conditions in a particular case, Ofcom must have regard to the 6 factors set out in section 87(4) of the Act, including, *inter alia*, the technical and economic viability of installing other competing facilities and the feasibility of the proposed network access.

9.147 Kingston is required under this obligation to supply wholesale AISBO products on reasonable request. Kingston has been found to have SMP in this market. This regulation will allow communications providers to negotiate innovative wholesale products which will enable them to compete in the retail markets, encouraging competition at the retail level. If the obligation were not imposed, Kingston would be able to deny access or impose unreasonable terms having a similar effect, thereby hindering the emergence of competitive retail markets for leased lines and other services which may rely on these inputs.

9.148 While formulation of specific obligations may from time to time be appropriate, either for the avoidance of doubt or in resolving a dispute, Ofcom proposes to rely as far as possible on the general obligation. This removes the need for Ofcom to specify the details of products to be supplied (which it is often not best placed to do), and provides a regime which is responsive to future market and technical developments. While the scope is broad, it is appropriately limited by the ability of Kingston to refuse any request which is unreasonable. (Ofcom's views on reasonableness in this context are set out in Oftel's Access Guidelines.) The Access Directive states in Article 12 that an NRA may impose access obligations where the denial of access or unreasonable terms and conditions having a similar effect would hinder the emergence of a sustainable competitive market at the retail level, or would not be in the end users' interest. If wholesale leased line products are made available to communications providers upon reasonable request, this will enable them to construct their own retail equivalent products, thereby increasing the level of competition at the retail level with benefits that will feed through to consumers.

9.149 It might be argued that reliance on a general obligation to provide access may require Ofcom to resolve multiple disputes on the provision of wholesale products. However, this appears to be unlikely since communications providers have to date expressed relatively little interest in competing in this market, and because of this at the current time Ofcom does not have the information necessary to specify particular forms of access.

9.150 Reliance on the Competition Act for communications providers' general access requirements will, in Ofcom's view, be insufficient because of the network-based nature of the industry, and would be inconsistent with Ofcom's objective of promoting competition.

9.151 Ofcom therefore considers that it is necessary to introduce a general access obligation for the Kingston upon Hull market, to deal with new wholesale leased line products that may be required by communications providers in the future.

9.152 The words "fair and reasonable terms" would be interpreted by Ofcom as meaning, amongst other things, terms which did not lead to any sort of margin squeeze between wholesale and retail markets, since a margin squeeze is in effect a constructive refusal to supply, i.e. a refusal to supply on commercially viable terms. Thus there will be no need to introduce a specific condition to deal with such an eventuality. The provision of Network Access on fair and reasonable terms and conditions should, where appropriate, include reasonable service level agreement and compensation which ensures such SLAs would be effective.

9.153 Recital 6 of the Access Directive states that:

"in markets where there continue to be large differences in negotiating power between undertakings, and where some undertakings rely on infrastructure provided by others for delivery of their services, it is appropriate to secure…adequate access and interconnection and interoperability of services in the interests of end users."

9.154 Ofcom considers the wholesale AISBO market in Hull to be of this type because of Kingston's position of SMP, and in accordance with the Access Directive considers it necessary to ensure end-to-end connectivity by imposing proportionate obligations on undertakings that control access to end users.

9.155 Implementation of this obligation also fits with Recital 18 of the Framework Directive which requires NRAs where possible to take the utmost account of the desirability of making regulation technologically neutral. Communications providers will be able to use Kingston's wholesale AISBO products to provide services of their choice. Thus this measure is not linked to the activities of the party seeking interconnection of the degree of its investment in network infrastructure, and it consequently accords also with Recital 7 of the Access Directive.

Responses to the draft notification – network access obligation

9.156 Kingston has argued in its response that the AISBO market is contestable as wireless technology can be used to provide competing products. The relatively low cost of such technology and the lack of need of a fibre network meant that other communications providers were not dependant on Kingston in order to be able to provide retail alternative interface products.

9.157 Ofcom is aware that wireless technology can be used in some circumstances to provide alternatives to fibre-based AISBO products. Ofcom however notes that such technologies are limited by the general need for line-of-sight and the need for planning permission/agreement to install wireless receivers or masts. Cities, such as Hull, are therefore less well suited to the use of such technologies due to the number of buildings that could interrupt the line of sight and the difficulties in obtaining consent to erect wireless masts or receivers.

9.158 Ofcom has concluded that the AISBO market in Hull is not competitive and that it is appropriate to impose a network access obligation.

Conclusions – obligation to provide network access

9.159 Having considered all the responses to the draft notification, Ofcom is of the view that it is appropriate to impose a network access obligation on Kingston in the form set out at Annex D.

9.160 Ofcom does not propose to replicate the Annex II list to define entitlement to Network Access. This is because Annex II status flows from the Interconnection Directive 97/33/EC. The provisions of that Directive – including the concept of Annex II status – will fall on completion of the market reviews.

9.161 For the purposes of the Network Access condition, the definition of Third Party has been amended to the provider of a **public** electronic communications network or **public** electronic communications service (i.e. electronic communications networks which are provided wholly or mainly for the purpose of making electronic communications services available to members of the public; and electronic communications services that are provided so as to be available for use by members of the public). Accordingly, providers of non-public electronic communications networks or non-public electronic communications services will not be entitled to Network Access under the condition. This maintains the status quo existing prior to these consultations.

9.162 Further guidance as to how Ofcom proposes to apply the Network Access obligation can be found in the Oftel's guidelines on imposing access obligations under the new EU Directives, dated 13 September 2002 (the "Access Guidelines") and Oftel's guidelines for the interconnection of public electronic communications networks, dated 23 May 2003 (the "Interconnection Guidelines"). These guidelines can be found at www.ofcom.org.uk/static/archive/oftel/publications/ind_guidelines/acce0902.htm and http://www.ofcom.org.uk/static/archive/oftel/publications/eu_directives/ 2003/intercon0503.htm respectively.

Communications Act tests

9.163 Ofcom considers that the imposed condition (Condition HA1 in Annex D) meets the tests set out in the Act.

9.164 In Ofcom's view, this condition meets the tests set out in section 47 of the Act. The condition is objectively justifiable, in that it relates to the need to ensure that competition develops to the benefit of consumers. It does not unduly discriminate, as it is imposed on Kingston and no other communications provider has SMP in this market. It is proportionate, since it is targeted at addressing the market power that

Kingston holds in this market and does not require it to provide access if it is not technically feasible or reasonable. Finally, it is transparent in that it is clear in its intention to ensure that Kingston provides access to its network in order to facilitate competition.

9.165 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4 of the Act. In particular, because it requires Kingston to provide the necessary access products, the condition encourages the provision of network access and service interoperability for the purpose of ensuring efficiency and promoting competition in the downstream markets, in accordance with sections 4(7) and 4(8) of the Act. As Kingston has market power in the provision of wholesale AISBO, it controls a key input into a range of downstream services – principally leased lines but also virtual private networks, managed services etc. In requiring this condition, Ofcom is promoting competition and the interests of consumers and maximising choice in the markets for those downstream services, in accordance with sections 3(4)(b) and 4(3) of the Act.

9.166 In addition, Ofcom considers that imposition of this condition satisfies the conditions set out in section 87(4) of the Communications Act. In particular, it is fair and reasonable taking into account the investment made by Kingston in its network, which means that it is in a position to provide these products upon reasonable request; the need to secure effective competition in the long term; and the desirability of securing that electronic communications services are provided that are available throughout the UK.

Kingston wholesale AISBO markets regulation 2: Requirement not to unduly discriminate

9.167 Section 87(6)(a) of the Act authorises the setting of an SMP services condition requiring the dominant provider not to unduly discriminate against particular persons, or against a particular description of persons, in relation to matters connected with the provision of network access. The requirement not to unduly discriminate is intended, principally, to prevent dominant providers from discriminating in favour of their own retail activities and to ensure that competing providers purchasing wholesale products from the dominant provider are placed in an equivalent position to the dominant provider's retail arm.

9.168 Where dominant providers are vertically integrated, like Kingston, they may have an incentive to provide wholesale services on terms and conditions that favour their own retail activities, in a way that would have a material adverse effect on competition. In particular, they may charge competing providers more than the amount charged (through transfer charging) to their own retail activities for wholesale services, thereby increasing the costs of competing providers and giving themselves an unfair competitive advantage. They might also provide services on different terms and conditions, for example with different delivery timescales, which would disadvantage their retail competitors and in turn consumers.

9.169 In the absence of a non discrimination condition, Ofcom could be called upon to investigate alleged breaches of the Competition Act prohibition on anticompetitive agreements and abuse of a dominant position, and might be required to resolve successive complaints. Imposing an *ex ante* condition in this instance will reduce the potential regulatory costs emanating from multiple or successive complaints related to discrimination.

9.170 It could be argued that the Competition Act provides adequate provision to address allegations or gather evidence of discriminatory behaviour. However, Ofcom considers that at the wholesale level sectoral regulation provides a faster and more secure means of giving effect to decisions and determinations. In addition, it allows Ofcom to place a greater emphasis on promoting competition (for example by restricting the ability of an SMP communications provider to target segments of the retail market).

9.171 It might also be argued that a requirement not to unduly discriminate prevents Kingston from fully exploiting its economies of scale. If Kingston were able to discriminate, it would be able, when needed, to quote a lower price in order to attract sufficient numbers of customers to ensure that its infrastructure is utilised at full capacity. Although this is a valid consideration, Ofcom considers that it is far outweighed by the fact that in view of Kingston's position of SMP, it would also be able to use discrimination for other purposes less constructive than maximisation of capacity utilisation, and that this would have a harmful effect on competition.

9.172 Ofcom therefore considers that it is necessary to impose a non discrimination obligation.

9.173 A prohibition of discrimination might have disadvantages if it prevented discrimination that was economically efficient or justified. However, the condition provides that there should be no *undue* discrimination. Guidance as to how Ofcom might treat undue discrimination can be found in Oftel's Access Guidelines (it should be noted that Ofcom intends to consult on non-discrimination guidelines later on in 2004). The Guidelines note that any obligation with respect to undue discrimination has the objective of preventing behaviour that has a material adverse effect on competition. This does not mean that there should not be any differences in treatment between undertakings, rather that any differences should be objectively justifiable, for example, by differences in underlying costs of supplying different undertakings. The Guidelines also note that in the Oftel's view, there is a rebuttable presumption that a vertically integrated SMP communications provider discriminating in favour of its own retail activities or between others of its own activities would have a material adverse effect on competition (paragraph 3.9). This view would also apply to discrimination in relation to the underlying components of services.

Responses to the draft notification – no undue discrimination

9.174 No comments, other than those which have already been taken into account, were received on this issue.

Conclusions – no undue discrimination

9.175 For the reasons set out above, Ofcom has concluded it is appropriate to impose condition HA2 in Annex D, which prohibits *undue* discrimination. This condition remains in the same terms as the condition previously consulted on.

Communications Act tests

9.176 Ofcom considers that the condition meets the tests set out in the Act.

9.177 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, because it requires Kingston to provide the necessary access products on a non discriminatory basis, the condition encourages the provision of network access and service interoperability for the purpose of efficiency and sustainable competition in the downstream markets, in accordance with sections 4(7) and 4(8). As Kingston has market power in the provision of wholesale AISBO, it controls a key input into a range of downstream services – principally leased lines but also virtual private networks, managed services etc. By allowing communications providers access on non-discriminatory terms, competition at the retail level will be encouraged, thereby promoting competition and the interests of consumers and maximising choice in the markets for those downstream services, in accordance with sections 3(4)(b) and 4(3) of the Act.

9.178 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. Ofcom considers that this condition is objectively justifiable, in that it provides safeguards to ensure that competitors, and hence consumers, are not disadvantaged by Kingston discriminating in favour of its own retail activities or between its own different activities. It does not unduly discriminate, as it is imposed only on communications providers who have SMP. It is proportionate since it only prevents behaviour which is unduly discriminatory. Finally, it is transparent in that it is clear in its intention to ensure that Kingston does not unduly discriminate.

9.179 Ofcom considers that imposition of this condition satisfies the conditions set out in section 87(4) of the Communications Act. Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition in the long term, as it will ensure that communications providers are able to make effective use of wholesale inputs and offer products based on these wholesale inputs in competition with Kingston. By allowing communications providers access on non-discriminatory terms, competition at the retail level will be encouraged, thereby addressing the goal of ensuring that services based on leased line components are provided throughout the geographic market.

Kingston wholesale AISBO markets regulation 3: Basis of charges obligations (cost orientation)

9.180 Section 87(9) authorises the setting of SMP services conditions imposing on the dominant provider rules concerning the recovery of costs and cost orientation.

9.181 Under this obligation, Kingston would be required to provide wholesale services at cost oriented prices. As Kingston has been identified as having SMP in this market, the availability of wholesale services at cost oriented prices would ensure that the competition in the retail alternative interface leased lines and other downstream markets should lead to lower prices.

9.182 It might be argued that the Competition Act should be used to avoid excessive or predatory pricing. However, Ofcom considers that sectoral tests are likely to be more stringent and more effective than the Competition Act, giving the SMP communications provider less latitude and providing greater certainty for access customers.

9.183 Ofcom therefore considers that it is necessary to apply this obligation. The condition sets out that the charges for services should be reasonably derived from the costs of providing those services. It further states that the costs must be calculated on a forward looking long run incremental cost approach, and allowing an appropriate mark-up for the recovery of common costs including an appropriate return on capital employed.

9.184 The condition will apply across all services within this market. This means that the price of all services provided by Kingston in the market should be based on LRIC and allowing an appropriate mark-up.

9.185 Ofcom confirms that all new services that are introduced into this market will also be covered by the same pricing rule. This is because new services in the same market would be expected to be subject to the same competitive conditions as existing services. This does not however mean that Kingston cannot recover costs appropriate to new wholesale services. The recovery of efficiently incurred costs for new wholesale services was discussed in paragraphs 2.23 – 2.25 of Oftel's access guidelines.

9.186 Although this condition will apply to all services in this market, and the expectation is that the treatment of new services under the condition will be the same as for existing services, there may be occasional exceptions to this rule. This may arise where the new service is innovative and thus warrants a different regulatory approach. There are three ways in which such services can be dealt with.

i) The service may be so innovative that it falls in a completely new and separate market. In this case the appropriate regulatory obligations will be determined by Ofcom following analysis of this new market.

ii) The new service falls within the market but Ofcom determines that an alternative charging basis is appropriate. For example, a different charging basis may be appropriate for services offered during a trial.

iii) The new service falls within the market and the cost orientation obligation is applied, but there might be a range of prices which would be consistent with cost orientation given the uncertainty about the take up and future profitability of the service. In determining whether a charge is not cost oriented, Ofcom would consider whether the expected or achieved return on capital was excessive. In making this assessment, Ofcom will need to take account of the risk of the new service failing and the lost investment that would result. This therefore maintains an appropriate incentive for the communications provider to invest in new services and technologies.

9.187 The condition contains a clause enabling Ofcom to determine that a price need not be set on a forward-looking LRIC basis. This is particularly relevant to scenario ii) above where Ofcom determines that an alternative charging basis is appropriate. If Kingston wishes to set a price for any service in the market on any other basis than forward-looking LRIC, it must apply to Ofcom for permission to do this.

9.188 Ofcom considers that the cost orientation condition is justifiable and a proportionate response to the extent of competition in the markets analysed. It enables competitors to purchase services at a rate which will enable them to develop competitive services to the benefit of consumers, whilst at the same time allowing Kingston a fair rate of return which it would expect in a competitive market. The potential for a degree of flexibility envisaged in the approach to the recovery of cost of capital recognises that some investments will carry a higher degree of risk than others and does not remove incentives for the development of new services.

Responses to the draft notification – basis of charges obligations

9.189 Kingston has expressed concern at the cost of putting in place the accounting systems necessary to support the cost orientation obligation and having the outputs fully audited. Given the lack of interest in wholesale leased lines products in the Hull area, Kingston argues that such an obligation is not proportionate.

9.190 The cost orientation obligation only comes into effect when Kingston offers or becomes obliged to offer a wholesale AISBO product. Thus the need to show that charges are complying with the cost orientation obligation will only arise when reasonable demand for wholesale AISBO products has occurred. Ofcom remains of the view that where wholesale AISBO products are offered by Kingston, that they be priced on a cost oriented basis to ensure that other communications providers able to compete effectively.

Conclusions – basis of charges obligations

9.191 Having considered the responses to the draft notification, Ofcom has concluded that it is reasonable that a condition should be imposed in this market in the form set out at Annex D.

Communications Act tests

9.192 Ofcom considers that the condition (Condition HA3 in Annex D) meets the tests set out in the Act.

9.193 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, the condition encourages the provision of network access and service interoperability for the purpose of efficiency and sustainable competition in the markets for electronic communications networks, electronic communications services and associated facilities, in accordance with sections 4(7) and 4(8). Excessively high pricing of wholesale inputs distorts allocation of resources and leads to inefficiency for retail competitors who may be forced into using less efficient alternative technologies. Ensuring that Kingston as the dominant provider is unable to charge excessive prices will therefore promote competition and thereby promote the interests of end users, in accordance with sections 3(4)(b) and 4(3) of the Act.

9.194 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. Ofcom considers that the condition is an objectively justifiable and proportionate response to the extent of competition in the market analysed, as it enables competitors to purchase services at charges that will enable them to develop competitive services to the benefit of consumers, whilst at the same time allowing Kingston a fair rate of return that it would expect in competitive markets. It does not unduly discriminate, as it is imposed on Kingston and no other communications provider has SMP in this market. Finally, it is transparent in that it is clear in its intention to ensure that Kingston charges on a LRIC plus mark-up basis.

9.195 Ofcom considers that imposition of this condition satisfies section 88 of the Act since without it there is a relevant risk of adverse effects arising from price distortion by Kingston, which has SMP in this market and has the ability to price above the competitive level, so as to have adverse consequences for end users of public electronic communications services. Ofcom further considers in this connection that the condition is appropriate for the purposes of promoting efficiency and sustainable competition and conferring the greatest possible benefits on the end users of public electronic communications services.

Kingston wholesale AISBO markets regulation 4: Requirement to publish a reference offer

9.196 Section 87(6)(c) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information for the purpose of securing transparency. Section 87(6)(d) also permits the setting of conditions requiring the dominant provider to include specified terms and conditions into the reference offer.

9.197 Kingston is currently obliged to publish prices, terms and conditions for any wholesale leased lines services. Under this obligation, Kingston would have to publish in respect of its wholesale services the prices, terms and conditions in the form of a Reference Offer (RO) – the published RO must include:

- a clear description of the services on offer;
- terms and conditions including charges and ordering, provisioning, billing and dispute resolution procedures . The RO should provide sufficient information to enable communications providers to make technical and commercial judgements such that there is no material adverse effect on competition;
- information relating to technical interfaces and points of interconnection. Such information should ensure that providers are able to make full and effective use of all the services provided;
- conditions relating to maintenance and quality (service level agreement). The inclusion of service levels, as part of the contractual terms of the RO, that provides for a minimum acceptable level of service, will ensure that services are provided in a fair, reasonable, timely and non-discriminatory fashion; and
- terms and conditions that are fair and reasonable. This will ensure that products are offered on terms and conditions as they would in a competitive market and that they are sensible, practical, and do not impose a margin squeeze on competitors.

9.198 The imposed obligation prohibits Kingston from departing from the charges terms and conditions in the Reference Offer and requires Kingston to comply with any Directions that Ofcom may make from time to time under the condition. It also requires Kingston to publish information on the use of network components in providing AISBO services. Network components for AISBO services will be reviewed in the work stream referred to in paragraph 7.35 of Ofcom's statement of April 2004 on *The regulatory financial reporting obligations on BT and Kingston Communications in markets where SMP has been demonstrated*. Following this review, it is likely that Ofcom will direct changes to the current network component list to include appropriate network components for AISBO services. Once this anticipated direction is finalised, the obligation to publish this information will be more meaningful.

9.199 It might be argued that an obligation to publish prices could lead to communications providers following Kingston's prices, rather than being dynamic in setting prices at the true competitive level. Buyers may not exert so much power in the market if Kingston is unable to offer bespoke deals. However, Ofcom considers that requiring Kingston to publish prices, terms and conditions would help to create transparency in these markets where Kingston has been identified as having SMP. Since wholesale services are an input for retail products, transparency is necessary to ensure competition in downstream (retail) markets.

9.200 Ofcom therefore considers that a price publication obligation should be put in place. This accords with Article 9 and with Recital 16 of the Access Directive, which states that transparency of terms and conditions for access and interconnection, including prices, serves to speed up negotiation, avoid complaints and give confidence to market players that a service is not being provided on discriminatory terms. This obligation will ensure that communications providers, end users and others are able to put to Ofcom fully justified and objectively reasoned complaints of anti-competitive behaviour by Kingston, and to obtain redress where appropriate.

Responses to the draft notification – publication of reference offer

9.201 Kingston has argued that it would be overly burdensome on it to require it to publish a reference offer when there is no demand for wholesale AISBO products in the Hull area.

9.202 As discussed at paragraph 9.64 above, Ofcom has concluded that it is not appropriate for it to set out in this statement the specific wholesale products that Kingston should be obliged to provide as a result of it network access obligation. Similarly, Ofcom has not used issued any Directions under that Condition to set out specific wholesale leased lines products that Kingston should make available. As such, there is currently no obligation on Kingston to make available any specific wholesale AISBO product. On this basis, Ofcom does not consider it necessary for Kingston to publish a reference offer at this time. The obligation to publish a reference offer will only come into force when Kingston makes available, or is directed to make available, a wholesale leased line product.

Conclusions – requirement to publish a reference offer

9.203 Having considered the responses to the draft notification, Ofcom considers it appropriate that a condition should be imposed in these markets in the form set out at Annex D.

Communications Act tests

9.204 Ofcom considers that the condition (Condition HHA4 in Annex D) meets the tests set out in the Act.

9.205 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all the Community requirements set out in sections 3 and 4. In particular, the condition encourages compliance with the requirement not to discriminate unduly, for the purpose of facilitating service interoperability and securing freedom of choice for the customers of communications providers, in accordance with sections 4(7) and 4(8). It promotes the interests of purchasers of wholesale AISBO services by enabling them to adjust their downstream offerings in competition with Kingston, in response to changes in Kingston's terms and conditions. It also promotes competition in the AISBO market by allowing Kingston's competitors in the provision of AISBO services to make appropriate changes to their products, in accordance with sections 3(4)(b) and 4(3) of the Act. Finally, it will allow Ofcom more easily to monitor discrimination, so ensuring competition in the downstream markets.

9.206 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The condition is objectively justifiable in that it requires that terms and condition are published in order to encourage competition and provide stability in markets by providing transparency of Kingston's prices, terms and conditions, thereby allowing communications providers to better plan their businesses and customer relationships. It is proportionate, as only information that is necessary to ensure that that there is no material adverse effect on competition is required to be provided. It does not unduly discriminate as it is applied to Kingston and no other provider has SMP in this market. Finally, it is transparent in that it is clear in its intention to ensure that Kingston publishes details of its terms and conditions.

9.207 Ofcom considers that imposing this obligation satisfies the conditions set out in section 87(4) of the Communications Act. Ofcom also believes that this condition is fair and reasonable taking into account the investment made by Kingston in its network. Given the potential for the development of alternative facilities in the current market, Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition in the long term, as it will ensure that communications providers are able to make effective use of wholesale inputs and offer products based on leased lines in competition with Kingston. In addition it will address the goal of ensuring that services based on leased line components are provided throughout the member States of the EU.

Kingston wholesale AISBO markets regulation 5: Requirement to publish technical information

9.208 Section 87(6)(c) of the Act authorises the setting of SMP services conditions requiring the dominant provider to publish, in such manner as Ofcom may direct, the terms and conditions on which it is willing to enter into an access contract. Section 87(6)(b) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information for the purpose of securing transparency.

9.209 Under the Condition 'Requirement to publish a reference offer', Kingston will be obliged to publish a Reference Offer for Network Access, which amongst other things, contains a description of the Network Access to be provided, including technical characteristics; the location of the points of Network Access; and technical standards for Network Access. The Condition 'Requirement to publish technical information' sets out additional obligations to publish new technical information 90 days in advance of entering into a contract to provide the new Network Access, or amendments to existing technical terms and conditions 90 days before those amended terms and conditions come into effect.

9.210 As set out above, the information to be published under this Condition comprises new or amended technical characteristics (including information on network configuration where to necessary to make effective use of the Network Access), locations of the points of Network Access and technical standards (including any usage restrictions and other security issues). Relevant information about network configuration is likely to include information about the function and connectivity of points of access, for example the connectivity of exchanges to end users and other exchanges.

9.211 This Condition is important to ensure that communications providers to whom Network Access is being provided by Kingston are able to make effective use of that Network Access. Changes to technical information must be published in advance so that communications providers have sufficient time to prepare. For example, a competing provider may have to introduce new equipment or modify existing equipment to support a new or changed technical interface. Similarly, a competing provider may need to make changes to their network in order to support changes in the points of network access or configuration.

9.212 Ofcom's view is that 90 days is the minimum time that competing providers will need to modify their network to support a new or changed technical interfaces or support a new point of access or network configuration. Therefore, Ofcom has concluded that in the market for wholesale AISBO, Kingston must publish any new or modified technical characteristics, points of network access and technical standards not less than 90 days in advance of either Kingston entering into a contract to provide new Network Access or making technical changes to existing Network Access, unless Ofcom consents otherwise.

Responses to the draft notification – requirement to provide technical information

9.213 No comments were received on this issue.

Conclusions – requirement to provide technical information

9.214 Having considered responses received in other market review consultations, in particular those received in response to the *Review of the Wholesale Broadband Access Markets*, Ofcom considers that there may be instances where Kingston, to meet its obligations under the condition to provide Network Access on reasonable request, should provide a period of longer than 90 days. For example, if Kingston were to make a major change to its technical terms and conditions, a period of more than the 90 day minimum notification period may be necessary.

9.215 Ofcom has, therefore, amended Condition HA5 in Annex D to include a reference to publishing a notice "within a reasonable time period but not less than 90 days" before providing the new wholesale services or amending existing technical terms and conditions. Ofcom believes that 90 days is a practical standard period and notes that it is able and willing to consent to a shorter period in justified circumstances. Equally, where longer notice is reasonably required, it must be given.

Communications Act tests

9.216 Ofcom considers that the Condition meets the tests set out in the Act. Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom, in imposing the Condition, has considered all the Community requirements in section 3 and in particular the requirement to promote competition and to encourage service interoperability for the purpose of securing efficient and sustainable competition and the maximum benefits for consumers by ensuring that providers have sufficient notification of technical changes to Kingston's network to enable them compete in sections 4(7) and 4(8) of the Act.

9.217 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The condition is objectively justifiable in that it enables competing communications providers to make full and effective use of Network Access. It does not unduly discriminate in that it is imposed on Kingston and no other communications provider has SMP in this market. It is proportionate in that 90 days is the minimum necessary to allow competing providers to modify their networks. It is transparent in that it is clear in its intention that Kingston should notify technical information as set out above.

9.218 Ofcom considers that imposing this obligation satisfies the conditions set out in section 87(4) of the Communications Act. Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition in the long term, by ensuring communications providers can make effective use of wholesale inputs and offer products based on these wholesale inputs in competition with Kingston. In addition it will address the goal of ensuring that services based on leased line components are provided throughout the UK. By requiring BT to provide advance notification of technical changes, communications providers will be able to better plan their businesses and relationships with their customers.

Consultation on interfaces

9.219 Current regulation on Kingston (licence condition 15) includes a requirement to consult on interfaces where so directed by Ofcom. This was to ensure that Kingston could not impose unnecessary costs on competing communications providers by specifying a proprietary interface. However, Ofcom recognises that communications providers are constrained in their choice of interface by the standardised nature of most communications equipment. In addition, Ofcom believes that the scope for further modifications to traditional PSTN equipment, where Kingston was most likely to be able exert control over interface specifications, is likely to be limited in the future, as communications providers and equipment manufacturers increasingly look to other technologies.

9.220 Therefore, Ofcom now considers it unlikely that Kingston would be able to exert control over interfaces in a way that could have an adverse effect on competition. Consequently, Ofcom does not believe that imposing a condition requiring consultation on interfaces would be proportionate.

Kingston upon Hull wholesale AISBO market: Conclusion on regulation

9.221 Ofcom has concluded that Kingston has SMP in this market, and that as a consequence the following regulatory measures are to be imposed:

1. general access obligation to supply wholesale products upon request;
2. requirement not to unduly discriminate;
3. basis of charges obligations (cost orientation);
4. requirement to publish a reference offer; and
5. requirement to publish technical information.

9.222 Conditions of entitlement reflecting these measures are set out in Annex D. The obligations for this market are broadly similar to those currently applying in the wholesale SBO markets in Hull.

Chapter 10

Cost accounting and accounting separation conditions

10.1 This chapter discusses the financial reporting obligations that may be imposed on BT and Kingston, to ensure that a number of the obligations set out in Chapters 5 to 9 are met. In particular, obligations of cost orientation, price controls and non discrimination can require the imposition of financial reporting regimes to monitor dominant providers' compliance with these obligations. This chapter discusses in some detail the imposition of obligations for cost accounting systems and accounting separation.

10.2 Ofcom considers that it is appropriate to impose cost accounting and accounting separation obligations in certain of the markets covered in this review. The two sub-sections below outline the markets in which these financial reporting obligations are required and the reasons for them being required.

10.3 The processes of cost accounting and accounting separation are complex, covering issues such as cost attribution methodologies, accounting standards, audit, transparency, disaggregation, reconciliation and publication of information. These practical processes are distinct from the questions of principle, such as the level of regulation in the market, the remedies to be applied, etc. For example, the decision on whether to impose a cost accounting obligation and the level of information required is made on the basis of the findings of the market review. Nevertheless, the practical processes must be consistent across all markets susceptible to regulation to ensure that there is certainty for Ofcom, the dominant providers and other persons in the market regarding regulatory financial information requirements.

10.4 Therefore, on 8 April 2004, Ofcom published the document *The regulatory financial reporting obligations on BT and Kingston Communications in markets where SMP has been demonstrated.* This document can be found at www.ofcom.org.uk/consultations/current/financial_rep/?a=87101. This consultation closed on 10 May 2004 and responses to the consultation can be found on Ofcom's website.

10.5 The scope of *The regulatory financial reporting obligations on BT and Kingston Communications in markets where SMP has been demonstrated* was to address the issues of how the requirements for cost accounting and accounting separation will be implemented. It contained the draft cost accounting and accounting separation conditions. It also proposed the level of granularity required for such obligations to be imposed in a proportionate and appropriate manner. Ofcom intends to publish the explanatory statement and formal notifications on regulatory financial reporting towards the end of the market review process so that the requirements of the accounting separation condition and the cost accounting condition can reflect the findings of the majority of individual reviews.

Cost accounting systems

10.6 Under sections 87(9) to 87(11) and 88 of the Communications Act, appropriate cost accounting obligations may be imposed on dominant providers in respect of the provision of network access, the use of the relevant network and the availability of relevant facilities. Cost accounting rules may be made in relation to charge controls, the recovery of costs and cost orientation.

10.7 In the following markets where Ofcom concludes that BT should be designated as having SMP:

- retail low bandwidth traditional interface (analogue circuits and 8Mbit/s circuits only);
- wholesale traditional interface symmetric broadband origination ("TISBO") low and high bandwidth;
- wholesale alternative interface symmetric broadband origination ("AISBO"); and
- wholesale trunk segments;

Ofcom has concluded in regulation 3 relating to each market, that charges should be cost-oriented on the basis of LRIC with an appropriate mark-up for the recovery of common costs. For the latter (wholesale) markets this is, as explained in the relevant sections, to ensure that BT's charges are constrained to enable competitors purchasing such services to compete with the dominant provider in downstream markets. In particular, these sections describe why LRIC with an appropriate mark-up for the recovery of common costs, is a justifiable and proportionate response to the extent of competition in the markets analysed.

10.8 Ofcom has also concluded that Kingston has SMP in the retail market for low bandwidth traditional interface leased lines in the Kingston upon Hull area. Ofcom considers that, in this market, charges should be cost-oriented on the basis of LRIC with an appropriate mark-up for the recovery of common costs (see regulation 3 in relation to that market).

10.9 In addition, in regulation 4 for the wholesale TISBO low and high bandwidth markets in the UK excluding Kingston upon Hull, Ofcom is imposing a charge control on BT. As explained in that section, such charge controls are necessary to ensure that competition develops to the benefit of consumers and to encourage network efficiency. In particular, the section and the associated Annex C of this document describe why the charge control is a justifiable and appropriate response to the extent of competition in those markets. It should be noted that Ofcom is not imposing a charge control on the wholesale services offered by Kingston, for the reasons given in Chapter 9.

10.10 Given the imposition of LRIC with an appropriate mark-up for the recovery of common costs on both BT and Kingston, and a charge control for BT, Ofcom is proposing that BT and Kingston should maintain appropriate cost accounting systems, that demonstrate that the obligations of cost orientation and (for BT) the charge control are being met. This will enable Ofcom to monitor compliance with those obligations.

10.11 The cost accounting obligations for BT will, therefore, apply to the following markets in the UK excluding Kingston upon Hull area:

- retail low bandwidth traditional interface (analogue circuits and 8Mbit/s circuits only);
- TISBO low and high bandwidth;
- AISBO; and
- wholesale trunk segments,

i.e. those markets in which BT must demonstrate that its charges are set on the basis of LRIC plus an appropriate mark-up for the recovery of common costs.

10.12 The cost accounting obligations for Kingston will, therefore, apply to the following markets in the Hull area:

- retail market for the minimum set of leased lines (including circuits of bandwidths between 64kbit/s and 2Mbit/s);
- TISBO low and high bandwidth; and
- AISBO.

That is, Kingston must demonstrate that its charges are set on the basis of LRIC plus an appropriate mark-up for the recovery of common costs. In relation to the basis of charges, Ofcom has previously indicated elsewhere that CCA FAC can in certain cases be a good proxy for LRIC plus mark-ups. In terms of Kingston's charges, this matter will be considered further in the context of its financial reporting obligations.

10.13 In order to demonstrate cost orientation of a service or product, it is necessary for the dominant provider to establish cost accounting systems that capture, identify, value and attribute relevant costs to its services and products in accordance with agreed regulatory accounting principles, such as cost causality. A key part of this process is the stage which identifies those parts of the underlying activities or elements that directly support or are consumed by those services or products. These elements are referred to as network components. As these components are frequently used to provide more than one product or service, it is also necessary to determine how much of each component is used for each service or product that should be cost-oriented. The service/product costing methodology applies the utilisation of these components (which are characterised by common usage measures) to the appropriate service product.

10.14 For example, a 2Mbit/s PPC uses a number of distinguishable underlying cost components. These would include DWSS network terminating equipment & serving exchange equipment, SDH multiplexors at third party site, tributary card for SDH network, SDH multiplexors, SDH cross connection/grooming equipment, transmission links over fibre, and product management, policy & planning for PPCs – all of which require analysis in the cost accounting system. Therefore, for each of these components, it would be necessary to produce a financial statement, that sets out costs and volumes which demonstrate that this information has been properly prepared, in addition to the financial statement for the PPC service.

10.15 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all of the Community requirements detailed in Sections 3 and 4 of the Act. In particular, the imposition of a cost accounting obligation would specifically be justifiable and proportionate to promote competition in accordance with Sections 3(4)(b) and 4(3); and to ensure the provision of network access and service interoperability in order to secure efficient and sustainable competition and the maximum benefit for the persons who are customers of communications providers in accordance with Section 4(7) and (8). This is because the imposition of a cost accounting obligation will ensure that obligations designed to curb potentially damaging market power can be effectively monitored and enforced.

10.16 In addition, Ofcom has considered the tests laid out in section 87 of the Communications Act. From the SMP assessment set out in Chapter 3 and Annex B, it appears to Ofcom that there is a relevant risk of adverse effects arising from price distortion. In particular, the market analysis has shown that BT might fix and maintain some or all of its prices at an excessively high level, or impose a price squeeze so as to have adverse consequences for end users. In the light of this analysis, and taking into account the level of investment of the dominant provider, Ofcom is of the view that a cost accounting obligation is appropriate for the purposes of promoting efficiency, promoting sustainable competition, and conferring the greatest possible benefits on the end users of public electronic communications services.

10.17 Section 47 of the Act requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. Ofcom believes that given the importance of cost orientation and charge controls in these markets the imposition of a cost accounting obligation is objectively justifiable. That is, in order to ensure that the obligations of cost orientation and charge control are met and the benefits are realised, it is essential that Ofcom is able to monitor the obligations via a cost accounting obligation. Furthermore, the cost accounting obligation does not discriminate unduly between providers of the same class. That is, although Kingston has also been identified by this market review as a dominant provider, there is not the same demand for wholesale products in its SMP area and the imposition of these obligations in those wholesale markets would therefore, in Ofcom's view, be disproportionate.

10.18 The proportionality and transparency of the obligation is dealt with in more detail in the separate document *The regulatory financial reporting obligations on BT and Kingston Communications in markets where SMP has been demonstrated.* In this document, Ofcom proposes the amount of information required and the processes needed to ensure that the information is fit for purpose, relevant and reliable. Ofcom will ensure that the cost accounting obligation imposed is both proportionate and transparent.

Responses to the draft notification – cost orientation

10.19 In its response to the draft notification, Kingston argued that the imposition of an obligation to maintain appropriate cost accounting systems would be overly onerous, particularly as regards having the associated reports audited. Kingston pointed out that none of its wholesale leased lines products have any customers and that, as such, there is no need for a cost accounting system.

10.20 Ofcom has some sympathy for Kingston's position and considers that the cost to Kingston of providing retail leased lines is likely to be broadly similar to the cost to BT of providing retail leased lines. Ofcom, however, remains of the view that a cost orientation obligation is necessary to ensure that Kingston does not exploit its dominant position to the detriment of consumers. Ofcom notes that Kingston's prices for retail leased lines also appear to be broadly in line with BT's, even allowing for the differences in the pricing structures adopted by the two communications providers. Ofcom considers in the absence of evidence to the contrary that Kingston is likely to be fulfilling its cost orientation obligation where this remains the case.

10.21 As regards wholesale leased lines, Ofcom considers that the cost accounting obligation will only 'bite' where there is take-up of the wholesale products as until such time there will be nothing to report on.

Conclusions – cost orientation

10.22 For the reasons set out above, Ofcom has concluded that it is appropriate to impose a cost orientation obligation on BT for the markets set out in paragraph 10.11 above and on Kingston for the markets set out in paragraph 10.12 above.

Accounting separation

10.23 Under sections 87(7) and 87(8) of the Communications Act, appropriate accounting separation obligations may be imposed on the dominant provider in respect of the provision of network access, the use of the relevant network and the availability of relevant facilities. That is to say, the dominant provider may be required to maintain a separation for accounting purposes between such different matters relating to network access or the availability of relevant facilities.

10.24 In the following markets where Ofcom has concluded that BT should be designated as having SMP:

- TISBO low and high bandwidth;
- AISBO; and
- wholesale trunk segments;

Ofcom is concluding in regulation 2 relating to each market that BT should have an obligation not to unduly discriminate. This is because where a dominant provider is vertically integrated it has an incentive to provide wholesale services on terms and conditions that discriminate in favour of its own retail activities in such a way that may have a material effect on competition.

10.25 Therefore, given the importance of this issue in ensuring effective competition, Ofcom believes that it is necessary that BT should be obliged to have an accounting separation obligation. This obligation will enable Ofcom to monitor whether BT is unduly discriminating against or between other providers, by making visible the wholesale prices and internal transfer prices of its services and products. Therefore, the accounting separation obligation for BT will apply to the markets identified above.

10.26 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting competition. Ofcom has considered all of the Community requirements for regulation detailed in Sections 3 and 4 of the Act. In particular, the imposition of an accounting separation obligation would specifically be justifiable and proportionate to promote competition in accordance with Sections 3(4)(b) and 4(3); to ensure the provision of network access and service interoperability in order to secure efficient and sustainable competition and the maximum benefit for the persons who are customers of communications providers in accordance with Section 4(7) and (8). This is because the imposition of an accounting separation obligation will ensure that obligations designed to curb potentially damaging market power can be effectively monitored and enforced.

10.27 Section 47 of the Act requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. Ofcom believes that given the importance of non-discrimination in these markets the imposition of an accounting separation obligation is objectively justifiable. That is, in order to ensure that the obligation to not unduly discriminate is met and the benefits are realised, it is essential that Ofcom is able to monitor the obligations via an accounting separation obligation. Furthermore, the accounting separation obligation does not discriminate between communications providers of the same class. That is, although Kingston has also been identified by this market review as a dominant provider, there is not the same demand for wholesale products in its SMP area and the imposition of these obligations would therefore, in Ofcom's view, be disproportionate.

10.28 The proportionality and transparency of the obligation is dealt with in more detail in the separate document *The regulatory financial reporting obligations on BT* *and Kingston Communications in markets where SMP has been demonstrated.* In this document, Ofcom proposes the amount of information required and the processes needed to ensure that the information is reliable. Ofcom will ensure that in imposing an accounting separation obligation it is both proportionate and transparent.

10.29 As non-discrimination must be capable of being implemented, where appropriate, on a service or product basis it is not sufficient for monitoring to be carried out only at the market level, as this would not enable Ofcom to identify whether products and services are being provided on a non-discriminatory basis.

10.30 As an example, in order to ensure that BT's wholesale leased lines are being provided on a basis that is not unduly discriminatory, it would be necessary to make visible the wholesale prices and internal transfer prices of symmetric broadband origination to BT's retail business on an equivalent basis. The same is true of other products within SMP markets where there is an obligation not to unduly discriminate. The document on financial reporting goes into these issues of granularity in more detail and provides justification for the level of granularity in each market.

Responses to the draft notification – accounting obligations

10.31 It was suggested by one communications provider that transfer prices should be published in BT's accounts in a readily and comprehensible form and be accompanied by a clear internal product description to ensure non-discrimination.

10.32 One of the proposals included within Ofcom's consultation document *The regulatory financial reporting obligations on BT and Kingston Communications in markets where SMP has been demonstrated*, published 8 April 2004, is the creation of a wholesale catalogue in which BT will be required, amongst other things, to identify and describe individual regulated wholesale services, clearly distinguishing between those provided to its own downstream activities and the equivalent services provided to other communications providers where different. The revenues arising from these (equivalent) services will then be reflected within the relevant regulatory financial statements within the analysis of turnover. The form and content of these regulatory financial statements, together with information available from the wholesale catalogue, should adequately demonstrate BT's compliance with its non-discrimination obligations.

Conclusions – accounting obligations

10.33 For the reasons set out above, Ofcom has concluded that it is appropriate to impose an accounting separation obligation on BT in the wholesale leased lines markets in which it has been found to have SMP.

Annex A
Market definition

A.1 In this Annex, Ofcom describes its approach to market definition in this review and puts it in the wider context of broadband market reviews. Then Ofcom focuses on the symmetric broadband markets and identifies the various relevant markets that cover symmetric broadband products and services both at the retail and at the wholesale level (see the remainder of this Annex, together with Chapter 2, for a detailed discussion of the services these definitions encompass).

Market definition

A.2 There are two dimensions to the definition of a relevant market: the relevant products to be included in the same market and the geographic extent of the market. Ofcom's approach to market definition follows that used by UK competition authorities (see Office of Fair Trading Market Definition Guideline, OFT 403, March 1999, which is in line with those used by European and US competition authorities and can be found at: www.oft.gov.uk/html/compact/technical_guidelines/oft403.html). The market definition analysis looks first at the retail markets and subsequently at the wholesale markets.

Conducting a product market definition

A.3 Market boundaries are determined by identifying constraints on the price-setting behaviour of firms. There are two main competitive constraints to consider: how far it is possible for customers to substitute other services for those in question (demand-side substitution); and how far suppliers could switch, or increase, production to supply the relevant products or services (supply-side substitution) following a price increase.

A.4 The concept of the 'hypothetical monopolist test' is a useful tool to identify close demand-side and supply-side substitutes. A product is considered to constitute a separate market if a hypothetical monopoly supplier could impose a small but significant, non-transitory price increase (SSNIP) above the competitive level without losing sales to such a degree as to make this unprofitable. If such a price rise would be unprofitable, because consumers would switch to other products, or because suppliers of other products would begin to compete with the monopolist, then the market definition should be expanded to include the substitute products.

A.5 The Commission states in paragraph 42 of its Guidelines that in principle, the "hypothetical monopolist test" is relevant only with regard to products or services, the price of which is freely determined and not subject to regulation. Thus, the working assumption will be that current prevailing prices are set at competitive levels. If, however, a service or product is offered at regulated, cost-based price, then such price is presumed, in absence of indications to the contrary, to be set at what would otherwise be a competitive level and should therefore be taken as the starting point for applying the hypothetical monopolist test.

A.6 In order to apply the hypothetical monopolist test, Ofcom has therefore also attempted to identify prices at the competitive level, or reasonable proxies for such prices.

A.7 Throughout this document, markets have been defined first on the demand side. The analysis of demand-side substitution has been undertaken by considering if other retail services could be considered as substitutes by consumers, in the event of the hypothetical monopolist introducing a SSNIP above the competitive level.

A.8 Supply-side substitution possibilities have then been assessed to consider whether they provide any additional constraints on the pricing behaviour of the hypothetical monopolist which have not been captured in the demand-side analysis. In this assessment, supply-side substitution has been considered as a low cost form of entry which could take place within a relatively short period of time (the OFT Guidelines on Market Definition, OFT 403, March 1999, consider the relatively short period to be within a year). That is, for supply-side substitution to be relevant, there would need to be additional competitive constraints arising from entry into the supply of the service in question, from suppliers who are able to enter quickly and at low cost, by virtue of their existing position in the supply of other services.

A.9 There might be suppliers who provide other services but who might also be materially present in the provision of demand-side substitutes to the service for which the hypothetical monopolist has raised its price. However, such suppliers are not relevant to supply-side substitution since they supply services already identified as demand-side substitutes. As such their entry has already been taken into account and so supply-side substitution cannot provide an additional competitive constraint on the hypothetical monopolist. However, the impact of expansion by such suppliers can be taken into account in the assessment of market power.

A.10 A third factor that is sometimes considered is whether common pricing constraints exist across customers, services or areas such that they should be included within the same relevant market even if demand- and supply-side substitution are not present.

A.11 In defining a relevant market, it is usual to begin with a fairly narrow view and then expand that market to include the relevant substitutes. Ofcom has set out in Chapter 2 the order in which it is conducting the definition of the various leased lines markets, the assessment of SMP in those markets, and the assessment of the regulation appropriate to each market in which there is SMP.

A.12 This document defines the relevant markets both at the retail and the wholesale level. Consideration of the relevant retail markets logically precedes the analysis of the wholesale markets, since the demand for wholesale services is derived from the demand for retail services.

A.13 One objective of this analysis is to assess whether a provider has SMP in a wholesale market and to identify appropriate remedies in that market to counter the existence of market power. Given this objective, it is necessary for the definition of retail markets to be undertaken on the basis of an assumption of no regulation of the wholesale services being considered.

A.14 To do otherwise would mean that the wholesale market power assessment would depend on a retail market definition that relied on a wholesale remedy arising from the finding of wholesale market power. This would be a circular and incorrect approach to market definition. Therefore, the demand-side and supply-side substitution possibilities at the retail level will be considered only if they are viable in the absence of regulated wholesale inputs.

A.15 The second objective of this analysis is to identify relevant retail markets, and given any proposed wholesale remedies, assess whether any communications provider has SMP in them, and whether the imposition of any regulation is appropriate.

Conducting a geographic market definition

A.16 The geographic boundaries of the relevant market, like those of the product market, are defined by identifying all relevant competitive constraints. This is done firstly by the application of the hypothetical monopolist test. In its analysis Ofcom has therefore considered whether a price increase by a hypothetical monopolist in a narrowly defined area would encourage communications providers outside the area to begin to offer services to customers in the area, and whether customers could switch to suppliers located outside the area. If supply and/or demand-side substitution are feasible then it is appropriate to expand the geographic market boundary. Secondly, broadening of the geographic market would be appropriate where a common constraint applied to prices in different areas. Thirdly, considerations of feasibility and practicality need to be taken into account.

A.17 This chapter outlines the analysis used by Ofcom to conclude that it is appropriate to consider two broad market groupings, namely: (1) the UK excluding Hull; and, (2) the Hull area.

Products and services considered

Symmetric broadband origination and leased lines

A.18 This review covers leased line services at the retail level and corresponding services and products at the wholesale level.

A.19 A leased line is defined as a permanently connected link between two premises dedicated to the customer’s exclusive use. The corresponding services and products at the wholesale level are the wholesale inputs required to offer this dedicated transparent transmission capacity at the retail level. One feature of this type of dedicated transparent capacity is that it must offer symmetric services. These wholesale inputs must therefore be capable of providing symmetric services. There are two broad categories of leased lines services at the retail level: those offered using traditional interfaces (typically based on SDH or PDH) and those offered using alternative interfaces (typically based on Ethernet).

A.20 The wholesale inputs required to provide retail leased lines can also be used to provide other symmetric services at the retail level, namely symmetric broadband Internet access and other symmetric data services. Since all these retail services offer some type of broadband service at the retail level, Ofcom has decided to refer to the corresponding wholesale inputs as symmetric broadband origination and wholesale trunk segments.

Symmetric broadband origination services

A.21 Symmetric broadband origination services provide symmetric capacity from a customer’s premises to an appropriate point of aggregation, generally referred to as a node, in the network hierarchy. The capacity is symmetric because traffic is carried at the same rate in both directions between the customer and the node. Although they are referred to as origination services, traffic is also terminated over these services. There are a number of existing and potential relevant services. The definition of the specific service sometimes varies, depending ultimately on what retail services it is being used to provide. Symmetric broadband origination services are characterised by the functionality that they offer, independently of the technologies used to deliver it.

A.22 There are two broad sub-categories of symmetric broadband origination, namely traditional interface symmetric broadband origination ("TISBO") services and alternative interface symmetric broadband origination ("AISBO") services. The key differences between these categories and sub-categories are explained in full in Chapter 1, and also later in this Annex. A brief description of the symmetric broadband origination services that are covered by this market review follows.

Traditional interface symmetric broadband origination services

A.23 Symmetric broadband origination services may be contended or uncontended. Uncontended services provide dedicated capacity from one end of the service to the other, while contended services are shared by a number of services or customers, so that the transmit and receive path data rates vary depending on the level of usage.

Uncontended traditional interface symmetric broadband origination services

A.24 These services include, but are not limited to, the following:

- terminating segments forming all or part of partial private circuits (PPCs) when supplied by BT to another communications provider, and terminating segments (equivalent to those that BT would provide as part of a PPC) supplied by communications providers to themselves or to other communications providers;
- local loop unbundling (LLU) backhaul services; and
- radio base station (RBS) backhaul circuits.

Wholesale terminating segment services

A.25 A communications provider can purchase a complete end-to-end leased line from another communications provider where it does not have its own network available for providing service to a customer. Alternatively, if it is able to provide the leased line partly using its own network, it has the option of purchasing the remaining parts or segments of leased lines from another communications provider. Figure 1.1 in Chapter 1 illustrates how this works in practice. A communications provider may also be in a position to supply the entire leased line on its network, i.e. to self-supply the terminating segments.

A.26 BT supplies PPCs to other communications providers where they do not have sufficient network available for providing service to a customer. The length of the PPC supplied will depend on the amount of own network used by the communications provider. PPCs are provided at a range of bandwidths. In relation to the provision of wholesale symmetric broadband origination it is therefore necessary to consider whether separate markets exist at different bandwidths. This is discussed later in this Annex.

LLU backhaul services

A.27 LLU backhaul services are another type of symmetric broadband origination services. Such services are the link that is used to convey digital data between a communications provider's LLU co-location facility and one of its core network nodes. Backhaul is required to connect the end users' local loop traffic to the communications providers' core network for subsequent connection to the relevant service provider. This is illustrated in Figure 1.2 in Chapter 1.

RBS backhaul circuits

A.28 A further form of symmetric broadband origination services are RBS backhaul circuits. These provide transparent transmission capacity between a mobile communications provider's radio base station premises and that communications provider's mobile switching centre. Figure 1.3 in Chapter 1 illustrates how it works.

Contended traditional interface symmetric broadband origination services

A.29 Ofcom is aware that during the period covered by this market review, other forms of symmetric broadband origination which are contended are likely to be introduced. At the moment it is possible to provide contended services using SDSL technology, and BT has made available both wholesale and retail SDSL products.

Alternative interface symmetric broadband origination services

A.30 As well as the traditional interface symmetric broadband origination ("TISBO") services discussed above, Ofcom has identified a separate range of symmetric broadband origination services that have particular distinguishing characteristics. Ofcom is referring to these as alternative interface symmetric broadband origination ("AISBO") services.

A.31 AISBO services can be identified by the following distinguishing features:
- they have a different (usually Ethernet IEEE 802.3) interface;
- they are well suited to a particular set of end user applications (e.g. storage area networks and extending local area networks);
- they can be used to carry many types of data; and
- they can generally only be used over short distances without re-amplification – currently, up to a range of approximately 25-35km (radial distance) from the source signal (although this is not the case where such services are provided over WDM technology – see below).

A.32 It is worth clarifying some of the ways in which Ofcom envisages wholesale AISBO services might be used.

A.33 Firstly, at the simplest level, the services might be used by a communications provider to provide end to end leased line services to retail customers whose sites are located close together (i.e. typically, no more than 25-35km apart). Such services might consist of one link between two sites or a network of links between a collection of sites. AISBO services are currently used to provide an alternative form of LLU backhaul.

A.34 Secondly, it might be possible for a communications provider to use these services to provide longer links by combining the wholesale AISBO service with its own network. The communications provider might choose to join the service to an

Ethernet-based or an SDH-based network, and a variety of connection methods are possible.

WDM services

A.35 Wave Division Multiplexed (WDM) services are services that can be used to provide transmission of multiple wavelengths of light over short or long distances using wave division multiplexers.

A.36 Ofcom considers WDM services to constitute an upstream input into the TISBO and AISBO markets identified above. This Annex sets out why this is the case and gives economic clarification of where WDM sits in relation to the other markets.

Trunk segments

A.37 Trunk segments are wholesale services that provide trunk conveyance across the core transmission networks. Trunk segments are used to provide a wide range of downstream retail services. At present these retail services are the same as those provided by means of symmetric broadband origination services. PPCs, LLU backhaul services and RBS backhaul circuits may in particular circumstances involve some trunk conveyance services as part of the overall service. At the moment there are no stand alone trunk conveyance services sold to third parties.

Markets identified

A.38 In summary, Ofcom has identified the following product markets in the UK excluding Kingston upon Hull:

- retail low bandwidth traditional interface leased lines (up to and including 8Mbit/s) – this includes analogue circuits of relevant bandwidths, and incorporates the minimum set of retail leased lines identified by the Commission (64kbit/s and 2Mbit/s);
- wholesale low bandwidth traditional interface symmetric broadband origination (“TISBO”) (up to and including 8Mbit/s);
- wholesale high bandwidth traditional interface symmetric broadband origination (“TISBO”) (above 8Mbit/s up to and including 155Mbit/s);
- wholesale very high bandwidth traditional interface symmetric broadband origination (“TISBO”) (above 155Mbit/s);
- wholesale alternative interface symmetric broadband origination (“AISBO”); and
- wholesale trunk segments (note that this market extends to the whole of the UK).

A.39 Although Ofcom has, to some extent, analysed retail traditional interface leased lines at bandwidths above 8Mbit/s and retail alternative interface leased lines during its analysis, Ofcom does not consider it necessary to formally identify (for the purposes of section 79 of the Act) retail markets covering such products as it considers that regulation at the wholesale level is sufficient to meet regulatory objectives in these areas.

A.40 In addition, Ofcom has identified the following product markets in the Kingston upon Hull area:

- retail low bandwidth traditional interface leased lines (up to and including 8Mbit/s) – this incorporates the minimum set of retail leased lines identified by the Commission (64kbit/s and 2Mbit/s);

- wholesale low bandwidth traditional interface symmetric broadband origination ("TISBO") (up to and including 8Mbit/s);
- wholesale high bandwidth traditional interface symmetric broadband origination ("TISBO") (above 8Mbit/s up to and including 155Mbit/s); and
- wholesale alternative interface symmetric broadband origination ("AISBO").

A.41 Although Ofcom has considered retail traditional interface leased lines at bandwidths above 8Mbit/s and retail alternative interface leased lines during its analysis, Ofcom does not consider it necessary to formally identify (for the purposes of section 79 of the Act) retail markets covering such products as it considers that regulation at the wholesale level is sufficient to meet regulatory objectives in these areas. There are no circuits of bandwidths above 155Mbit/s currently sold in the Hull area and Ofcom does not, therefore, currently consider it necessary to identify very high bandwidth markets in the Hull area.

Issues discussed in identifying markets

A.42 Ofcom sets out below how it has arrived at the above market definitions. Ofcom discusses the following issues in arriving at these definitions:

1. retail symmetric vs asymmetric services
2. retail leased lines vs other data services
3. retail traditional interface leased lines vs retail alternative interface leased lines
4. retail leased lines bandwidth distinctions
5. retail leased lines analogue vs digital circuits
6. geographic markets
7. retail leased lines – Hull area
8. wholesale trunk vs symmetric broadband origination
9. wholesale trunk bandwidth distinctions
10. wholesale trunk geographic considerations
11. definition of symmetric broadband origination product markets
12. TISBO bandwidth distinctions
13. AISBO bandwidth distinctions
14. Wave Division Multiplexed services
15. SBO geographic considerations.

Retail markets

A.43 The European Commission (EC) has identified the following retail market:

- minimum set of retail leased lines of 64kbit/s and 2Mbit/s.

Ofcom has automatically included circuits of bandwidths between the two identified by the European Commission in the retail leased lines market as not to do so would be illogical. The majority of the circuits provided between 64kbit/s and 2Mbit/s are based on multiples of 64kbit/s and are commonly referred to as n*64kbit circuits. If circuits of 64kbit/s and 2Mbit/s have been identified as forming a retail market, all bandwidths between these values must also fall within the same market. For the purposes of market definition, Ofcom has therefore defined the relevant market as retail leased lines up to 8Mbit/s.

A.44 The relevant retail product and geographic markets for the UK are considered in turn by Ofcom below. As described in Chapter 2, market definition in the absence of regulation is considered first. The market boundaries are then re-examined in the presence of proposed wholesale regulation to see if the regulation has any impact on the nature of the retail markets.

Retail product markets in the absence of retail or wholesale regulation

Issue 1: Symmetric vs asymmetric – rationale for separate markets for retail leased lines and asymmetric broadband products and services

A. 45 To assess if asymmetric broadband products and services are in the same market as retail leased lines, Ofcom must examine to what extent asymmetric broadband services put a competitive constraint on the pricing of retail leased lines.

A.46 On the demand side, Ofcom is of the view that retail leased line customers do not consider the currently available asymmetric broadband services to be close substitutes for leased lines because these asymmetric services do not offer symmetric dedicated capacity. Even if uncontended asymmetric broadband services were to become available within the lifetime of this market review, potential substitutability would be restricted because an asymmetric service can only be used to offer a leased line at a speed up to the lower of the speeds in each direction (usually upstream). The symmetrical capability is a key feature of a leased line.

A.47 These two considerations combined make it unlikely that a sufficient number of customers would switch to asymmetric broadband services if there was a small but significant, non-transitory increase in the price of retail leased lines. Therefore Ofcom considers that from a demand-side point of view, asymmetric broadband services do not put a competitive constraint on the pricing of retail leased lines.

A.48 On the supply side, existing suppliers of asymmetric broadband services could constrain the suppliers of symmetric broadband services if they would start supplying retail leased lines quickly and at low cost in response to a price increase. To carry out the supply-side substitution analysis, existing suppliers of asymmetric broadband services are put in two categories: those using LLU and those who do not use LLU.

A.49 Suppliers of asymmetric broadband services using LLU may be able to supply-side substitute into low-bandwidth retail leased lines by using SDSL in combination with LLU. However, currently the number of LLU consumers is small and the LLU communications providers already supply retail leased lines. Therefore, Ofcom considers that supply side substitution by suppliers of asymmetric services relying on LLU does not create any, or a sufficiently material, competitive constraint to justify broadening the market definition.

A.50 Suppliers of asymmetric broadband services that do not use LLU might be ready to supply retail leased lines if they could have access to the wholesale symmetric inputs. However in absence of wholesale regulation, the requisite inputs would not be available and this type of substitution would not be possible.

A.51 Ofcom has thus reached the conclusion that supply-side substitution does not arise in the absence of wholesale remedies.

A.52 The above demand-side and supply-side substitution analysis leads Ofcom to consider that asymmetric broadband services do not put a competitive constraint on the pricing of retail leased lines in the absence of wholesale regulation. Therefore retail leased lines and asymmetric broadband services are in separate markets.

Forward look

A.53 Ofcom has considered the likelihood of competitive or technical developments that might affect the markets identified during the period covered by this review. Ofcom's view is that there are no developments that would affect these market definitions within a 2-3 year period. However, Ofcom will keep market conditions under review.

Issue 2: Retail leased lines and other data services

A.54 Ofcom considers that retail leased lines constitute a separate market from other data services. The rationale for this split is outlined below.

A.55 As above, Ofcom considers that asymmetric and symmetric services are in separate markets. However, Ofcom also considers that leased lines are in a separate retail market to other (symmetric) data products, such as broadband Internet access and VPNs. The rationale for sub-dividing symmetric services into separate markets is explained below.

Demand side substitution

A.56 A leased line offers dedicated symmetric transmission capacity between two points. It therefore provides a guaranteed bandwidth (either contended or uncontended) that is available 24/7. A leased line is highly flexible in that the user can determine and manage what services are carried over it. It also offers a secure communication channel. Further, it is normal for leased lines to be supplied with high levels of customer care, such as quick response times 24 hours a day, and these are often supported with service level guarantees (SLGs). Leased lines therefore represent one of the most versatile and highest quality services available to retail consumers.

A.57 In comparison, other managed data products, such as VPNs and Internet access, are generally contended/shared at some point, and thus do not provide guaranteed bandwidth. Further, the end user has less flexibility, as there is more third party management. Also, these products are not usually provided with a high level of customer care as standard and although it is possible for consumers to purchase enhanced service levels on some products, it normally falls short of leased line service levels.

A.58 Due to the versatility of leased lines they can, in some instances, be used as inputs into other data services, however the reverse is not the case. The use of retail leased lines in the provision of other data services is discussed further under supply side substitution below.

A.59 Given the unique characteristics of a leased line it is considered that consumers who require a leased line are unlikely to switch to an alternative data service if a hypothetical monopolist were to increase the price of leased lines 5 to 10 per cent above the competitive level. Ofcom therefore believes that other symmetric data products are not demand-side substitutes for leased lines.

Supply side substitution

A.60 In order to assess what would happen in the absence of wholesale regulation, it is important to understand how the existing suppliers of other symmetric data products provision for these.

A.61 A number of the existing suppliers of other symmetric data products (such as managed data products) supply these products by buying retail leased lines. This means that, if a hypothetical monopolist were to increase the retail leased lines prices by 5 to 10 per cent above its competitive price, these suppliers would have to buy their input at prices 5 to 10 per cent higher. They would therefore not be in a position to impose a competitive constraint on the hypothetical monopolist.

A.62 Although competitive cable access networks already exist in the UK they are not considered suitable for providing leased lines. This is because cable networks in the UK are inherently asymmetric and it would be inefficient to use them to provide symmetric services, such as leased lines, and although it is possible to upgrade them, doing so would take considerable time and cost. In addition, leased lines tend to be purchased predominantly by businesses whereas cable networks in the UK have been deployed mainly in residential areas.

A.63 Therefore in the absence of wholesale regulation existing suppliers of other symmetric data products/services would not be able to constrain the activities of a hypothetical leased line monopolist to the competitive level through supply side substitution.

Conclusion

A.64 The above supply-side and demand-side analysis leads Ofcom to conclude that retail leased line services and other symmetric data services are in separate markets.

Issue 3: Retail traditional interface leased lines vs retail alternative interface leased lines

A.65 Ofcom considers that SDH-based (traditional interface) retail leased line products (and their wholesale equivalents, including symmetric broadband origination) such as BT's *KiloStream* and *MegaStream* ranges are in separate markets to Ethernet-based (alternative interface) retail leased line products (and their wholesale equivalents) such as BT's *LES* product range. As such, the availability of alternative interface leased lines would not constrain the pricing behaviour of a hypothetical monopolist provider of traditional interface leased lines, and *vice versa*, with the result that alternative interface and traditional interface leased lines are in separate markets.

Demand side substitutability

A.66 As discussed in Chapter 1, the term 'alternative interface' refers to a broad category of products that provide a point-to-point fibre connection (including those products referred to as local area network extension services (LES)) supplied predominantly by means of Ethernet[2] over fibre. As Ethernet is currently the most widely used form of alternative interface, these services have been referred to as

[2] Other interfaces are also used in some instances. While Ethernet is currently the most widespread, others (eg Fibre Channel) may increase in importance over time.

Ethernet-based services for large parts of this document, though it should be noted that Ethernet is not the only form of alternative interface (as discussed in Chapter 1 above). These circuits have some similarities with SDH-based leased lines, the key characteristics in question are that they offer dedicated symmetric transmission capacity between two points, providing guaranteed bandwidth that is available 24/7, and are generally uncontended (i.e. they are not shared with other users). However, Ofcom has identified a number of limitations to the degree of substitutability between Ethernet and SDH circuits. These are discussed below.

End user applications

A.67 Ethernet and SDH are different ways of packaging data. The relative merits of the two vary according to the required end user application, for example:

- Ethernet-based services cannot readily be used to convey certain types of traffic, e.g. conventional voice (although it can support Voice Over IP), ISDN, Centrex or national virtual private networks (VPN), or for transferring data based on protocols other than Ethernet; and
- SDH-based services are not generally suitable for use in certain data applications such as storage area networks (SANs).

A.68 On a forward-looking basis, it has been suggested to Ofcom that it may be important to note that customers are increasingly moving to IP virtual private networks (IPVPN) as a substitute for ATM and Frame (over SDH). It could be argued that on this basis the importance of the first difference (Ethernet services not supporting conventional voice) will diminish over time. However, Ofcom's view is that the demand for IPVPN-type solutions is currently not sufficiently widespread to alter the market definition, and that this position is unlikely to change to a sufficient extent during the period of this review to warrant the finding of an alternative definition.

Distance constraints

A.69 The provision of Ethernet-based circuits is constrained to relatively short distances in certain cases. For example, the retail LES circuits sold by BT are in many cases restricted to a maximum radial distance of 25km (or 35km in certain cases).

A.70 Ofcom's view is that this factor is unlikely to be as significant a consideration in assessing substitutability as the functionality differences identified above. For example, while an Ethernet-based circuit delivered by means of a direct fibre connection is mainly limited in distance to a maximum of 25km, longer end-to-end circuits can be provided using Ethernet-based tails plus a core (SDH/other) network. Such circuits are central to the plans of the communications providers who have requested that BT provide a wholesale network access version of its LES products, and they fall within the retail alternative interface market since in all respects other than distance constraints they resemble alternative interface circuits delivered direct over fibre. Additionally, Ethernet-based circuits can be supplied over WDM technology (see below), in which case distance constraints do not apply.

A.71 Notwithstanding the above, given the distance restrictions that currently apply to a significant proportion of the Ethernet-based circuits that are currently in supply and that will be supplied for the foreseeable future, this issue will restrict substitutability to some extent.

Availability

A.72 Standard SDH circuits offer 99.95% availability, whilst Genus SDH circuits offer 99.995% availability. Standard alternative interface circuits offer a slightly lower level of availability than standard SDH circuits, 99.9%, although dual provision alternative interface circuits offer the same availability as Genus SDH circuits, 99.995%. Given the closeness of these figures, Ofcom's view is that considerations of service availability are unlikely to be a key factor in the analysis.

Criteria for demand side substitutability

A.73 The differences in functionality (traffic type and range restrictions) outlined above represent a significant barrier to demand side substitution between Ethernet and SDH-based products, though as technology develops this is likely to lessen. In analysing this issue it is useful to consider three groups of consumers, namely:

(a) customers whose preferences are such that either an Ethernet or SDH-based solution will meet their needs (e.g. they want a solution to carry data traffic that can be routed over SDH or Ethernet);
(b) customers whose preferences are such that only an SDH-based solution will meet their needs – an Ethernet solution will not (e.g. they want to transmit voice (and possibly also data) traffic; and
(c) customers whose preferences are such that only an Ethernet solution will meet their needs – an SDH-based solution will not (e.g. needing a high level of accuracy regarding data transfer times).

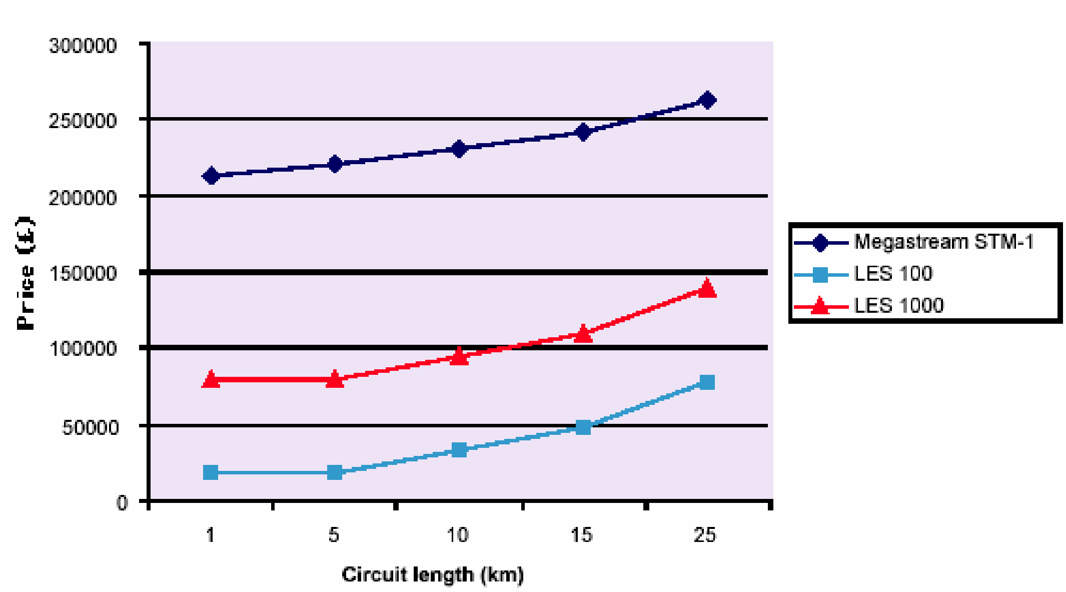
A.74 Customers in groups (b) and (c) would never switch between Ethernet and SDH-based products following a SSNIP and would therefore never view the two as close substitutes.

A.75 Some customers in group (a) might switch, depending on price and other considerations. However, even a very detailed survey exercise would not make it possible to assess the relative size of this group on a forward looking basis. Ofcom has therefore informed its analysis by means of a price comparison, as outlined below.

Price comparisons and conclusions on demand side substitutability

A.76 The extent to which demand-side substitution by group (a) would be likely to happen can be informed by a comparison of the retail prices of BT's SDH-based and LES circuits. Ofcom has conducted such a comparison, based on BT's published prices, which concludes that SDH-based circuits are considerably more expensive than LES circuits (see Figure A.1 below). In the light of these differences in price, it is unlikely that the price of traditional interface circuits would constrain the price of alternative interface circuits, since the preferences of any consumer whose technical requirements were satisfied by LES circuits would not be altered by a price increase of 5-10% to these circuits, since these would remain considerably cheaper than the SDH-based alternative.

Figure A.1 – BT's SDH and LES based leased circuit prices compared



Source: Ovum
Assumes suitable fibre already exists at both ends
No CPE included

A.77 It does, however, seem possible that the price of alternative interface circuits could constrain that of SDH-based circuits. If the prices of alternative interface circuits were significantly below their SDH-based equivalents, an increase in the price of SDH-based circuits might be expected to lead to customers switching away from SDH-based circuits. In view of the limitations of alternative interface circuits described above, it is difficult to assess the proportion of consumers who would be likely to switch from SDH-based to alternative interface circuits. In view of the similarities in functionality outlined above, it could be argued that at least a degree of substitution would occur.

A.78 An important caveat to this comparison is that Ofcom has no information to suggest that any of the prices in Figure A.1 above are cost orientated. However, the magnitude of the price differences shown above is such that it seems very unlikely that the conclusions of this comparison would be changed materially by the use of cost oriented prices. In other words, while it is not certain that a 1km Megastream STM-1 circuit costs something in the region of three times as much to deliver as a LES 1000 circuit of equal length, it seems clear that delivery of the STM-1 circuit is by some distance the more costly of the two.

A.79 However, Ofcom's view is that such substitution is unlikely to be widespread. This is because it is highly unlikely that a significant number of customers in group (a) would currently be using (or considering using) SDH-based solutions if their needs were met equally well by an Ethernet-based solution, given the large price differential. While it is possible that there are consumers who have opted for SDH-based circuits because they were not aware of the availability and prices of alternative interface circuits, Ofcom does not propose to rely on such an argument as LES circuits have been available for some time and it has received comments from various sources indicating that leased lines consumers are relatively well informed about the choices available. Ofcom is therefore of the view that SDH-based and Ethernet-based circuits are not demand side substitutes. On a forward-looking basis the availability of Ethernet-based circuits may increase, e.g. as distance restrictions become less important. However, Ofcom's view is that such a consideration is unlikely to be relevant within the timeframe of this review given that distance restrictions currently apply to the vast majority of Ethernet-based circuits that have been sold.

Supply side substitutability

A.80 Ofcom has considered whether supply side substitutability at the retail level would lead to a widening of the existing market definition to include both traditional and alternative interface circuits. Such supply side substitutability would exist if, in the absence of wholesale regulation, the suppliers of alternative interface circuits were able to provide SDH-based circuits at low cost and within a relatively short period of time. However, since the majority, if not all, of the suppliers of alternative interface circuits already supply SDH-based circuits (and vice versa), alternative interface circuit suppliers would not place any additional constraints on a hypothetical monopolist supplier of SDH-based circuits (and vice versa).

A.81 Ofcom's view is therefore that supply side substitution would not lead to a widening of the traditional interface (SDH) market definition to include alternative interface (Ethernet-based) circuits.

Conclusion on retail traditional interface leased lines vs retail alternative interface leased lines

A.82 As outlined above, Ofcom's view is that SDH-based (traditional interface) and Ethernet-based (alternative interface) circuits form distinct economic markets at the retail level. Nevertheless, as noted above, Ofcom does not consider it appropriate to identify retail markets for the purpose of section 79 of the Act, except in respect of traditional interface low bandwidth circuits.

Issue 4: Retail leased lines – bandwidth distinctions

A.83 Ofcom has considered the extent to which retail leased lines at different bandwidths are substitutes from an economic perspective. Given Ofcom's conclusion in paragraph A.79 above that there are separate economic markets for traditional and alternative interface retail circuits, it is necessary to assess the bandwidth distinctions for both markets.

Traditional interface retail leased lines

A.84 Traditional interface retail leased lines are currently available at a number of bandwidths, primarily:

- 64kbit/s and multiples thereof;
- 1Mbit/s;
- 2Mbit/s;
- 8Mbit/s;
- 34Mbit/s;
- 140 and 155Mbit/s; and
- 'very high' bandwidth, i.e. 622Mbit/s and higher

Demand-side substitution

A.85 Retail leased lines are sold to customers in order to provide broadband access capacity. Large amounts of bandwidth, i.e. higher bandwidth circuits or multiples of lower bandwidth circuits, are needed to serve high capacity requirements, for example linking headquarters or other major sites of large business users. On the demand side, Ofcom has investigated the extent to which traditional interface retail leased lines of different bandwidths (including multiples of lower bandwidth circuits) are substitutes for one another, i.e. whether there is a chain of substitution that links higher bandwidth leased lines to lower bandwidth leased lines and vice versa.

A.86 The question is whether a SSNIP by a hypothetical monopolist at a particular bandwidth would induce sufficient customers to switch to lower or higher bandwidth traditional interface circuits, so as to make that price increase unprofitable. Ofcom believes that there are breaks in the chain of substitution as follows:

- between 8Mbit/s and 34Mbit/s; and
- between 155Mbit/s and 622Mbit/s.

A.87 A description of Ofcom's reasoning is outlined below.

Functionality

A.88 In order to be demand-side substitutes, products must be substitutable from a functional perspective. Ofcom's view is that, in terms of pure functionality, multiples of low bandwidth circuits are in the majority of cases substitutes for circuits of higher bandwidth and vice versa.

A.89 One possible exception might be a break in a chain of substitution between 2Mbit/s and 34Mbit/s. This may be the case due to factors such as the fact that lower bandwidth traditional interface circuits can be provided over PDH technology, whereas higher (34Mbit/s and above) bandwidth traditional interface circuits are provided using SDH (or more recent) technology. Similarly, features such as the availability of end-to-end protection as a standard feature on higher bandwidth circuits but not on lower bandwidth circuits, may provide a barrier to demand-side substitution.

A.90 Ofcom is not entirely convinced by such arguments, however, since, for example, 2Mbit/s traditional interface circuits are now offered over SDH technology. Ofcom is therefore minded not to rely on these arguments as justification for the breakpoints in the chain of substitution, but is instead persuaded by other considerations, such as those discussed below.

Cost oriented prices

A.91 Substitutability in terms of functionality is necessary, but not *sufficient,* to demonstrate that two products are sufficiently close demand-side substitutes to be defined as being in the same market. That would require that a hypothetical monopolist was constrained not to set prices significantly above the competitive level. So, for example, the use of multiples of lower bandwidth traditional interface circuits must be economic for retail customers.

A.92 Ofcom has carried out an investigation of the likelihood of substitution of traditional interface leased lines of lower capacity by traditional interface leased lines of higher capacity and *vice versa*. For this exercise, cost oriented wholesale (service based PPC – see below for description) charges (with two local ends) have been assumed to be a reasonable proxy for retail prices at their competitive level. The reason is that competition at the retail level is expected over time to drive retail leased line prices in close relationship to their wholesale input prices.

A.93 Ofcom notes that this information source provides a lower bound proxy for competitive prices. It is a lower bound proxy because it possibly does not include the entire trunk-related costs and because it does not include other elements of retail pricing such as profit margin and retail costs. However, in this context Ofcom does not consider that this results in distortion of its analysis or conclusions, because the question considered here is the relativity of prices at different bandwidths and not their absolute level.

A.94 Ofcom has used this analysis to inform a number of issues relating to demand-side substitution.

Are Kilostream circuits at different bandwidths demand-side substitutes?

A.95 Table A.1 below shows the *service-based* PPC charges for all of BT's Kilostream products (taken from Oftel's consultation on PPCs Phase 2, www.ofcom.org.uk/static/archive/oftel/publications/broadband/leased_lines/ppc0902/ppc_ch1_2.htm). Under service-based charges, the recovery of equipment costs incurred up front is recovered over a period of time via annual rental charges. The PPC charges that were set by Oftel in its PPCs Phase 2 Direction were calculated on a *capacity* basis, i.e. certain equipment costs were recovered via up-front charges. Oftel's opinion was that this cost recovery mechanism best reflected the principle of cost causation. However, service-based charges are useful for the exercise of comparing costs at different bandwidths, since the pricing structure is simpler it is consequently more straightforward to derive the costs of traditional interface circuits of different bandwidths.

Table A.1: Service-based cost oriented charges for Kilostream PPCs

	Connection fee per local end	Local end rental charge	Main link rental per km
64 kbps	£205	£427	£51
128 kbps	£341	£1,018	£8
192 kbps	£341	£1,073	£12
256 kbps	£454	£1,127	£16
320 kbps	£454	£1,182	£20
384 kbps	£454	£1,236	£25
448 kbps	£454	£1,291	£29
512 kbps	£454	£1,345	£33
576 kbps	£454	£1,400	£37
640 kbps	£454	£1,454	£41
704 kbps	£454	£1,509	£45
768 kbps	£454	£1,563	£49
832 kbps	£454	£1,618	£53
896 kbps	£454	£1,672	£57
960 kbps	£454	£1,727	£61

Source: *Consultation on a draft Direction to resolve a dispute concerning the provision of partial private circuits, 10 September 2002.*

A.96 Ofcom has considered the lowest cost circuit choice by end users with given bandwidth requirements, and has considered the extent to which these preferences are altered following the application of the SSNIP test. This analysis has informed its decision as to whether low bandwidth circuits at different bandwidths should be considered to be part of the same economic market. Ofcom's analysis focused on marginal customers, specifically those making the decision whether to buy new circuits at a given bandwidth, rather than those already renting circuits deciding whether to switch. This is because, in the latter case, relatively high up-front connection fees make it unlikely that a SSNIP would induce widespread switching among customers. With this in mind, Ofcom's analysis assumes the uniform application of a SSNIP of 10% to both connection and rental charges. Ofcom's analysis has focused on comparing each individual pair of circuits within the list above (e.g. 640kbps, 704kbit/s and 896kbit/s; or 960kbit/s), over a range of bandwidth demands over which consumers are likely to purchase the circuits in question in preference to others at lower or higher bandwidth.

A.97 Ofcom has, using assumptions concerning average contract duration and circuit length, considered the extent to which the traditional interface circuit types in Table A.1 are likely to be demand-side substitutes. Such analysis, in the absence of information regarding, for example, the distribution of customers according to demand for bandwidth, cannot be completely definitive but remains a useful tool. Ofcom's analysis was carried out using the following two main steps for each pair of circuits:

- determine the most economic combination of circuits to satisfy a given bandwidth demand; and
- assess the extent to which this combination changes following a SSNIP to both the higher and lower bandwidth traditional interface circuit in each pair.

A.98 The base assumptions used by Ofcom in the comparison described above are (based on figures previously supplied by communications providers):

- an average circuit length of 40km; and
- converting connection fees into an annual charge by amortising them over three years.

A.99 The results of this analysis as described below are robust under a range of different assumptions. A possible exception relates to circuit lengths that exceed 50km, but Ofcom does not consider it likely that such circuits are sufficiently numerous or important to alter its conclusions. This is supported by the evidence on average PPC length that has been supplied to Ofcom.

A.100 The results of Ofcom's analysis (i.e. an examination of whether switching between higher and lower bandwidths is optimal, as outlined in paragraph A.85 above) in this case suggest that the demand-side characteristics of Kilostream products are such that they are best characterised as forming a single market due to the existence of a chain of substitution. This chain of substitution exists because of the wide range of bandwidths available at similar prices, which means that a price increase by a hypothetical monopolist at a particular bandwidth can be expected to induce customers to choose instead traditional interface circuits at other bandwidths (e.g. the next highest bandwidth).

Are 2Mbit/s traditional interface circuits and Kilostream circuits demand-side substitutes?

A.101 Table A.2 compares the cost oriented charges for BT's highest bandwidth Kilostream circuits with those for 2Mbit/s circuits (Ofcom's analysis has not considered 1Mbit/s circuits in detail due to these circuits being relatively new, meaning that reliable data concerning them has not yet been made available to Ofcom).

Table A.2: Service based cost oriented charges - Kilostream and 2Mbit/s PPCs compared

Circuit	Connection charge per local end	Connection charge per additional local end	Rental charge per local end	Main link rental per km	Main link fixed charge
960 kbps	£454	£0	£1,727	£61	£0
2048 kbps	£2,070	£631	£658	£139	£1,356

Source: *Consultation on a draft Direction to resolve a dispute concerning the provision of partial private circuits*, 10 September 2002.

A.102 New 8Mbit/s traditional interface circuits are no longer available (see below). It therefore follows that a large number of customers with bandwidth requirements in excess of 896kbit/s but below the level required to make the use of 34Mbit/s circuits economic will be to some extent reliant on (possibly multiples of) circuits at bandwidths around the 1-2Mbit/s level.

A.103 Ofcom has used the SSNIP test (as described above) to assess the extent to which 960kbit/s and 2Mbit/s traditional interface circuits may be demand-side substitutes.

A.104 The results of Ofcom's analysis suggest that there is likely to be a significant proportion of customers for whom higher bandwidth Kilostream circuits and 2Mbit/s circuits are substitutes, and that the two should therefore be considered to be part of the same market.

A.105 This conclusion is to some extent reliant on the consideration of bandwidth demands in excess of 2Mbit/s. That is, Ofcom's analysis suggests that many consumers with bandwidth demands between 2Mbit/s and 3Mbit/s would be induced to switch. This is because the price differentials between a single 2Mbit/s traditional interface circuit and a single 960kbit/s circuit, and similarly the price differential between two 960kbit/s traditional interface circuits and a single 2Mbit/s traditional interface circuit, are sufficiently large that a SSNIP to either product would be unlikely to substantially influence consumers' choices between the two types of circuit. This assumption seems reasonable since, as described below, a significant proportion of customers with capacity requirements in excess of 2Mbit/s would be unlikely to be in a position to use a 34Mbit/s circuit.

A.106 The assumptions concerning circuit length and amortisation period for connection fees used in this analysis are the same as those used in the comparison of the prices of Kilostream circuits at different bandwidths. Its results are similarly robust under a range of different assumptions regarding circuit length and amortisation period.

Are 2Mbit/s and 34Mbit/s traditional interface circuits demand-side substitutes?

A.107 2Mbit/s and 34Mbit/s traditional interface circuits differ substantially in terms of their cost and functionality. Table A.3 compares the cost oriented charges for 2Mbit/s circuits with those for 34Mbit/s circuits.

Table A.3: Service-based cost oriented charges - 2Mbit/s and 34Mbit/s PPCs compared

Circuit	Connection charge per local end	Connection charge per additional local end	Rental charge per local end	Main link rental per km	Main link fixed charge
2Mbit/s	£2,070	£631	£658	£139	£1,356
34Mbit/s	£3,514	£1,220	£8,521	£323	£12,058

Source: *Consultation on a draft Direction to resolve a dispute concerning the provision of partial private circuits*, 10 September 2002.

A.108 Ofcom's analysis suggests that, due primarily to the significant gap in bandwidth and price between 2Mbit/s and 34Mbit/s traditional interface circuits, the group of customers who would switch following a SSNIP is unlikely to be sufficiently large to make that price increase unprofitable. Ofcom's conclusion is that the two are therefore not sufficiently close demand-side substitutes to be defined in the same market.

Should 8Mbit/s traditional interface circuits be included in a low bandwidth or high bandwidth traditional interface market?

A.109 New 8Mbit/s traditional interface circuits are no longer offered by BT, or by other communications providers at either the retail or wholesale level. This is because:

- 8Mbit/s circuits cannot be supported by SDH networks and therefore have to be carried over PDH networks, which have, to some extent, been superseded; and
- manufacturers no longer supply 8Mbit/s PDH equipment required for the access network.

A.110 Despite the obsolescence described above, existing suppliers continue to earn revenue from a number of legacy 8Mbit/s traditional interface retail circuits. These circuits, for the purpose of market definition, are clearly not able to constrain the price of other circuits, since it is not possible for customers to purchase new 8Mbit/s circuits. The relevant question is therefore to consider which other traditional interface circuits constrain the prices of 8Mbit/s circuits. Ofcom was unable to fully replicate the type of analysis outlined above since cost based PPC charges have not been derived for 8Mbit/s circuits (since PPCs at this bandwidth are not available).

A.111 The analysis Ofcom was able to conduct suggested that, under certain circumstances, notably in London where retail 8Mbit/s traditional interface circuits are relatively inexpensive, 2Mbit/s traditional interface circuits are likely to constrain the price of 8Mbit/s circuits, whereas this is less likely in the case of 34Mbit/s. This is explained below.

A.112 BT's standard charges for retail 8Mbit/s traditional interface circuits are very expensive relative to PPC charges, i.e. the rental charge is more expensive than even that (including an amortised connection charge) for a single 34Mbit/s symmetric broadband origination service, or four 2Mbit/s symmetric broadband origination services. In this context, all customers with an 8Mbit/s circuit would, if offered the opportunity, switch to a symmetric broadband origination service, even without the 8Mbit/s charge being increased. This could be interpreted as suggesting that 8Mbit/s circuits might form a distinct economic market.

A.113 However, such a situation is not intuitively appealing. Given that the above comparison between retail prices for end-to-end traditional interface leased lines and service-based wholesale charges for traditional interface symmetric broadband origination is a simplified assumption, Ofcom has considered other approaches. With this in mind, Ofcom has analysed BT's London (020 7) retail charges for 8Mbit/s circuits (which are low relative to BT's national charges). Doing so avoids the possibility of reaching the non-meaningful conclusion that symmetric broadband origination 'dominates' 8Mbit/s retail circuits without a SSNIP.

A.114 Ofcom's analysis suggested that a relatively large group of customers would be likely to, following a SSNIP, switch from the use of a single 8Mbit/s traditional interface retail circuit for multiples of 2Mbit/s traditional interface symmetric broadband origination services. However, the likelihood of customers switching from the use of multiples of 8Mbit/s retail circuits to the use of 34Mbit/s symmetric broadband origination appears to be considerably smaller since in practice relatively few customers are likely to be taking multiples of 8Mbit/s circuits.

A.115 Ofcom therefore considers that the price of 8Mbit/s traditional interface circuits is likely to be constrained by the availability of 2Mbit/s traditional interface circuits, and not by that of 34Mbit/s traditional interface circuits, and that 8Mbit/s/ circuits should therefore be considered to be part of the low bandwidth market.

A.116 The assumptions concerning circuit length and amortisation period for connection fees used in this analysis are the same as those used in the comparison of the prices of Kilostream circuits at different bandwidths. Its results are similarly robust under a range of different assumptions.

Are 34/45 and 140/155Mbit/s traditional interface circuits demand-side substitutes?

A.117 Ofcom has carried out an analysis similar to that outlined above in the context of BT's Megastream circuit PPC charges. These are shown in the table below.

Table A.4: Service-based cost oriented charges – 34Mbit/s to 622Mbit/s

Circuit	Connection charge per local end	Connection charge per additional local end	Rental charge per local end	Main link rental per km	Main link fixed charge
2 Mbit/s	£2,070	£631	£658	£139	£1,356
34 Mbit/s	£3,514	£1,220	£8,521	£323	£12,058
45 Mbit/s	£3,514	£1,220	£17,810	£404	£0
140 Mbit/s	£7,174	£4,880	£40,963	£928	£0
155 Mbit/s	£7,174	£4,880	£40,963	£928	£0
622 Mbit/s	See text below				

Source: *Consultation on a draft Direction to resolve a dispute concerning the provision of partial private circuits*, 10 September 2002.

A.118 Ofcom's analysis has been analogous to that outlined from paragraph A.96. The range of available bandwidths, and range of prices, is considerably more varied for Megastream circuits than is the case for Kilostream circuits. This makes such analysis less straightforward. However, Ofcom has been able to reach the following conclusions, which appear to be robust to a range of assumptions regarding circuit length and contract duration:

- the likelihood of widespread switching between 2Mbit/s and 34Mbit/s traditional interface circuits following a SSNIP appears to be very small (as described above);
- following a SSNIP, Ofcom would expect widespread switching between 34Mbit/s and 45Mbit/s traditional interface circuits. This is unsurprising given that the two are close together in terms of price and functionality;
- following a SSNIP, Ofcom would expect relatively widespread switching between 45Mbit/s and 140Mbit/s traditional interface circuits (or between 45Mbit/s and 155Mbit/s). This conclusion relies on a comparison between a comparison of a multiples of 45Mbit/s circuits being substitutes for two 140Mbit/s (155Mbit/s) circuits;
- following a SSNIP, Ofcom would expect very widespread switching between 140Mbit/s and 155Mbit/s traditional interface circuits. This is unsurprising given that the two are priced identically; and
- following a SSNIP, Ofcom would expect to see limited switching between 155Mbit/s and 622Mbit/s traditional interface circuits (as described in the next section).

A.119 The assumptions concerning circuit length and amortisation period for connection fees used in this analysis are the same as those used in the comparison of the prices of Kilostream circuits at different bandwidths. Its results are similarly robust under a range of different assumptions.

Is there a separate market for 'very high bandwidth' traditional interface circuits?

A.120 It has previously been suggested to Ofcom that 2.5Gbit/s circuits might form a distinct economic market, based on supply-side considerations. Ofcom disagrees with this view (see the discussion of supply-side substitution at the retail and wholesale levels below), but has considered whether a further split might be appropriate based on demand-side considerations. In particular, Ofcom has considered whether 622Mbit/s and above traditional interface circuits might form a distinct economic market.

A.121 The significant bespoke element of pricing (which exists at both the wholesale and retail level) complicates any attempt to compare the service based PPC charges of 155 and 622 Mbit/s traditional interface circuits.

A.122 However, Ofcom's analysis, using various sets of assumptions (see below), suggests that there is a relatively narrow range of bandwidth demands within which a SSNIP would induce switching between 155Mbit/s and 622Mbit/s. This has led Ofcom to conclude that a break in the chain of substitution occurs here for retail traditional interface circuits.

A.123 The availability of cost oriented 622Mbit/s PPCs is a relatively new phenomenon, as indeed is the use of leased lines at very high bandwidths. This means that Ofcom has been obliged to make certain assumptions concerning the appropriate figures to use in its price comparison, since 622Mbit/s traditional interface circuits are to some extent priced on a per network hop basis, and have certain modularity in those aspects of prices that are charged on a per km basis. However, Ofcom is satisfied that, on balance, the decision that the two are not demand-side substitutes is the most appropriate, and the one that holds over the widest range of plausible assumptions.

A.124 The assumptions concerning circuit length and amortisation period for connection fees used in this analysis are the same as those used in the comparison of the prices of Kilostream circuits at different bandwidths. The results are similarly robust under a range of different assumptions.

Supply-side substitution

A.125 Demand-side factors suggest that the breakpoints in the chain of substitution between low and high bandwidth traditional interface circuits occurs between 8Mbit/s and 34Mbit/s circuits and above 155Mbit/s – otherwise all other traditional interface circuits are linked to those of higher and lower bandwidth by a chain of substitution. The key question in terms of supply-side substitution is therefore whether these breakpoints are removed by supply-side substitution - if so, Ofcom’s market definition needs to be broadened accordingly.

A.126 Ofcom notes that suppliers of traditional interface leased lines generally supply circuits at a variety of bandwidths. The aggregation of current suppliers of low bandwidth traditional interface circuits – the hypothetical monopolist - therefore already includes all significant suppliers of high bandwidth traditional interface circuits, and vice versa. Switching on the supply side from one bandwidth to another would not therefore constitute new entry or an additional competitive constraint. Therefore, such suppliers are not relevant to supply-side substitution since they supply services already identified as demand-side substitutes.

A.127 In addition, in the absence of wholesale regulation, Ofcom considers that supply-side substitution of this type at the retail level is unlikely, because the costs of local access to a new site that would be incurred by a new entrant are significant and include sunk costs, such as digging and ducting except where the bandwidth was being changed by a customer at a given location. The absence of access to cost based wholesale inputs therefore means that other communications providers would not be able to quickly or cheaply commence the supply of these services to undermine the price increase of a hypothetical monopolist.

A.128 Ofcom therefore concludes that there is no supply-side substitution between higher and lower bandwidth traditional interface leased line markets.

Conclusion on traditional interface bandwidth distinctions

A.129 Considerations of demand-side substitution have been key in Ofcom’s market definition analysis. These have led Ofcom to conclude that there are the following retail traditional interface leased lines product markets:

- bandwidths up to and including 8Mbit/s;
- bandwidths from 34Mbit/s to 155Mbit/s inclusive; and
- bandwidths of 622Mbit/s and above.

Alternative interface retail leased lines

A.130 Ofcom has carried out a substitution analysis to determine whether the bandwidth distinctions identified in the traditional interface retail leased lines markets apply equally to the alternative interface retail leased lines market.

A.131 The costs of provision of Ethernet-based circuits do not vary significantly by bandwidth. This is because the costs of duct and fibre, which are generally invariant with bandwidth, form a very high proportion of the total cost of provision, even at higher bandwidths. This is supported by confidential information submitted by communications providers during the first consultation period. This information suggested that there is very little difference in the one-off capital expenditure required to provide a 1Gbit/s product over and above a 10Mbit/s product since the main cost difference relates to the cost of the network terminating equipment (NTE). The relative cost difference between the NTEs for the two products is approximately £1,000, which equates to only around 10 metres of dig (when a proxy of £100/metre is used) and dig forms the main cost element of providing an alternative interface circuit. It is therefore not appropriate to define distinct markets according to bandwidth, as has been done in other leased lines markets, because the higher bandwidth alternative interface circuits do competitively constrain the prices of lower bandwidth circuits.

Conclusion on bandwidth distinctions for alternative interface retail leased lines

A.132 Ofcom has therefore concluded that in the retail alternative interface market there are no identifiable bandwidth distinctions, and that this therefore forms only one market.

Forward look

A.133 Ofcom has considered the likelihood of competitive or technical developments that might affect the markets identified during the period covered by this review. Ofcom's market definition has taken into account the anticipated technological advances highlighted in communications providers' responses, in order to ensure that the definition remains robust on a forward looking basis. Ofcom's view is that there are no further developments that would affect these market definitions within a 2-3 year period. However, Ofcom will keep market conditions under review.

Justification for inclusion of 8Mbit/s circuits in low bandwidth market against the requirements in the Commission's Recommendation

A.134 As noted above, the inclusion of 8Mbit/s circuits in the retail low bandwidth leased lines market has the effect of requiring Ofcom, in its assessment of the regulatory options for the retail market in Chapter 5, to conduct regulatory option appraisals of the Commission's minimum set of retail leased lines (including circuits of bandwidths between 64kbit/s and 2Mbit/s), and 8Mbit/s retail leased lines. It also represents a departure from the Commission's Recommendation on markets, and as a consequence Ofcom is required to justify the departure specifically against the three criteria set out in the Recommendation, namely:

1. barriers to entry and the development of competition;
2. 'dynamic aspects' i.e. whether the market is dynamically moving towards effective competition with new entrants and increased innovation; and

3. the relative efficiency of competition law.

Ofcom has set out above its justifications for including 8Mbit/s leased lines in the low bandwidth traditional interface market. The justifications below set out the justification for imposing regulation on these circuits.

1. Barriers to entry and the development of competition

A.135 The provision of 8Mbit/s circuits is characterised by very high barriers to entry (sunk costs).

A.136 This is reflected by BT's high market share in low bandwidth circuits, which is in the region of 70% by revenue at the retail level (and in the region of 45%-50% by revenue in the case of 8Mbit/s circuits alone).

A.137 In the interests of proportionality and the fact that the 8Mbit/s standard is becoming obsolete, Ofcom has not mandated the provision of 8Mbit/s PPCs. This means that barriers to entry in the 8Mbit/s segment of the retail leased lines market will remain high and that competition is unlikely to develop.

2. Dynamic aspects

A.138 Since no new 8Mbit/s circuits are being sold, this product is characterised by very high barriers to expansion since there are no new customers available over which alternative retail (or wholesale) providers will be able to compete with existing suppliers.

A.139 This is due to the technical obsolescence of the 8Mbit/s standard.

A.140 These factors, together with the barriers to entry alluded to above, mean that there is no prospect of competition developing in this segment of the low bandwidth market.

3. Relative efficiency of competition law

A.141 The relative efficiency of competition law is discussed in detail in Chapter 4.

Issue 5: Retail leased lines – analogue and digital distinction

Introduction

A.142 An important issue to be addressed as part of the retail low bandwidth leased lines market definition exercise is whether there are two distinct retail markets for analogue leased lines and for low bandwidth digital leased lines.

Product description

A.143 Analogue leased lines are provided using analogue technology, specifically analogue customer premises equipment. All analogue leased lines are capable of supporting direct voice transmission, and offer a 64kbit/s capacity for voice services.

A.144 Most are capable of supporting low speed data applications, at different capacities depending on the type of line and whether or not it goes through the core network. If it does, than the capacity offered for data transmission is about 50kbit/s.

However, within the same exchange and in the 020 7 area, Baseband analogue leased lines can be used to carry up to 2Mbit/s using DSL technology. This is because Baseband analogue leased lines are an end-to-end copper connection (essentially two local loops joined together).

A.145 The table below shows how the volumes and revenues of low bandwidth leased lines offered by all communications providers (including BT) have evolved over the most recently available six years.

Table A.5: Low bandwidth (up to and including 8Mbit/s) leased lines volumes (000s) (not including Kingston)

	Analogue	Low bandwidth digital	Low bandwidth total
97/98	285	209	494
98/99	217	252	469
99/00	185	278	463
00/01	158	303	462
01/02	147	268	415
02/03	156	295	451

Source: Oftel/Ofcom Market Information

Table A.6: Low bandwidth (up to and including 8Mbit/s) leased lines revenues (£m) (not including Kingston)

	Analogue	Low bandwidth digital	Low bandwidth total
97/98	306	1076	1381
98/99	288	1231	1519
99/00	253	1343	1596
00/01	212	1420	1632
01/02	204	1513	1717
02/03	180	1320	1500

Source: Oftel/Ofcom Market Information.

A.146 It is important to bear in mind that the figures in Table A.5 refer to the number of leased lines, independently of their capacity. Analogue leased lines offer, on average, a lower capacity than digital low bandwidth leased lines (the capacity of which varies between 2.4kbit/s and 8Mbit/s). More detailed data for 00/01 and 01/02 indicate that about 30% of low bandwidth digital leased lines are 2Mbit/s, slightly over 40% are less than 64kbit/s, and slightly over 25% between 64 and 1984kbit/s.

A.147 Two further factors should be borne in mind when interpreting the figures. First, double counting occurs whenever a leased line is bought from BT by another communications provider and then re-sold as a leased line to an end user. This means that the same leased line can appear twice in the statistics, magnifying any trends. Provision and cessation of one such leased line would also be reflected twice. Second, communications providers have been able to migrate digital leased lines to PPCs since August 2001. Migration data submitted by BT as part of this leased line market review show that about 34,000 low bandwidth leased lines were migrated to PPCs by March 2002. This means that a significant part of the reduction in the number of digital leased lines supplied by BT in 2001/02 reflects migration to PPCs and not cessation.

A.148 During the five-year period 1997-2002, numbers of analogue leased lines showed an overall decreasing trend, whereas numbers of digital leased lines increased overall. The revenue (volume) share of analogue leased lines for all low bandwidth leased lines has declined steadily from 22% to 12% (from 58% to 36%). The effect of double counting may be significant for analogue leased lines as well as for low bandwidth digital leased lines, since many communications providers reported in the course of the market review investigation that they supply analogue leased lines by simply reselling BT's, and that they buy a significant proportion of the required local access for low bandwidth digital leased lines from BT, either as a PPC or as a leased line. In total, however, the number of low bandwidth retail leased lines has fallen.

Buyer description

A.149 Analogue leased lines are used by large firms as well as by many small and medium enterprises. In large firms, analogue leased lines tend in the main to be legacy installations, although some customers have indicated to Ofcom that their continued use of analogue leased lines is driven by cost. City institutions, for example, form a large group of analogue leased line buyers. A niche group of analogue leased line customers are those that use Baseband analogue lines within the 020 7 zone or within the same exchange which enables them to achieve 2Mbit/s capacity for data transmission.

A.150 In addition, before August 2001, a large number of BT's retail leased lines were bought by other communications providers, either to re-sell in the retail leased lines market, or to provide other products and services in other retail markets. Since August 2001, this number has decreased as other communications providers have migrated to PPCs.

Supplier description

A.151 The suppliers of analogue leased lines are a subset of the suppliers of leased lines, including BT, some cable companies, and some other communications providers.

Market definition

A.152 To establish whether or not analogue and low bandwidth digital leased lines should be identified as separate markets, the hypothetical monopolist test is used to identify possible supply-side and demand-side substitutes. In the rest of this discussion, the words 'low bandwidth' in front of digital leased line shall be omitted, unless there is a risk of confusion.

A.153 In carrying out the supply-side and demand-side substitution analysis, it will be implicitly assumed that the focus will be on analogue and digital leased lines offering roughly the same capacity. In particular, the analysis will concentrate on lines of 64kbit/s because most of the analogue leased lines can only provide a maximum of 56kbit/s of data. In other words, most of the analogue leased lines are not of the Baseband type.

A.154 As described in Chapter 2 and the introduction of this Annex, the market definition exercise will first be carried out in the absence of regulation at both the retail and the wholesale levels. Then, taking into account the proposed wholesale regulation, the market definition is carried out a second time in order to assess whether or not the retail market definition is affected by the wholesale regulation.

Demand-side substitution in the absence of regulation at either the wholesale or the retail level

A.155 Analogue leased lines and low bandwidth digital leased lines can only be considered as being part of the same market at the retail level if low bandwidth digital leased lines provide a competitive constraint on the pricing of analogue leased lines and/or vice versa. In addition to the price constraining effect between the two types of leased lines, the issues of functionality and switching costs have to be addressed.

Functionality

A.156 From a technical point of view, analogue and digital leased lines do not differ significantly for the following reasons:

- It is straightforward to adapt an analogue leased line to transmit digital information and to adapt a digital leased line to transmit analogue signals; and
- 64kbit/s digital leased lines and analogue leased lines are provided using the same PDH technology in the core network with the only real difference being the equipment at either end of the local end.

A.157 In terms of capacity, an analogue leased line offers 64kbit/s for voice transmission. For data transmission most types of analogue leased lines offer 40-50kbit/s or any multiple thereof (i.e. multiplying the number of analogue leased lines going through the core network). Digital leased lines may offer more or less than 64kbit/s. Among analogue leased lines the exception is Baseband circuits, which can be adapted with use of modems to provide digital leased lines with capacities of 64kbit/s to 2Mbit/s within the 020 7 area or within the same exchange.

A.158 If offered at the same price, a 64kbit/s digital leased line is viewed as offering a better deal than an analogue line because it offers more flexibility in terms of voice and data usage. In other words, a digital line offers a higher quality of service than an analogue line. While a digital line guarantees 64kbit/s for data and can carry voice traffic if a digital phone is used, an analogue line guarantees voice but can only support speeds below 64kbit/s for data (typically 50kbit/s), and needs a modem to do so. An exception is Baseband analogue lines that can be used to carry up to 2Mbit/s using SDSL technology.

Conclusion on functionality

A.159 Analogue leased lines (excluding Baseband lines) and 64kbit/s digital leased lines appear to be substitutes in terms of functionality, although the digital product offers a higher quality service than the analogue. A 64kbit/s digital leased line is required in order to offer voice services. A pair of Baseband-type analogue leased lines within the 020 7 area or within the same exchange offer similar functionality to a higher capacity digital leased line, up to 2Mbit/s.

Switching costs

A.160 In its analysis of demand-side substitution between circuits of different bandwidths, Ofcom considers it most appropriate for this market review to define the market on the basis of purchasers of new circuits. In doing so, Ofcom is guided by the forward-looking nature of the market analysis.

A.161 However, Ofcom notes that existing customers of analogue circuits face some costs of switching to digital leased lines, as set out below. Although not decisive to Ofcom's market definition, this feature is taken into account in its analysis of remedies (see Chapter 5).

A.162 If an end user wants to migrate its analogue leased lines to digital leased lines, its supplier will need to carry out engineering work (the most expensive part of the migration) and to install new network terminating equipment (NTE).

A.163 If an analogue leased line user decides to migrate to a digital leased line product keeping the same supplier, it will incur the following switching costs:

- changes to end user terminal equipment;
- a migration charge to cover the communications provider's migration costs, i.e. a (possibly reduced) connection fee; and
- a possible short break in the leased line service.

A.164 If an analogue leased line user decides to switch from analogue leased lines from one supplier to digital leased lines from a different supplier, it will incur the following switching costs:

- changes to end user terminal equipment;
- penalty for early termination of analogue leased line contract;
- connection fee to the new supplier; and
- a break in service.

Conclusion on switching

A.165 There are barriers to switching from analogue to digital (and *vice versa*) for existing end users which are not faced by purchasers of new circuits. The extent to which these barriers will prevent switching following a price increase will depend on the magnitude of the price increase, how long the price increase is expected to last, and the contract minimum period.

Hypothetical monopolist test

A.166 As part of the demand-side substitution analysis, the hypothetical monopolist test assesses whether or not a hypothetical monopolist can profitably raise the price 5 to 10% above its competitive level. The demand-side substitution analysis will look in turn at whether or not digital leased lines can constrain analogue leased lines.

A.167 The relativity of prices of analogue and digital leased lines at their competitive level can be derived by considering the underlying costs. This is because competitive level prices closely reflect costs. It cannot be expected that analogue costs are systematically lower than digital costs since many analogue and low bandwidth digital leased lines run on the same network using the same technology. For example, BT can use identical main links and local access ends to provide either a 64kbit/s digital leased line or, by adding the appropriate modem equipment, a 56kbit/s analogue leased line.

The main link

A.168 When the circuit is longer than 15km, both main links are on the DPCN network and both local ends are provided on copper (BT provides local access on copper for digital leased lines with a capacity up to 256kbit/s). The cost of a 64kbit/s main link will thus be the same whether the circuit is analogue or digital.

Local access

A.169 The cost of the local access network will be the same or similar in both cases as both analogue and digital 64kbit/s leased lines can use one or two copper pairs. There will be a difference in the network terminating equipment (NTE) costs (with digital NTE more expensive than the analogue equivalent). However the costs of local access are significantly more than those for NTE, particularly where the local ends are long. The overall costs of the local ends will therefore be fairly similar in both cases, with the digital ends possibly costing 5 to 10% more. This example supports the conclusion that analogue leased line costs cannot be viewed as significantly and systematically lower than digital leased line costs.

A.170 The above shows that there are no technical reasons why the costs of analogue leased lines should be systematically lower than the costs of digital leased lines. This leads Ofcom to conclude that prices of analogue leased lines at the competitive level will not be systematically lower than the competitive level price of digital leased lines.

Can digital leased lines constrain the price of analogue leased lines?

A.171 It will not be profitable for a hypothetical monopolist to raise the price of analogue leased lines 5 to 10% above the competitive level if enough end users switch away from analogue digital leased lines in response to a small but significant lasting price increase.

A.172 As noted above, the competitive price of analogue leased lines is not expected to be significantly lower than the competitive price of digital leased lines. It is therefore believed that the price of an analogue leased line after a 5 to 10% increase would be about the same as that of a digital leased line, if not higher. Because digital leased lines offer a higher quality than analogue leased lines, new end users would buy a digital leased line instead of an analogue leased line. Thus digital leased lines constrain the price of analogue leased lines and so both should be included in the same market.

Supply-side substitution in the absence of regulation at either the wholesale or the retail level

A.173 The supply-side substitution analysis identifies the extent to which existing suppliers of other products and services are likely to start producing the relevant products or services following a price increase and whether this would be sufficient to make the price increase unprofitable. Only entry within a relatively short period of time and without incurring significant costs is relevant for supply-side substitution considerations.

A.174 Analogue and low bandwidth digital leased lines are normally provided using the same technology in the core network, and often the same core network. The access network is where the services differ as different equipment is installed at the Digital Local Exchange (DLE) and the customer premises.

A.175 This means it is fairly easy for a supplier of digital leased lines to transform an existing analogue leased line into a digital line and *vice versa*. An analogue leased line can be converted to transmit digital information with the use of modem equipment at either end. Likewise, a digital leased line can be converted to transmit analogue signals with the use of a combination of analogue to digital converters at either end. This can be done by the customer. The other option is to change the equipment at the DLE and customer premises, which could easily be done by the supplier. This also suggests that if a supplier has spare capacity to a site, it could start supplying analogue (digital) leased lines to that site in response to a digital (analogue) price increase within a relatively short period of time and without incurring significant costs.

A.176 However it is unlikely that an existing supplier of analogue (digital) leased lines would be able to start supplying to new premises as a response to a 5 to 10% increase in the price of digital (analogue) leased lines. The reason is that the costs of local access (especially digging and ducting) to a new site are significant, include sunk costs and are likely to involve a significant time delay in responding to the price increase. Since Ofcom considers that the likelihood that a communications provider may already be serving the premises is very low, quick and inexpensive entry is therefore not feasible on a scale sufficient to constrain the prices of a hypothetical monopolist. As a consequence there is no supply-side substitution between analogue and digital leased lines.

Conclusion of market definition analysis in absence of regulation at either the wholesale or the retail level

A.177 Ofcom has taken a forward-looking view and so focused on the choices available to purchasers of new circuits. It has also considered the relativity of competitive prices for analogue and digital leased lines. Ofcom has reached the conclusion that the competitive price of analogue would not be systematically lower than the competitive price of digital, while digital provides a higher quality. Therefore digital leased lines constrain the price of analogue leased lines, and the two types of leased lines are in the same relevant market from a demand point of view.

Conclusion of retail product market analysis in the absence of wholesale regulation

A.178 Ofcom has concluded from the above analysis that the following product markets exist in the UK:

- low bandwidth traditional interface retail leased lines (including analogue circuits and digital circuits at bandwidths up to and including 8Mbit/s);
- high bandwidth traditional interface retail leased lines (at bandwidths above 8Mbit/s up to and including 155Mbit/s); and
- very high bandwidth traditional interface leased lines (at bandwidths above 155Mbit/s); and
- alternative interface retail leased lines (at all bandwidths).

A.179 The product market analysis will now be revisited in the presence of the proposed wholesale regulation.

Retail product markets in the presence of wholesale regulation

A.180 The purpose of this section is to assess whether the retail market definitions derived above change if wholesale remedies are taken into account. The assessment of the relevant market, SMP and remedies at the retail level need to take account of the impact of wholesale remedies.

A.181 For the purposes of this section it is assumed that cost oriented PPCs are available on regulated terms and conditions. These wholesale remedies do not affect the conclusions above about demand-side substitution. The possible impact on supply-side substitution is discussed below.

Issue 1: Symmetric vs asymmetric – rationale for separate markets for retail leased lines and asymmetric broadband products and services

A.182 The introduction of wholesale remedies is not expected to modify the conclusion of the demand side substitution analysis. This is because the demand-side substitution analysis is not influenced by the presence or absence of PPC regulation at the wholesale level.

A.183 The presence of wholesale regulation could make it easier for suppliers of asymmetric broadband services to enter the supply of symmetric broadband services and of leased lines in particular. This is because existing suppliers of asymmetric broadband services might then purchase leased line wholesale inputs, such as PPCs, in order to offer leased lines.

A.184 However Ofcom has identified factors that are likely to limit the speed at which these asymmetric broadband services suppliers can enter the supply of leased lines and win customers from the existing suppliers. Such factors reduce the strength of the competitive constraint these potential entrants would impose on the hypothetical monopolist in case of a SSNIP, so that they do not satisfy the criteria for supply-side substitution. These factors are of two types: factors affecting the time needed to acquire and organise PPCs in a network capable of delivering retail leased lines, and factors influencing the time needed to attract a sufficiently large number of customers. The latter relates to the various barriers to switching (e.g. contract lengths, customers averse to forgoing volume discounts, customer inertia) and barriers to expansion identified as part of the market power assessment (see Annex B). The former type of factor refers to the lead times needed to acquire PPCs and Point Of Connection (POC) equipment, that can last up to 110 working days if there has been appropriate forecasting or 165 working days in the absence of forecasting, i.e. more than 7 months. In addition, for a new entrant there would be the time needed to organise these wholesale inputs in a functioning network and to start offering commercial services.

A.185 For a class of new entrants to constitute supply side substitutes, it is necessary that they would be able to enter sufficiently quickly and at sufficiently low cost to make a SSNIP by the hypothetical monopolist in leased lines unprofitable. The above considerations show that this requirement is not fulfilled by potential entrants into leased lines from asymmetric broadband services. The possibility of entry into retail leased lines by such suppliers is, however, included as part of the assessment of market power (under criteria such as potential competition and entry barriers).

A.186 Ofcom concludes, therefore, that in the presence of the wholesale remedies, retail leased lines and asymmetric broadband services are in separate markets.

Issue 2: Retail leased lines and other data services

A.187 The presence of wholesale regulation could make it easier for suppliers of other symmetric data services to enter the supply of retail leased lines. This is because existing suppliers of other symmetric data products might then purchase leased line wholesale products, such as PPCs, in order to offer retail leased line products. However, almost all existing suppliers of other symmetric data products are also suppliers of retail leased lines and cannot therefore be considered a new and additional competitive constraint on the hypothetical monopolist.

A.188 Ofcom is therefore of the view that the other existing suppliers of other symmetric data products, if any, are not in a position to impose a competitive constraint on the hypothetical monopolist. This is why Ofcom considers that in the presence of the proposed wholesale remedies, supply-side substitution between retail leased lines and other symmetric data products is not present.

A.189 The above considerations show that in the presence of the proposed wholesale remedies, retail leased line services and other symmetric data services are in separate markets.

Issue 3: traditional interface retail leased lines vs alternative interface retail leased lines

A.190 Ofcom's view is that the presence of wholesale regulation by means of PPCs (or indeed cost oriented trunk segments or AISBO) does not modify the conclusion of the analysis carried out in the absence of any regulation.

A.191 As described previously, the demand side analysis is unaffected since the availability of cost based wholesale inputs would not affect consumer preferences.

A.192 On the supply side, the presence of wholesale regulation could make it easier for suppliers of one symmetric data service (SDH or Ethernet-based) to enter the supply of the other. This is because existing suppliers of the one product (e.g. Ethernet-based alternative interface retail leased lines) might use wholesale inputs (such as PPCs), in order to offer the other product (e.g. traditional interface retail leased lines). However, all the major suppliers of alternative interface products are also suppliers of traditional interface retail leased lines and cannot therefore be considered a new and additional competitive constraint on the hypothetical monopolist.

A.193 The market defined in the absence of regulation is therefore not broadened by considering the impact of upstream regulation.

Issue 4: Retail leased lines – bandwidth distinctions

Traditional interface

A.194 As noted above, consideration of demand-side substitution has identified two break points in the chain of substitution from the lowest (including analogue) to highest bandwidth traditional interface retail leased lines.

A.195 In the light of Ofcom's proposed wholesale regulation at the trunk and traditional interface symmetric broadband origination levels (see Annex B) , it is appropriate to investigate whether or not the availability of traditional interface symmetric broadband origination at cost oriented prices is likely to alter the previous conclusion on market definition. The focus of this analysis is on supply-side substitution, since the (non-) existence of wholesale regulation does not influence demand-side issues in this case.

A.196 A hypothetical monopolist supplier of high bandwidth traditional interface leased lines is not constrained by supply-side substitution from a low bandwidth supplier because there is no supplier that only sells low bandwidth leased lines. In other words, all low bandwidth suppliers are also high bandwidth suppliers and vice versa. Supply-side substitution is therefore not relevant.

Alternative Interface

A.197 As noted above, consideration of demand-side substitution has led Ofcom to conclude that there is a single chain of substitution for all bandwidths of alternative interface retail leased lines.

A.198 In the light of Ofcom's proposed wholesale regulation at the alternative interface symmetric broadband origination level (see Annex B) , it is appropriate to investigate whether or not the availability of alternative interface symmetric broadband origination at cost oriented prices is likely to alter the previous conclusion on market definition. The focus of this analysis is on supply-side substitution, since the (non-) existence of wholesale regulation does not influence demand-side issues in this case. However, as all bandwidths of alternative interface leased lines are held to be in the same market, supply-side substitution is not relevant either.

Issue 5: Retail leased lines – analogue and digital distinction

A.199 The presence of wholesale regulation by means of PPCs is not expected to modify the conclusion of the analysis carried out in the absence of any regulation, given that it was already concluded that analogue and low bandwidth digital leased lines are in the same relevant market, based on demand side considerations. This relatively broad market could not be narrowed any further by the presence or absence of PPC regulation at the wholesale level.

Conclusion of retail product market analysis

A.200 Ofcom has concluded from the above analysis that the following product markets exist in the UK for retail leased lines:

- low bandwidth traditional interface retail leased lines (including analogue circuits and digital circuits at bandwidths up to and including 8Mbit/s);
- high bandwidth traditional interface retail leased lines (at bandwidths above 8Mbit/s up to and including 155Mbit/s); and
- very high bandwidth traditional interface retail leased lines (at bandwidths above 155Mbit/s); and
- alternative interface retail leased lines (at all bandwidths).

A.201 These market definitions apply whether or not wholesale remedies are taken into account.

Retail geographic market analysis

Retail geographic markets in the absence of retail or wholesale regulation

Issue 6: Geographic markets

A.202 In addition to the products to be included within a market, market definition also requires the geographic extent of the market to be specified. The geographic market is the area within which demand side and/or supply side substitution can take place. Ofcom has considered the geographic extent of each relevant market covered in its market review consultation documents.

A.203 In the draft notification, Ofcom proposed that national markets existed for both retail and wholesale leased lines

Responses to the draft notification – geographic markets

A.204 In its response to the December 2003 consultation, BT made a number of arguments to suggest that Ofcom should define local markets. Ofcom's view on this issue is outlined below.

A.205 BT argued that Ofcom had failed to take proper account of geographic variations, as required by the EU Directives, when defining leased lines markets. BT suggested that the economics of communications networks is such that geography is a critical factor. BT stated that this is because other communications providers have built out networks in areas of highest population and business density, meaning that competition may be more intense in these areas than in the rest of the country. BT suggested that different conditions of competition exist in and between, in particular, metropolitan areas, and that distinct geographic markets should be defined to take account of this.

A.206 In its response, BT provided two key pieces of evidence to support its view that Ofcom should define sub-national markets, and that doing so would result in a reduction in the number of areas in which it was dominant in certain product markets. These were:

- a critique of Oftel's analysis of geographic markets carried out by Professor George Yarrow. This report discussed the high level rationale for defining markets and assessing market power on a regional basis; and
- an assessment of the level of competition (via the estimation of market shares and examination of competitor network presence) in a number of different geographic areas carried out for it by the consulting firm Analysys. This report concluded that, when various geographic areas were grouped together into broad categories, BT was likely to have a low (below 40%) market share in a number of metropolitan areas despite its share being higher than this on a nationwide level.

A.207 The question of geographic markets is a complex one that raises many economic and policy issues, which will need regular review as markets develop. Ofcom therefore intends to continue to conduct analysis relating to geographic markets across the sector in the context of its Strategic Review of Telecommunications. Ofcom's current view on this issue in the context of leased lines markets is outlined below.

Geographic market definition in telecommunications markets

The SSNIP test

A.208 The definition of geographic markets in telecommunications is generally problematic; and in the leased lines market particularly so. This is because the standard economic approach to market definition, based on an analysis of demand and supply-side substitution, will lead to the identification of a multitude of highly localised geographic markets, since, as outlined in, for example, the December consultation:

- if a business requires a leased line between two of its premises, a circuit between two nearby locations will not generally be a substitute, i.e. there is no demand side substitution.
- suppliers with network facilities in one part of a city will not normally be able to extend their reach into another part of the city without substantial investment, i.e. there is limited supply-side substitution.

A.209 Defining localised markets on the basis of the absence of local demand or supply substitution would not provide a practicable basis for an assessment of the extent to which consumers will be captive to a particular supplier. In the extreme, it could mean that leased lines between any pair of locations (buildings or perhaps streets) would constitute a separate market, resulting in literally thousands of separate markets, particularly in the case of retail and origination markets. An analysis of the market at this level of detail would not be practical or desirable, and as such it has not been advocated by Ofcom, BT, or any of the other communications providers. Given this consensus, factors other than the outcome of the SSNIP test must be taken into account. These are discussed below.

Additional considerations in market definition

A.210 Given the arguments outlined above, it is necessary to take account of other factors over and above standard demand and supply-side substitutability when defining geographic markets in telecoms. Two key such factors are that a national market will exist in the presence of:

- **a cluster market (buying patterns)** - in certain cases, products or areas may be considered to be in the same product or geographic market on the basis of a cluster market analysis if consumers purchase the relevant services as a bundle. This may mean that buyers are not solely concerned with the individual prices of particular products or in particular areas, but with the total price of the bundle. They could in practice purchase the product on a national basis; and
- **a common pricing constraint** - i.e. areas in which a firm voluntarily offers its services at a geographically uniform price may constitute a single market.

A.211 Ofcom has not considered these factors in any particular order or heirachrchy. Ofcom's view is that the presence of either of these considerations is sufficient to suggest the existence of a national market, unless there is strong evidence to the contrary based on some other consideration(s). These factors, especially the common pricing constraint, have been important to the definition of a national market in other market reviews (such as wholesale broadband access, even though market shares vary between cabled and non-cabled areas).

A.212 In cases where none of the above factors (substitution, common pricing constraint, cluster markets) can be used to define a market, there is no "standard" approach to market definition. In such cases, it is likely to be necessary to aggregate individual markets into broader groups, and to assess the level of competition in each of these.

Variations in competitive conditions

A.213 If an “aggregating local markets” approach is taken then it may be appropriate to do this by considering the similarities, or lack thereof, in competitive conditions between areas. This approach has been advocated by BT. This possibility is set out in at paragraph 56 of the European Commission’s Guidelines on market analysis and the assessment of market power, which state that in cases where there is a sufficient degree of variety in competitive conditions between areas (what a sufficient level might be is not specified), distinct local markets should be defined:

“The definition of the geographic market does not require the conditions of competition between traders or providers of services to be perfectly homogeneous. It is sufficient that they are similar or sufficiently homogeneous, and accordingly, only those areas in which the conditions of competition are ‘heterogeneous’ may not be considered to constitute a uniform market.”

A.214 However, the relevance of competitive conditions to geographical market definition does not signal an expectation that market shares would be the same, or even similar, across a single geographical market. As indicated by Simon Bishop and Mike Walker in *The Economics of EC Competition Law* :

“There is no way in which a "similar market shares" condition can be derived from the fundamental question of market definition - is a collection of products in a given region worth monopolising? Moreover, there is no relationship between a "similar market shares" condition and the concept of substitution in demand or supply. There is no basis whatsoever for expecting that, within a relevant geographic market, shares in all areas of that market should be the same as for the market as a whole. Indeed, it would be unusual if they were the same throughout.”

A.215 The approach advocated by BT is first to analyse competitive conditions (specifically market shares and network reach / number of competitors) in a large number of distinct areas (e.g. “metropolitan areas”), based on a hypothesis about competitiveness in each of these, and then, where appropriate, to group these areas together into groups in which market shares and competitive conditions are similar to each other.

A.216 Such an approach, i.e. to define markets based on relatively small variations in competitive conditions will tend to blur the line between (i) market definition and (ii) the assessment of market power, two stages in competitive analysis which are normally distinct. However, as argued above, a degree of “aggregating” is likely to be necessary in order to reach a sensible market definition in the absence of demand- and supply-side substitution.

A.217 BT’s chosen method of aggregation has some merits. Most obviously, in the case of those product markets in which SMP would be found at a national level, it should lower the risk of applying regulation to local areas in which competition was effective. However, it also runs the risk of erroneously finding competition in segments of the market in which BT is in fact dominant. There is therefore a trade-off, in deciding whether or not to aggregate markets at a national or sub-national level. This trade-off is summarised in the paper written on behalf of BT by Professor Yarrow (paragraphs 44 to 49). Assuming that BT would be found to be dominant if the market is analysed at the national level and that it would not be dominant in some geographic areas if a more localised analysis were carried out, the trade-off is between:

(a) defining localised markets - which may lead to an absence of *ex ante* regulation in some areas in which BT is dominant; and
(b) defining a national market - which may lead to the imposition of *ex ante* regulation on BT in some areas in which it is not dominant.

A.218 Ofcom's view is that the appropriateness of the first option will tend to be greater in cases where the following conditions are satisfied:

(i) there is a readily identifiable area in which competitive conditions are significantly different from those in other areas;
(ii) competitive conditions are relatively homogenous within this area, i.e. they do not vary on a highly localised basis;
(iii) the wholesale product market in question is one for a new, innovative service, in which the imposition of *ex ante* conditions might be detrimental to the development of competition;
(iv) barriers to entry to the market (e.g. sunk costs) are low, meaning that entry to the market will be relatively straightforward, meaning that the imposition of *ex ante* conditions at the wholesale level may be inappropriate; and
(v) the market is not characterised by national buying patterns at the retail level – this is important because, for example, pockets of dominance within an area found to be broadly competitive at an aggregate level could prevent firms from competing at the national level to some extent.

A.219 The first two conditions are in practice likely to be decisive in many cases. In the context of most product markets in the UK, the Kingston upon Hull area is a key example. In this area, unlike the rest of the UK, Kingston Communications is by some distance the biggest communications provider, with a much wider network reach than other operators *throughout* the Hull area, and a very high market share of all telecoms services.

A.220 In the case of deciding whether or not to divide the rest of the UK into distinct geographic areas, Ofcom has considered the full range of conditions above, together with other criteria such as common pricing constraints and cluster markets.

Geographic market definition for leased lines

A.221 Since the SSNIP test does not by itself form a useful basis for defining geographic markets in the context of leased lines product markets (as discussed at paragraphs A.208 and A.209 above), Ofcom has considered the 'common pricing constraint' and 'buying patterns' factors, as is outlined below.

Buying Patterns

Retail traditional interface leased lines

A.222 As outlined above, in cases where buying often takes place at a national level, a national market may exist.

A.223 Many large companies have multiple sites, often in a number of parts of the country, and it is not uncommon for them to have a preference for purchasing leased lines from a single supplier. Two of BT's largest competitors at a national level have advised Ofcom that well over half of their retail leased lines business stems from the sale of circuits that form part of a "network solution" provided to a single customer and bought from a single supplier. In many cases these network solutions are bought on a national basis, or at least on the basis of the whole area that the customer operates in. Ofcom has also been advised that the demand for leased lines products increasingly comes from systems integrators and other resellers, who tend to source inputs from a smaller number of network operators, and, where possible, to use a single operator per customer network.

A.224 This factor suggests that suppliers of leased lines face competitive conditions on a national, or at least a very broad, geographic basis at the retail level. In this context, it could be argued the presence of competitors in a single area, for example London, may not be sufficient to constrain the price of BT even in London, if competitors are not also located in other parts of the country. Because large firms have multiple sites they require internal high capacity networks that are widely spread on a geographic basis. Only BT, which unlike its much smaller rivals does not have a network reach that is restricted to specific high density areas, is likely to be in a strong position to offer such solutions.

TISBO, AISBO and trunk segments

A.225 It is important to note that the buying patterns factor is of primary importance at the *retail* level. This is because at the wholesale level BT's competitors could in principle purchase network segments from each other in order to fill gaps in their ability to self-supply. The extent to which such arrangements will be able to impose a competitive constraint at the wholesale level will depend on a number of factors, including:

- the ability of smaller operators to interconnect with each other as opposed to BT given their smaller network reach and the balance of commercial advantage perceived by them in doing so; and
- the extent to which customer networks built up using the inputs of three or more network operators represent can provide the same quality of service as one based on wholesale inputs provided by two or fewer operators.

A.226 At present, Ofcom understands that there are not many points of interconnection between communications providers (other than BT) that are suitable for interconnection of leased lines, both in absolute terms and relative to the number of potential points of interconnection between communications providers and BT. While this remains the case, the "buying pattern" argument suggests that wholesale markets should be defined on a national basis.

Pricing Behaviour

A.227 As outlined above, when a communications provider charges a uniform national price, and is not required to do so by regulation, this can be taken as an indicator of the existence of a national market. BT has recently been in a position to de-average its pricing in all of the markets covered by this review. This means that it is worth considering the uniformity of pricing on a product market specific basis.

Traditional interface retail leased lines

A.228 BT currently applies a distinct pricing scheme to the CLZ. This may reflect some or all of the following examples of unique characteristics of the London area:

- shorter average circuit length;
- shorter extra required dig per customer by BT;
- different unit costs in the London area; and
- a differing level of competition being faced by BT in the London area

A.229 In the light of its pricing policies, Ofcom's view is that it is unlikely that BT faces a national pricing constraint at the retail level, although it prices on a uniform basis in the rest of the UK outside London.

Trunk Segments

A.230 BT's charges for trunk segments have not been set by Ofcom. BT continues to price for trunk segments on a national basis rather than setting route-by-route charges. To the extent that this is not the result of regulation, this provides an argument for suggesting that it is appropriate to define a national market for trunk segments on the basis of a common pricing constraint. BT is currently free to de-average its charges on a geographic basis but has so far chosen not to do so. The current evidence therefore provides support for a common pricing constraint in the market for trunk segments. It is not straightforward to speculate how this might change in future. Evidence of widespread de-averaging by BT (and other suppliers) would be taken into account in defining geographic markets in the next market review.

TISBO

A.231 For the last two years BT has been obliged to provide PPCs to other communications providers on request, based on charges set by Oftel in 2002. These charges were set on a national basis and BT has thus far not attempted to charge below these levels in specific areas. Prior to that regulation, BT marketed and priced such circuits as if they were retail circuits; that is to say, different prices were charged in Central London from the rest of the UK. This means that Ofcom is not of the view that a common current pricing constraint implies a national market in the case of TISBO (although there are other reasons for arguing that a national market definition is appropriate, as is outlined below).

AISBO

A.232 At the retail level, BT has hitherto charged a national price, with no variation applied to the CLZ or any other area, for its retail alternative interface (LES) products. BT has been under no regulatory obligation to adopt a national pricing scheme, since prior to this review neither Oftel nor Ofcom had investigated this market, found BT to be dominant in it, or imposed regulation. Whilst it is true that widespread take-up of these services is a relatively recent development and that BT's pricing structure may change in the future, Ofcom notes that this charging structure, and indeed the exact level of most charges, is well established. This suggests that it might be appropriate to define a national market for AISBO circuits on the basis of a common pricing constraint. This means that defining a national market will not impede the development of competition for this product set.

Conclusion on SSNIP, buying patterns and pricing behaviour criteria

A.233 The table below summarises the implications of each of the factors that Ofcom has considered in assessing the appropriate geographic segmentation in leased lines markets.

Table A.7: Criteria for assessing geographic markets

Product market	SSNIP test	National buying patterns	National pricing constraint
Retail traditional interface	Proliferation of highly localised markets – impractical to analyse	Strongly suggests a national market	Suggests CLZ and Hull area separate from the rest of the UK
TISBO		May suggest a national market	Inconclusive
Trunk segments			Suggests a national market
AISBO			Suggests a national market

A.234 The considerations highlighted in the above table suggest that:

- the market for retail traditional interface leased lines is national, based on the existence of national buying patterns;
- the market for trunk segments and AISBO are national based on the existence of a national pricing constraint; and
- whilst national buying patterns may provide some support for the existence of a national market in the case of TISBO, further analysis of other factors is desirable to validate the use of such an assumption

A.235 Ofcom has therefore examined possibilities other than a national market in the context of these markets, including the one advocated by BT in its response to the December consultation. If local markets could be defined in practice where competitive conditions were markedly more homogeneous than for a national market, the above provisional conclusion would require reconsideration.

Variations in competitive conditions

A.236 As stated above, unless leased lines markets are defined on something akin to a street-by-street basis or the buying patterns or common pricing constraints criteria strongly support a national market, some degree of aggregation of local markets is required. Due to the highly localised nature of competition in leased lines markets:

- any aggregates that are identified as "competitive" are likely to have non-competitive areas within them; and
- similarly, any areas in which (for example) BT is found to be dominant will have some areas in which there may be effective competition.

A.237 This is explored below by some analysis carried out by Ofcom for the Central London area and for Manchester. Ofcom would expect these to be two of the areas in the UK in which widespread competition would be most feasible - BT has drawn attention to the alleged competitiveness of the Central London area in particular.

TISBO and AISBO markets

A.238 The analysis below is applicable to both TISBO and AISBO markets as the same access networks of communications providers are used to provide both products.

Analysis of geographic markets in London

A.239 Ofcom has undertaken a direct comparison of the network reach of BT relative to other communications providers in major metropolitan areas. Using data purchased from *Experian* and network maps provided by communications providers, Ofcom plotted the fibre and duct networks of four of the largest competitors to BT against the locations of businesses with 250 or more employees (the top end of the large business sites market). The 250 employee cut-off point was used since, based on discussions with industry, Ofcom is of the view that this is a reasonable proxy for the size of business that will be a potential customer of leased line services. The cost of a leased line is less likely to be justifiable in the case of smaller businesses.

A.240 Discussions with communications providers suggested that they are typically prepared to extend their networks by 20-100 metres in order to serve a new customer. The significant upfront revenue associated with high bandwidth requirements might induce communications providers to dig for longer distances, similarly in certain built-up areas where dig costs and times are likely to be higher, communications providers might only be prepared to dig distances towards the bottom of the range given above. In its analysis Ofcom has analysed the relative network reach of communications providers using a dig distance of 300 metres. Inconveniently, this relatively high figure is in Ofcom's view the smallest figure that can be used for a robust analysis. This is because of intrinsic inconsistencies with postcode data that identifies the location of businesses (which is accurate to within 50-80 metres) and inaccuracies associated with standard geo-coding procedures. To the extent that the 300 metres figure is too high, this approach will lead to an overstatement of the extent of competition and an understatement of BT's advantage over other communications providers.

A.241 The outcome of this analysis suggests that for London (defined as the area bounded by the M25 motorway), 50%-60% of business premises are within 300 metres of competitors' networks. This statistic, whilst not useful as an indicator of BT's actual market share, shows that BT has a large number of "captive" potential customers, not less than 40% to 50% of the total within this area. This means that, regardless of market shares for the London area as a whole, on a forward looking basis BT will have a considerable advantage over other players in the provision of leased lines within the London area. Even if BT's current market share within the London area as a whole were below a threshold normally indicative of dominance, a large proportion of customers (perhaps in the region of half) would not be able to look beyond BT for supply.

A.242 Purely for the purposes of illustration, Ofcom considered narrowing the area to the Central London Zone (defined as the area bounded by the 020 7 dialling code), rather than the M25 area. It found that the networks of competitors were within a dig of 300 metres of 60%-85% of 250+ employee business sites. (Ofcom has two observations on the use of the CLZ as a geographic market. The first is that the CLZ is defined on the basis of a dialling code area, and as such has little relevance to the availability of leased lines. Secondly, defining market boundaries within a city area may lead to erroneous conclusions since in practice competitive conditions are likely to be identical in the areas immediately inside and outside any identified boundaries.) This analysis suggests that a significant proportion, albeit apparently smaller than the proportion in the broader M25 area, of potential customers within the CLZ are "captive" customers of BT. Within the CLZ, Ofcom carried out an additional piece of analysis, comparing the number of points of presence (points at which leased lines customers can easily be connected) of BT with that of the next largest communications network in London. This comparison showed that BT has seven hundred times the number of points of presence. This statistic lends further substantial support to the proposition that BT is likely to have a significant advantage over other communications providers in a substantial proportion of the CLZ.

A.243 There currently remains a significant dependency upon BT for wholesale inputs in metropolitan areas. For example, BT sells nearly 12,000 PPCs, some 21% of the national total, within the London area – despite a number of alternative communications providers having large amounts of network in London. This suggests that even in areas where they have their own networks, alternative communications providers are still heavily dependent on BT providing PPCs to enable them to compete effectively with BT's retail leased lines products.

Analysis of geographic conditions in Manchester

A.244 Ofcom has carried out a similar assessment to the one outlined above for Manchester. This city was chosen as one of the next largest cities in the UK when ranked by the number of business sites and therefore one of the most likely places for competitors to have undertaken significant build of local access network.

A.245 The distribution of large businesses in the Manchester area is fairly wide, rather than being concentrated on a single central business district. With this in mind, the M60 has been used as a proxy boundary of the Manchester area, capturing both the centre of Manchester and the Trafford area. Ofcom's analysis of this area shows that only around 50-60% (in the case of the second largest operator) of business customers are within 300 metres of competitors' networks. This gives BT a large number of "captive" potential customers of at least 40% to 50% of the total within this area. This means that, regardless of market shares for the Manchester area as a whole, on a forward looking basis BT will have a considerable advantage over other players in the provision of leased lines within the Manchester area. Even if BT's current market share within the Manchester area as a whole were below a threshold normally indicative of dominance, a large proportion of customers (probably around half) would not be able to look beyond BT for supply.

Trunk segments

A.246 As outlined in paragraph 2.138, Ofcom is of the view that there is a national market for trunk segments. This view was primarily informed by BT's national pricing behaviour. However, for completeness, Ofcom has considered the extent to which the trade-off described in paragraph 2.140 is applicable. If, as suggested by BT, the trunk market were to be defined on the basis of conveyance between broad metropolitan areas, there would be a degree of variation in the number of competitors within these areas giving rise to similar issues to those outlined in the preceding sections. However, given that the trunk market is defined between points of aggregation, of which there are a finite number, the problem would be somewhat less marked. This means that, as outlined below, Ofcom has put more weight on the national pricing constraint argument in the case of trunk segments.

Conclusions of local market analysis

A.247 As described in conditions (i) to (v) in the generic discussion of competitive variations in paragraph A.218 above, a national market definition is likely to be appropriate in cases where competitive conditions vary on a highly localised basis so that moving from a national market to a more disaggregated approach does not in practice lead to geographic markets which are significantly more homogeneous than the national market.

A.248 As noted above, London and Manchester were chosen for analysis as these were good examples of areas where a relatively high degree of competition might be expected to exist. In practice, Ofcom's analysis shows that competition within these areas may not be significantly more homogeneous than in the country (excluding the Hull area) as a whole. Even in areas where the density of demand and hence presence of competitors is most widespread, the potential for competition is far from uniformly effective throughout those areas.

A.249 This means that, were Ofcom to make a segmentation into local markets based on the fact that some areas were suggested to be broadly competitive, this finding would be erroneous in the sense that BT would face little or no competition within substantial parts of these areas. This argument is particularly relevant in the case of origination and retail markets, since, as described above, competitive conditions vary widely within a broadly defined geographic area such as a particular city. The local network analysis therefore strongly supports the conclusions reached in paragraph 2.138. Ofcom's view is that a national market definition is appropriate, given:

- the highly localised nature of competition in leased lines markets meaning that there would be significant uncompetitive areas within any geographic areas that were declared to be broadly competitive in aggregate;

- the national buying patterns that exist, especially at the retail level; and

- a common pricing constraint is a material factor in trunk and AISBO markets.

A.250 On balance, Ofcom regards the arguments in favour of definition of local geographic leased lines markets as fairly weak at present, while recognising that both the impact of regulation and market developments may cause a different conclusion to be reached in a future review. Certainly, the matter will need to be reconsidered in the next Market Review. For this Review however, Ofcom concludes that it is right to define a national geographic market (excluding Hull) in the case of each of the 5 product markets considered.

A.251 Ofcom returns to the trade-off described in paragraph A.217 above (and identified by Professor Yarrow in his paper), and the conditions outlined in paragraph A.218:

- Ofcom's network analysis of London and Manchester shows that any credible sub-national market would have significant pockets in which BT would be in a position to exploit its market power if no regulation were applied; but
- in cases where some segments of a nationally-defined market are in reality subject to vigorous competition, applying *ex ante* regulation of those segments is unnecessary, and could be damaging in certain cases.

A.252 On balance, the national approach is more consistent with the objectives of regulation defined in the Communications Act than the more disaggregated local approach. In the context of wholesale leased lines markets, the key competition issue that will be faced by Ofcom is likely to be ensuring that BT's competitors are supplied with the necessary wholesale inputs in order to enable them to compete with BT on something approaching an equal basis. A reliance on *ex post* regulation (such as there would be if Ofcom were to declare certain broad areas to be competitive in the knowledge that there were uncompetitive pockets within these areas) would not be an effective means of satisfying this goal.

A.253 Ofcom's proposal not to impose a requirement for geographic averaging, should largely mitigate the commercial impact on BT of (unnecessary) regulation of a competitive segment.

Conclusion on geographic markets

A.254 For the reasons set out above, Ofcom has concluded that it is appropriate to define the following geographic markets for each product group:

(v) Retail traditional interface leased lines: a national market (excluding the Hull area) on the basis of national buying patterns;

(vi) Low and high bandwidth TISBO: a national market on the basis that highly localised variations in competitive conditions would distort any sub-national market analysis;

(vii) AISBO: a national market on the basis that national pricing constraints appear to exist and that highly localised variations in competitive conditions would distort any sub-national market analysis; and

(viii) Trunk segments: a national market on the basis that national pricing constraints exist.

Issue 7: Kingston upon Hull area

A.255 Ofcom considers that the Hull area constitutes a separate market from the rest of the UK, for the reasons set out below (the text below being equally applicable in the cases of traditional and alternative interfaces).

A.256 For retail markets in the Hull area, a leased line should be regarded as a permanent connection providing capacity between two points in Kingston upon Hull (although this may be part of a leased line between a point in Kingston upon Hull and a point elsewhere in the UK). This can be used directly by a consumer or can form an input for the provision of other retail services.

A.257 As outlined above in paragraph A.219, Ofcom is of the view that the competitive conditions in the Hull area are significantly different from the rest of the UK..

A.258 Kingston Communications is by some way the largest provider of communications products and services in the Hull area and has a much wider network reach than any other communications provider *throughout* the Hull area and a very high market share in all telecommunications services.

A.259 On this basis, Ofcom has concluded that for retail traditional interface leased lines, the Hull area constitutes a separate geographic market to the rest of the UK.

Conclusion on retail geographic markets in the absence of regulation

A.260 Ofcom has taken the view that it is appropriate to define: (1) UK retail markets excluding the Hull area; and (2) retail markets for the Hull area. This conclusion has Been reached on the basis of the analysis set out above.

Retail geographic markets in the presence of upstream wholesale regulation, but no retail regulation

A.261 Defining retail markets in the presence of wholesale remedies is important since the existence of the upstream remedies may impact on the definition of retail markets and the subsequent SMP analysis and need for retail remedies.

A.262 In particular, the existence of wholesale regulation may have the effect of broadening a retail market defined in the absence of regulation.

A.263 The extent of demand-side substitution is not likely to depend on the terms of access to wholesale inputs. However, on the supply side, the availability of cost-based wholesale services strengthens the argument for defining national retail markets for leased lines. In this case, in response to a price rise by a hypothetical monopolist in one area, it is feasible that a communications provider supplying leased lines in other areas might shift resources into supplying retail leased lines in the area characterised by the prices which exceed the competitive level. This move would be feasible, in particular, in the presence of cost-based access to symmetric broadband origination.

A.264 This supply-side argument might also be applicable to the Hull area, which would have the effect of broadening the geographic retail market to cover the UK as a whole including Hull. This would be the case were it possible that suppliers of retail leased lines services outside the Hull area would move into supplying retail leased lines in the Hull area in response to a price rise by the hypothetical monopolist in Hull. A necessary condition for this type of supply-side substitution would be the availability of cost-based symmetric broadband origination in the Hull area. But, while a general access obligation is proposed, no regulated wholesale services currently exist.

A.265 However, although supply-side substitution may be feasible in terms of having cost based wholesale inputs available, other barriers to supply-side substitution may exist. Barriers to entry to the Hull area at the retail level are discussed in Annex B. In the Hull area, no communications provider has, to date, entered the market on a widespread basis, which supports the existence of such barriers.

A.266 The above arguments suggest that a national market definition including the Hull area is not appropriate. Consequently Ofcom’s conclusion that there are two geographic markets in the UK is not altered by consideration of the impact of its wholesale regulation, and remains as it is outlined above.

Conclusion on the relevant markets for retail leased lines in the presence of wholesale regulation and in absence of any retail regulation

A.267 Ofcom's analysis has defined the following markets:

- low bandwidth (up to and including 8Mbit/s) traditional interface retail leased lines (including analogue leased lines) in the UK apart from Kingston upon Hull;
- high bandwidth (above 8Mbit/s up to and including 155Mbit/s) traditional interface retail leased lines in the UK apart from Kingston upon Hull;
- very high bandwidth (above 155Mbit/s and above) traditional interface retail leased lines in the UK apart from Kingston upon Hull;
- low bandwidth (up to and including 8Mbit/s) traditional interface retail leased lines (including analogue leased lines) in the Kingston upon Hull area; and
- high bandwidth (above 8Mbit/s up to and including 155Mbit/s) traditional interface retail leased lines in the Kingston upon Hull area.
- alternative interface retail leased lines (at all bandwidths – in practice these are now offered at 10Mbit/s and above and are based on Ethernet) in the UK apart from Kingston upon Hull; and
- alternative interface retail leased lines (at all bandwidths) in the Kingston upon Hull area.

A.268 Ofcom has concluded that no change to these market definitions is required as a result of wholesale regulation.

A.269 The above list does not include markets, or parts of markets, that correspond to 8Mbit/s circuits or 622Mbit/s+ circuits, in relation to the Kingston upon Hull area. This is because these products are not currently offered in the Kingston area, meaning that any regulation relating to them would be disproportionate.

A.270 Although Ofcom has defined seven retail leased lines markets in paragraph A.267 above, the only two that it intends to identify for the purposes of section 79 of the Act are:

- low bandwidth (up to and including 8Mbit/s) traditional interface retail leased lines (including analogue leased lines) in the UK apart from Kingston upon Hull; and
- low bandwidth (up to and including 8Mbit/s) traditional interface retail leased lines (including analogue leased lines) in the Kingston upon Hull area.

Ofcom does not consider it necessary to identify (for the purposes of section 79 of the Act) retail markets covering traditional interface leased lines at bandwidths above 8Mbit/s and alternative interface leased lines as it considers that regulation at the wholesale level is sufficient to meet regulatory objectives in these areas.

Wholesale markets

Symmetric broadband origination and trunk conveyance markets

A.271 This section discusses the relevant wholesale market definitions in the light of the retail markets identified above.

A.272 Ofcom considers that a definition along the following lines is appropriate:

- a market for trunk segments;

- a market for low bandwidth traditional interface symmetric broadband origination up to and including 8Mbit/s;
- a market for high bandwidth traditional interface symmetric broadband origination above 8Mbit/s up to and including 155Mbit/s;
- a market for very high bandwidth traditional interface symmetric broadband origination over 155Mbit/s; and
- a market for alternative interface symmetric broadband origination.

A.273 Ofcom's reasoning is set out below.

Issue 8: wholesale trunk vs symmetric broadband origination

A.274 Ofcom has previously, in the context of both broadband and leased lines markets, identified distinct economic markets relating to core conveyance. The diagram in Chapter 2 illustrates the breakpoint between trunk segments and symmetric broadband origination that has been previously used by Ofcom. In the context of wholesale leased lines, Ofcom retains this distinction based on the criteria outlined below.

Demand-side analysis

A.275 On the demand side, trunk and symmetric broadband origination are complements: they cannot be demand-side substitutes since they relate to dedicated capacity provided across different elements of BT's network.

Supply-side analysis

A.276 On the supply side a hypothetical monopolist in the provision of either trunk segments or symmetric broadband origination would not be able to substitute into the other input without incurring the significant sunk costs (and amounts of time) required to build a distinct network.

A.277 Given the lack of demand and supply-side substitution described above, and the apparent absence of a common pricing constraint, trunk and symmetric broadband origination constitute distinct wholesale markets.

Location of the breakpoint between trunk and symmetric broadband origination

A.278 For the sake of clarity, the breakpoint between symmetric broadband origination and trunk segments is specified as BT's Tier 1 nodes, but the relevant markets include the equivalent on other communications providers' networks. The choice of Tier 1 as the breakpoint is based on evidence supplied to Ofcom by BT regarding the extent of other communications providers' networks. This evidence shows that a significant number of other communications providers have built their networks to within proximity to many of BT's Tier 1 nodes on BT's SDH network (see Annex B for details), whereas there is a relatively small amount of interconnection at other nodes. Handover therefore takes place, in the main, at Tier 1 nodes. Given the high sunk costs involved in extending a network to get closer to customer sites, Ofcom does not expect this situation to alter in the foreseeable future. This has led Ofcom to consider that BT's Tier 1 nodes provide the appropriate cut-off point. These nodes tend to be located at differing distances from customer sites, meaning that a market definition based on an average length of circuits would demonstrably fail to reflect actual market conditions.

Broadband conveyance vs. trunk segments

A.279 Ofcom's view is that there are distinct economic markets for broadband conveyance and leased lines trunk segments. Its rationale for this view, together with some clarification on the position of SDSL based services, is outlined below.

A.280 The distinguishing characteristic of services within the broadband conveyance, as opposed to trunk segments, market is that they offer a high degree of flexibility, using virtual paths, principally for contended services. In BT's case, the services that it offers in the broadband conveyance market are currently conveyed over its ATM network, via the DSLAM, although alternatives to ATM may be used on a widespread basis in future. Across BT's networks, trunk segments and broadband conveyance are in the main offered over the same underlying infrastructure, with a degree of extra investment having been made in order to run the ATM protocol in the case of broadband conveyance. ATM is currently used in the conveyance of ADSL and SDSL based services because it offers flexibility and allows, on a per user basis, virtual paths to be offered at low unit cost. The extra functionality offered by ATM would be less valuable in the case of "traditional" uncontended leased lines such as BT's *KiloStream* and *MegaStream* products because these services do not rely on shared capacity to the same extent as contended services.

A.281 Given the differences in flexibility/functionality described above it is Ofcom's view that the two types of conveyance (trunk segments and broadband conveyance) are not close substitutes from the perspective of a communications provider committed to providing a particular type of leased lines service e.g. contended leased lines using SDSL delivered via the DSLAM and uncontended leased lines using HDSL or SDSL.

A.282 However, as outlined at paragraphs A.319 to A.323 below, end to end SDSL (contended or uncontended) and traditional leased lines services are substitutable at the retail level, since uncontended SDSL based leased lines offer broadly the same functionality, and these are linked to contended lines based on a chain of substitution argument.

A.283 Retail leased lines are provided using one or both of trunk segments and symmetric broadband origination as inputs. Each of contended and uncontended services is associated with a particular form of conveyance - contended services will typically be offered across the ATM network, whereas uncontended services will typically be offered across the SDH network. As a result, any switching between broadband conveyance and trunk segments would also necessitate a switching of access delivery mechanism (i.e. contended or uncontended). This means that, at the margin, changes in the price of trunk segments or broadband conveyance might influence the choice of a supplier making a decision between purchasing wholesale inputs (both core and access) that would allow it to offer contended circuits (e.g. using SDSL) vs. wholesale inputs that would enable it to offer uncontended circuits (e.g. using HDSL). Were such switching to be widespread, there would be an argument for including the two types of service in the same economic market. However, having considered this issue, Ofcom's view is that such switching is unlikely to be widespread.

A.284 Increases in the price of trunk segments would be unlikely to be constrained by broadband conveyance (as an input into a contended leased lines based end-to-end solution) because of the current limited availability of leased lines provided via

SDSL (the majority of the current base of low bandwidth leased lines are offered over HDSL). This current limit to the availability of SDSL via DSLAMs, which may, to some extent be eroded over time, result from factors such as distance limitations and a dependence on the quality of copper pairs.

2.285 Increases in the price of broadband conveyance would not be constrained by trunk segments (as an input into a traditional leased lines based end-to-end solution) since the majority of broadband conveyance is used to provide asymmetric broadband Internet access. It seems unlikely for it to be feasible for a communications provider providing wholesale broadband conveyance to price discriminate between sales to communications providers offering retail symmetric services and sales to communications providers offering retail asymmetric services. Trunk segments would not provide a cost effective means of providing broadband conveyance for asymmetric services.

A.286 Ofcom has additionally considered the proportion of the total cost of providing an end to end leased line that is accounted for by trunk segments. The smaller this proportion is, the less likely that increases in the price of trunk segments will feed into increases in price of retail leased lines and the smaller the probability of switching from broadband conveyance to trunk segments. Ofcom has looked at a number of different indicators of this cost split. Any such measure is imperfect due to the extent of variety on a circuit by circuit basis, and the fact that any cost data supplied by BT will be influenced by allocation issues.

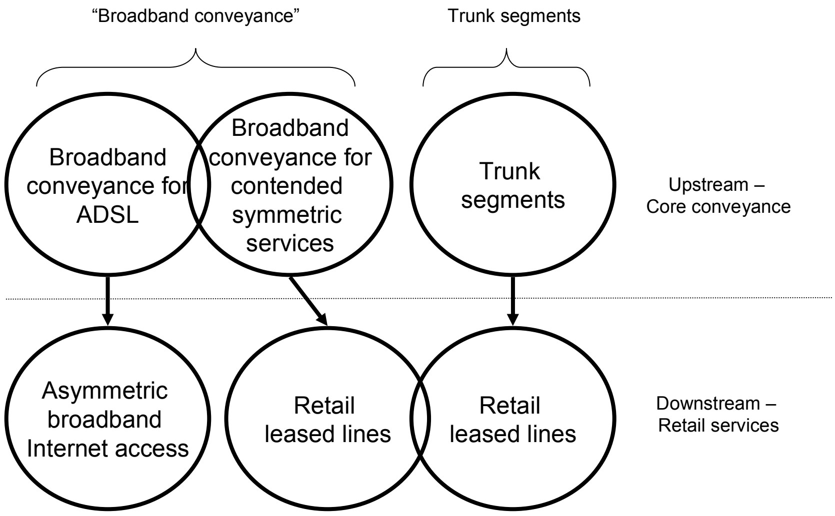
A.287 Ofcom has examined information supplied by BT providing a split between, in the context of its private circuits business in 2002/03, trunk segments and symmetric broadband origination. Ofcom examined four different measures in an attempt to approximate the underlying cost split, namely revenue, total distance in km, total cost (measured as the sum of operating cost and depreciation) and mean capital employed. None of these measures is a perfect measure, which suggests that considering a range of measures is desirable. Notably, the information on total cost and mean capital employed is influenced by BT's cost allocation methodologies, of which Ofcom does not have full visibility. The above caveats notwithstanding, information provided by BT suggests that, in the context of providing end-to-end leased lines, the cost of trunk segments appears to represent less than half of the total cost of providing end-to-end leased lines. Based on some measures, the proportion is significantly below one half. This consideration would limit the extent of switching if the price of trunk segments were to increase.

A.288 It is additionally worth noting that trunk segments are typically used as an input into retail applications such as end-to-end leased lines or VPNs. Offering these types of services means that a number of (e.g. retail) costs other than those of trunk segments and symmetric broadband origination must be incurred, meaning that the proportion of *total* costs accounted for by trunk segments is lower at the wholesale level.

A.289 Based on the above arguments, Ofcom's view is that demand side substitution between broadband conveyance and trunk segments is likely to be limited. Ofcom's view is that supply side substitution is not a relevant consideration in this context. This is because a hypothetical monopolist in the provision of broadband conveyance is likely to also be a supplier of trunk segments, and vice versa. This means that supply side substitution is unlikely to provide sufficient additional competitive constraints to justify broadening the market definition.

A.290 The implication of identifying distinct economic markets as has been done above is that the “core” network element of leased lines (e.g. contended leased lines offered over SDSL) that are conveyed by means of virtual paths (e.g. over ATM networks) fall within the broadband conveyance market that is analysed in Ofcom’s *Review of the Wholesale Broadband Access Markets* (see www.ofcom.org.uk/codes_guidelines/telecoms/netw_intercon_index/wholesalebroadbandreview/?a=87101). This is shown in the diagram below.

Figure A.2 – Core conveyance markets



A.291 In the light of this boundary between trunk and symmetric broadband origination, the following sections discuss the need for any narrower market definitions by bandwidth and geography.

Forward look

A.292 Ofcom has considered the likelihood of competitive or technical developments that might affect the markets identified during the period covered by this review. Ofcom’s view is that there are no developments that would affect these market definitions within a 2-3 year period. However, Ofcom will keep market conditions under review, in particular the continued relevance of the Tier 1 breakpoint as the most appropriate proxy available.

Issue 9: Trunk segments at different bandwidths

Product market for wholesale trunk segments in the absence of retail or wholesale regulation

A.293 Ofcom has additionally considered whether a distinction between trunk segments at different bandwidths is appropriate.

A.294 Ofcom does not consider it appropriate to define distinct markets for trunk segments at different bandwidths. This is because, unlike in the leased lines access market, in which the bandwidth of symmetric broadband origination is determined by the bandwidth of the relevant retail leased line, trunk segment traffic can be aggregated so that higher order systems can be used at the trunk level.

Product market for wholesale trunk segments in the presence of upstream wholesale regulation

A.295 Ofcom does not anticipate that its definition of the market for trunk segments will be affected by the presence of wholesale regulation of symmetric broadband origination. On the demand side, as noted above, trunk and symmetric broadband origination are complements rather than substitutes. Moreover Ofcom does not expect wholesale regulation of symmetric broadband origination to increase the effectiveness of supply-side substitution, since a communications provider would still incur substantial sunk costs in order to build a distinct network.

Issue 10: Geographic markets for wholesale trunk segments

Geographic markets for wholesale trunk segments in the absence of retail or wholesale regulation

The UK excluding Hull

A.296 Ofcom's analysis of the geographic markets for trunk segments can be found in paragraphs A.202 to A.254 above.

Kingston upon Hull area

A.297 In this case a separate market for the Hull area is not defined because the size of the area does not appear to warrant the functionality provided by trunk segments. The fact that an end-to-end leased line between two premises in the Hull area is provided using two symmetric broadband origination services illustrates this. Kingston has provided information confirming that essentially its end-to-end leased lines service is made up of two local ends.

Geographic markets for wholesale trunk segments in the presence of upstream wholesale regulation

A.298 Ofcom's geographic market definition spans the UK as a whole. Trunk segments are not relevant to the Hull area, since Kingston's network is small relative to BT's, and not organised in a hierarchical fashion. It is therefore clear that Ofcom's geographic market definition for trunk segments is not affected by the existence of wholesale regulation of symmetric broadband origination.

Conclusion on the relevant markets for wholesale trunk segments

A.299 Ofcom's analysis has identified the following market:

- trunk segments in the UK

A.300 Moreover this market definition is not expected to broaden in the presence of any regulation of symmetric broadband origination.

Forward look

A.301 Ofcom has considered the likelihood of competitive or technical developments that might affect the markets identified during the period covered by this review. Ofcom's view is that there are no developments that would affect these market definitions within a 2-3 year period. However, Ofcom will keep market conditions under review, in particular the continued relevance of the Tier 1 breakpoint as the most appropriate proxy available.

Issue 11: Definition of symmetric broadband origination product markets

A.302 As described earlier in this Annex, symmetric origination services provide symmetric capacity from a customer's premises to an appropriate point of aggregation, generally referred to as a node, in the network hierarchy.

Traditional interface symmetric broadband origination vs alternative interface symmetric broadband origination

A.303 As discussed in Chapter 1, symmetric broadband origination can itself be further subdivided between the traditional interface symmetric broadband origination ("TISBO") services such as wholesale terminating segments (PPCs), RBS and LLU backhaul and SDSL, and alternative interface symmetric broadband origination ("AISBO") services such as wholesale Ethernet-based leased lines.

A.304 Alternative interface circuits are often supplied over short distances by means of a single direct end-to-end fibre. However, other configurations are possible, as has been discussed by BT and some communications providers in their negotiations regarding the availability of a wholesale product enabling communications providers to replicate services such as BT's retail LES product line. In the light of its retail market analysis set out above, Ofcom considers it appropriate to define distinct markets for the access portion of end to end circuits delivered using Ethernet-based technology.

A.305 AISBO services can be identified by the following distinguishing features, discussed in more detail in "Issue 3: Retail leased lines vs retail alternative interface circuits" above:
- end user applications; and
- distance constraints.

A.306 The AISBO market would potentially include wholesale equivalents of end to end alternative interface circuits (currently constrained to distances up to 35km although this may change over time and as noted above this is not the defining feature of this market), as well as the access segments of longer end to end circuits, delivered using Ethernet-based technology.

A.307 Ofcom's substitution analysis carried out in respect of the equivalent retail markets (see Issue 3 above) translates through to the corresponding wholesale markets, since there is a derived demand for the wholesale services.

A.308 Even with the availability of a cost based TISBO/AISBO input, the pricing of a hypothetical monopolist supplier of either TISBO or AISBO services would not be constrained by the availability of the other service.

A.309 Given the technical differences between AISBO and TISBO, the two are likely not to be cost effective substitutes for one another in the majority of cases.

A.310 Ofcom has considered whether supply side substitutability at the retail level would lead to a widening of the existing market definition to include both SDH-based and Ethernet-based circuits. Such supply side substitutability would exist if, in the absence of wholesale regulation, the suppliers of alternative interface circuits were able to provide SDH-based circuits at low cost and within a relatively short period of time. However, since the majority, if not all, of the suppliers of alternative interface circuits already supply SDH-based circuits (and *vice versa*), alternative interface suppliers would not place any additional constraints on a hypothetical monopolist supplier of SDH-based circuits (and *vice versa*).

A.311 Ofcom considers that the same reasoning applies to supply side substitution at the wholesale level as the demand for wholesale products is derived from the demand for the retail products. Ofcom does not, therefore, consider that supply side substitution would lead to a widening of the TISBO market to include AISBO.

Contended and uncontended traditional interface symmetric broadband origination services are in the same market

A.312 Ofcom is aware that if a forward looking approach is taken, contended and uncontended TISBO services are available although contended TISBO is not currently present on a significant scale.

A.313 There appears to be a strong case for arguing that a chain of substitution exists between uncontended and contended TISBO services. On the demand side, many end-user applications (e.g. VPNs) may use but do not always require an uncontended link. Therefore if contended services were available and there was a small but significant, non-transitory increase in the price of uncontended services, it is reasonable to assume that a sufficient number of customers would switch to a contended service. This is especially true given that there is a continuum of contention levels. As an example the DataStream symmetric service offered by BT is capable of being configured by the customer for any level of contention (including 1, i.e. uncontended). From this demand-side substitution analysis, there appears to be strong evidence that contended and uncontended TISBO services are in the same market.

A.314 On the supply side, it would be reasonably easy for a supplier to switch between offering contended and uncontended services as there appears to be no major cost or barrier to doing so. This is because the main difference between contended and uncontended services is the ratio of end-user access connections to core network bandwidth and this ratio is easily controllable by the suppliers. As a result a supplier of uncontended services can easily switch into providing contended services and vice-versa. To the extent that there are different suppliers of contended and uncontended TISBO, supply-side substitution is present.

A.315 This is why the product market for TISBO covers the following uncontended and contended services:

- terminating segments, forming all or part of partial private circuits (PPCs) when supplied by BT to another communications provider and terminating segments (equivalent to those that BT would provide as part of a PPC) supplied by communications providers to themselves or to other communications providers;
- local loop unbundling (LLU) backhaul services;
- radio base station (RBS) backhaul circuits; and
- contended services using SDSL technology

Conclusion on RBS backhaul

A.316 In relation to RBS backhaul, Ofcom notes first that RBS backhaul circuits, which as described in Chapter 1 are wholesale inputs required for the provision of retail mobile telephony services, are technically equivalent to PPCs. A communications provider could provide to a mobile communications provider the same RBS backhaul circuit as BT by using a PPC. A radio base station can be viewed as equivalent to an end user's premises, with traffic being carried to the appropriate point of interconnection between the communications provider's and the mobile communications provider's networks. Because they are technically equivalent, these services are essentially the same product and ought therefore to be part of the same relevant product market, however they are labelled.

A.317 Notwithstanding this, Ofcom has carried out a substitution analysis assuming that the products are different. If a hypothetical monopoly provider of RBS backhaul circuits were to raise its prices by 5-10% above the competitive level, customers of RBS backhaul circuits would have the option of switching away from these RBS backhaul services in favour of PPCs, possibly including a trunk segment. In addition, because they are technically equivalent, the costs of RBS backhaul circuits and PPCs are not expected to be significantly different and their prices at the competitive level are likely to be the same or close. If a hypothetical monopolist of RBS backhaul circuits were to raise its price by 5 to 10% above the competitive level, the customers of these circuits would find it attractive to switch to PPCs priced at a competitive level. In a competitive environment, a supplier of PPCs is unlikely to refuse to supply a PPC for the purpose of linking a radio base station to the mobile switch. This means that RBS backhaul circuits and PPCs are viewed as substitutes by consumers and are therefore in the same relevant wholesale market.

A.318 The conclusion of Ofcom's analysis is that in a competitive environment with prices set at the competitive level for both products and no restrictions on eligibility, demand-side substitution between RBS backhaul circuits and PPCs is likely in response to a SSNIP. Ofcom has therefore concluded that RBS backhaul is a symmetric broadband origination service and that it should be included within the TISBO market. The core conveyance element of an RBS backhaul circuit is included in the trunk segments market.

Conclusion on SDSL

A.319 In relation to SDSL, Ofcom notes that uncontended SDSL-based services can be used to provide the same functionality as a terminating segment, that is, dedicated transmission capacity up to a maximum of 8Mbit/s. Thus, uncontended SDSL-based services are in the same market as low bandwidth terminating segments.

A.320 Although SDSL services may not be able to offer the same service levels as other symmetric broadband origination products, they are generally cheaper. As such, for a certain class of end user that does not require such high levels of service, they offer a cheaper alternative. Applying the hypothetical monopolist test, price increase of 5%-10% would lead such an end user to consider another symmetric broadband origination product. A similar price increase for the other symmetric broadband origination products would be likely to lead some end users to consider switching to uncontended SDSL products. It would be inappropriate for Ofcom to specify a contention threshold to separate contended and uncontended SDSL services into two markets. SDSL products therefore fall within the TISBO market.

A.321 Ofcom's view is that the inclusion of SDSL based services within the wholesale broadband access market, as has been suggested by some communications providers, would not accurately reflect the distinct characteristics of SDSL based services, and the competitive conditions surrounding its provision. The symmetric nature of SDSL-based products is key. For the foreseeable future the product is likely to be largely aimed at the business market. Ofcom's view is that the differences in functionality and cost orientated prices of ADSL and SDSL based services is such that the two are unlikely to be substitutable.

A.322 Ofcom remains of the view that SDSL-based circuits are sufficiently substitutable for them to be viewed as being in the same economic market as SDH-based services. Its rationale is outlined in its discussion of the distinction between the markets for broadband conveyance and trunk segments. The current limited availability of SDSL, together with its lower "quality" levels, as outlined by some communications providers, is such that it may not constrain the price of the established SDH based leased lines. However, Ofcom's view is that the functional similarities of SDSL and SDH-based circuits (the ability to provide dedicated, symmetric, origination) is such that the price of the former is likely to constrain that of the latter to a sufficient degree that the two can be viewed as demand side substitutes and as such to be in the same economic market

A.323 Ofcom therefore concludes that SDSL is a symmetric broadband origination service and that it should be included within the TISBO market.

Conclusion on LLU backhaul

A.324 LLU backhaul consists of LLU backhaul trunk and LLU backhaul link. LLU backhaul trunk is similar to the trunk segment of a leased line and is hence a substitute for trunk segments. This is why Ofcom considers that LLU backhaul trunk is part of the wholesale trunk market.

A.325 Ofcom is of the view that the issue of LLU backhaul links can be addressed in two different ways. The first involves carrying out a demand- and supply-side substitution analysis. This analysis suggests that SDH-based and Ethernet-based LLU backhaul links are not demand-side substitutes for TISBO and AISBO respectively because they do not include a local end. Similarly either TISBO or AISBO are not demand-side substitute for LLU backhaul links because they offer a local end that is not needed and that has to be paid for. Supply side substitution analysis does not modify the conclusion of absence of substitution. This first approach leads to the conclusion that SDH-based LLU backhaul links should be in a separate relevant market to TISBO. Similarly, Ethernet-based LLU backhaul links should be in a separate market to AISBO.

A.326 The second approach relies on the similarity of competitive conditions between SDH-based LLU backhaul links and TISBO on the one hand, and between Ethernet-based LLU backhaul links and AISBO on the other hand. The similarity arises because the same technology is involved for providing transparent transmission technology between an operator's POC and a point in the local access network (one further than the other one). This similarity means that the same type of entry barriers and economies of scale and scope are faced, especially those relating to digging and ducting. Ofcom further notes that competitive conditions for SDH-based LLU backhaul links and TISBO vary by bandwidth category (low/high/very high) whereas those for Ethernet-based LLU backhaul links and AISBO do not.

A.327 Although the first approach has the attraction of addressing the fact that LLU backhaul can be used to supply both symmetric and asymmetric broadband services, Ofcom believes that the practical considerations should be given more weight. LLU backhaul links should be regarded as a symmetric broadband origination service and should therefore be included within the TISBO or AISBO markets, depending on the technology in use - bandwidth considerations being taken into account in the case of the SDH technology.

A.328 Ofcom's further analysis concerning LLU backhaul leads it to conclude that:
- LLU backhaul trunk segments are in the wholesale trunk segment market;
- SDH-based LLU backhaul links at bandwidths up to 8Mbit/s are part of the low-bandwidth TISBO market;
- SDH-based LLU backhaul links at bandwidths above 8Mbit/s up to and including 155Mbit/s are part of the high bandwidth TISBO market;
- SDH-based LLU backhaul links at bandwidths above 155Mbit/s are part of the very high-bandwidth TISBO market;
- Ethernet-based LLU backhaul links are part of the AISBO market.

Forward look – symmetric broadband origination product markets

A.329 Ofcom has considered the likelihood of competitive or technical developments that might affect the markets identified during the period covered by this review. Ofcom's view is that there are no developments that would affect these market definitions within a 2-3 year period. This is because the competitive conditions in the market mainly result from the existence of high barriers to entry, such as high sunk costs, economies of scale and of scope, that Ofcom does not anticipate to diminish. However, Ofcom will keep market conditions under review.

Justification for definition of wholesale symmetric broadband origination market against the requirements in the Commission's Recommendation

A.330 As noted above, the definition of a symmetric broadband origination market differs from the Commission's Recommendation on markets, which discusses only a narrower market for wholesale terminating segments of leased lines (although the Recommendation does allow for segmentation by bandwidth), rather than two separate markets for alternative interface and traditional interface terminating segments. As a consequence, Ofcom is required to justify the departure specifically against the three criteria set out in the Recommendation, namely:

1. barriers to entry and the development of competition;
2. 'dynamic aspects' i.e. whether the market is dynamically moving towards effective competition with new entrants and increased innovation; and
3. the relative efficiency of competition law.

A.331 Before looking specifically at the three criteria in turn, Ofcom is minded to clarify in more general terms why it considers it appropriate to depart somewhat from the Commission's recommendation by defining distinct AISBO and TISBO markets. Firstly, Ofcom wants to ensure that the remedies do not discriminate unduly between the technologies used to provide retail leased lines. Secondly, Ofcom wishes to include all other wholesale services (that is, services sold to communications providers) that are technologically equivalent substitutes or that should not be considered as part of a separate market for pragmatic reasons.

1. Barriers to entry and the development of competition

A.332 Symmetric broadband origination covers symmetric transparent transmission capacity from a customer's premises to an appropriate point of aggregation. This functionality is supplied by using the same network components and technologies as the more specific wholesale terminating segments of leased lines. These network components, especially the local access (and to a lesser extent the main link) network, are characterised by high barriers to entry. These barriers to entry are of a structural type and arise because of high sunk costs, and large economies of scale and of scope. In particular the digging and ducting required by SBO services are very expensive and are at the source of these features.

A.333 The existence of high entry barriers, especially the high sunk costs, creates asymmetric conditions between the incumbent and entrants to the market, impeding or restricting the entry of the latter. Entrants will not be in a position to compete at the wholesale level until they have sunk a significant percentage of their costs.

A.334 Even if entry would intensify over the period covered by the review, Ofcom is of the view that the ubiquity advantage of the incumbent is unlikely to be sufficiently eroded as a result of that entry.

2. Dynamic aspects

A.335 Ofcom does not anticipate that the high barriers to entry mentioned above will be significantly reduced in the coming two to three years through market dynamism. This is because the barriers to entry inherent in the widespread deployment of access networks are very high. There is no evidence to suggest that technological progress will generate a commercially acceptable alternative enabling entrants to provide SBO without needing an access (and link) network similar to that of the incumbent..

3. Relative efficiency of competition law

A.336 The relative efficiency of competition law is discussed in detail in Chapter 4.

Issue 12: Bandwidth distinctions for traditional interface symmetric broadband origination

A.337 Ofcom has concluded that the separate markets by bandwidth at the retail level, defined on the demand side, also apply to traditional interface symmetric broadband origination ("TISBO"). Ofcom's analysis of demand-side substitution in retail markets for end-to-end leased lines is, in many cases, applicable to the market for wholesale TISBO.

A.338 In particular, Ofcom considers that the arguments outlined in its retail market definition concerning bandwidth distinctions all read across directly into TISBO markets. This is because TISBO is a derived demand, reflecting retail demands, and the bandwidth of the origination circuit is determined by the bandwidth of the retail leased line (unlike trunk segments).

A.339 Therefore, as described above, Ofcom is of the view that (on the demand side) there is a chain of substitution (multiples of lower bandwidth circuits constraining the price of higher bandwidth circuits) that links:

- TISBO segments at speeds up to and including 8Mbit/s;

- TISBO segments at speeds between 34Mbit/s and 155Mbit/s; and
- TISBO segments at 622Mbit/s and above.

Supply side analysis

A.340 The relevant question here is whether the definition on the demand side can be broadened by supply side substitution. Specifically, the question is whether a supplier of 8Mbit/s (or lower) TISBO services would enter the market for 34Mbit/s TISBO services in response to a significant price increase by a hypothetical monopolist supplier. However, Ofcom considers that the likelihood that a communications provider may already be serving the premises is very low, due to the relatively low penetration of these services (there are currently only a small number of thousands of these circuits in the UK). A communications provider would therefore be likely to need to incur the significant and sunk costs of network build, including digging and ducting. Supply side substitution (i.e. quick, inexpensive entry) is therefore not feasible on a scale sufficient to constrain the prices of a hypothetical monopolist.

A.341 In addition, for supply-side substitution between bandwidths to be present there would need to be communications providers that supplied, for example, TISBO segments at high bandwidths but not at low bandwidths, but would enter the supply of low bandwidth if the price of high bandwidth were to rise. However, as for retail leased lines, the biggest communications providers already provide both low and high bandwidth segments, so there is little or no additional competitive constraint beyond that already captured in the demand-side market definition, and supply side substitution is not relevant.

A.342 Therefore, Ofcom believes that supply-side substitution on this basis is so limited that it does not represent an effective constraint and, as such, does not justify the inclusion of high (defined as 34Mbit/s and above) and low (defined as 8Mbit/s and below) bandwidth TISBO services in the same market.

A.343 Ofcom does not consider that supply-side substitution exists to justify the inclusion of very high (defined as 622Mbit/s and above) bandwidth TISBO services in the same market as those of lower bandwidths. This is because of the sunk costs that communications providers would need to incur, and in particular the degree of overlap between the existing suppliers of high and very high bandwidth TISBO.

The market for wholesale TISBO in the presence of upstream wholesale regulation

A.344 As described in Chapter 2, TISBO services are the ’furthest upstream’ of the various retail and wholesale products considered in this review. It is therefore only necessary to consider the (product and geographic) market definition for TISBO services once, regardless of any regulation imposed on any other leased lines product, since Ofcom has not reviewed any of the possible markets that are further upstream than TISBO.

Issue 13: Bandwidth distinctions for alternative interface symmetric broadband origination

A.345 Ofcom has carried out a substitution analysis to determine whether the bandwidth distinctions identified in the retail leased lines and TISBO services markets apply equally to the AISBO market.

A.346 The costs of provision of Ethernet-based circuits do not vary significantly by bandwidth. This is because the costs of duct and fibre, which are generally variant with bandwidth, form a very high proportion of the total cost of provision, even at higher bandwidths. This is supported by confidential information submitted by communications providers during the first consultation period. This information suggested that there is very little difference in the one-off capital expenditure required to provide a 1Gbit/s product over and above a 10Mbit/s product as the main cost difference is down to the cost of the network terminating equipment (NTE). The relative cost difference between the NTEs for the two products is approximately £1,000, which equates to around 10 metres of dig (when a proxy of £100/metre is used) and dig forms the main cost element of providing an alternative interface circuit. It is therefore not appropriate to define distinct markets according to bandwidth, as has been done in other leased lines markets, because the higher bandwidth AISBO circuits do competitively constrain the prices of lower bandwidth AISBO circuits.

A.347 Ofcom recognises that different equipment may be required to provide very high bandwidth AISBO circuits but remains of the view that this factor is insufficient to justify defining distinct markets split by bandwidth. Information supplied to Ofcom by competing communications providers suggests that (with the exception of the more costly and expensive WDM based services), bandwidth-variant equipment costs will typically account for less than 10% of a competing operator's initial capital expenditure in offering an AISBO circuit. This means that if differences in the prices of AISBO circuits at different bandwidths reflected only differences in incremental capital expenditure, all prices would, as described above, be very close together.

A.348 Ofcom therefore remains of the view that defining a single national market is appropriate. As outlined in Chapter 3 and Annex B, BT's share of the AISBO market appears to be above 50% at all bandwidths, so even if Ofcom were to define distinct economic markets by bandwidths, which it does not consider it appropriate to do, it seems very likely that it would find BT dominant in each of them.

Conclusion on bandwidth distinctions for alternative interface symmetric broadband origination

A.349 Ofcom has therefore concluded, on the basis of demand and supply side substitution, that there are no identifiable bandwidth distinctions in the AISBO market, and that there is therefore only one market for AISBO services.

Issue 14: Wave Division Multiplexed services

A.350 BT offers a number of retail products (the *WaveStream* product set) which are characterised by use of WDM in the access segment. WDM services are services that can be used to provide transmission of multiple wavelengths of light over short or long distances using wave division multiplexers. At present, there are three broad types of wave division multiplexers available, Coarse Wave Division Multiplexer (CWDM), Dense Wave Division Multiplexer (DWDM) and Ultra Dense Wave Division Multiplexer (UDWDM).

A.351 CWDM uses lower frequency lasers and a wide spread of frequencies to enable transmission of up to 18 wavelengths over distances up to 60km. DWDM uses higher frequency lasers and a lower range of frequencies in order to enable transmission of up to 32 to 128 wavelengths nation-wide. CWDM is therefore cheaper and more cost effective for certain applications where fewer wavelengths and/or smaller transmission distance is needed. UDWDM, meanwhile, uses high frequency lasers and a very narrow spread of frequencies to carry a greater number of wavelengths.

A.352 The use of WDM is well established within core networks. However, its use in communications providers' access networks to offer products such as BT's WaveStream range is a relatively new innovation.

A.353 The distinguishing characteristics of WDM when used as an access technology are as follows:

- WDM based access circuits are mainly used for emerging very high bandwidth requirements such as data warehousing, and Storage Area Networking (SAN) applications;
- WDM (currently) uniquely, supports multiple delivery of different interfaces as the service is transparent to what technology each wavelength provides. Each wavelength can be used to supply SDH, Ethernet, or other protocols such as Fibre Connection (FICON) or Enterprise Systems Connection (ESCON).
- WDM based access can provide a combination of Metropolitan area ring and longer haul city-to-city connectivity to meet resilience requirements between sites such as data centres and head offices;
- above 1.25Gbit/s per second, bandwidth is not a significant cost driver for WDM based circuits (it remains a significant cost driver for SDH circuits of all bandwidths), due to the ability to add extra wavelengths/bandwidth at low cost; and;
- as an access technology WDM remains very expensive relative to other technologies, although this need not be true on a per Mbit/s basis, and the incremental cost of providing additional wavelengths is likely to be relatively small.

Ofcom's conclusions

A.354 WDM is a technology used by communications providers to supply various types of circuits, and is not itself bought as a standalone product. It can be used as an input to provide a number of products in retail leased lines markets, including:

(a) SDH over WDM over fibre;
(b) Ethernet over WDM over fibre; and
(c) other protocols over WDM over fibre, for example:
  - fibre channel;
  - FICON; and
  - ESCON.

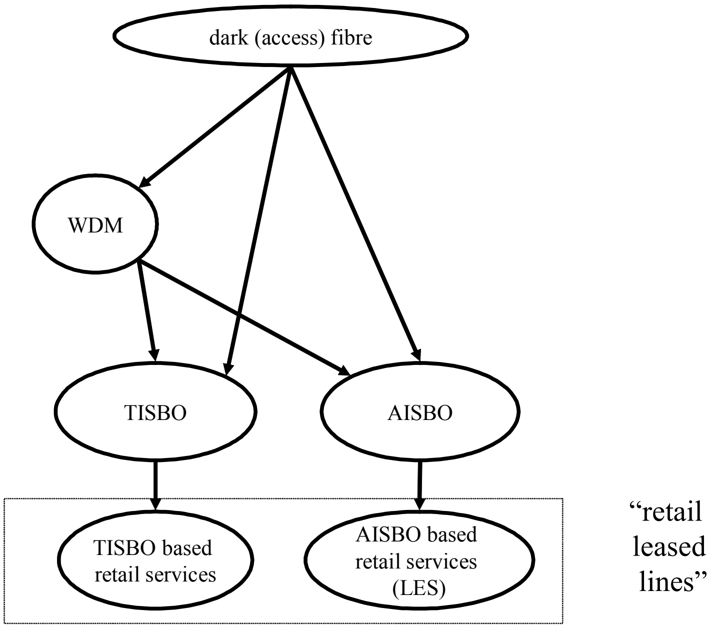
A.355 Ofcom's view is that it is clear that the most appropriate way to characterise retail products such as (a) to (c) above is to view them as being in the same market as equivalent end user applications delivered over fibre, rather than a separate market of applications delivered over WDM over fibre. This approach focuses on the characteristics of the retail product, not the technology used to deliver it and so is technologically neutral.

A.356 For example, based on a demand side substitution argument, all products which offer Ethernet-presented dedicated transmission capacity are likely to be in the same retail market, whether they are delivered over WDM over fibre (e.g. BT's

WaveStream product range) or directly over fibre (e.g. BT's *Short haul data services (SHDS)* product range).

A.357 The WDM element of the service is therefore an *upstream* characteristic of the products described above. It can be used as an input into different products that are in distinct (downstream) economic markets – see Figure A.3 below.

Figure A.3 – Leased lines markets



A.358 Based on these findings, Ofcom does not propose to conduct a review of the WDM market as it falls outside the scope of the European Commission's market set, in the same way as no review will be conducted of any other input markets into TISBO or AISBO that may exist, such as access fibre.

A.359 Consequently, the presence of wholesale regulation by means of PPCs would not influence the conclusions of the analysis carried out in the absence of any regulation. WDM remains an upstream input into a range of wholesale and retail services regardless of any regulation imposed on its provision.

Issue 15: Wholesale symmetric broadband origination geographic markets

Geographic markets for wholesale symmetric broadband origination in the absence of retail or wholesale regulation

The UK

A.360 Ofcom's assessment of geographic markets can be found in paragraphs A.202 to A.254 above.

Kingston upon Hull area

A.361 On the demand side, in response to an increase in the price above the competitive level in the Hull area, it seems clear that wholesale symmetric broadband origination services outside the Hull area would not be perceived as substitutes.

A.362 On the supply side, the relevant consideration is whether a firm without a fixed local access network in the Hull area could enter the market and develop its own network in order to provide wholesale leased line services. A communications provider would need to incur significant fixed costs to develop a local network relative to the likely gains in terms of demand for wholesale leased lines services in the Hull area. Given that a large proportion of these costs are likely to be sunk and that the process of installing infrastructure is time-consuming, supply-side substitution is unlikely to be possible within the timescale relevant to the hypothetical monopolist test. The possibility of new entry is reflected in the analysis of SMP.

A.363 Demand and supply-side factors point to the conclusion that there are distinct symmetric broadband origination markets for the Hull area. An additional, key, factor is that supply conditions in Hull are different from the rest of the UK. In addition, unlike other areas within the UK, in this case it is feasible and practical to clearly define the boundaries of the market.

A.364 Since the purpose of the market definition exercise is to facilitate an assessment of whether communications providers possess market power it seems appropriate to define a national market (excluding the Hull area). Moreover it seems clear that defining markets for the Hull area is useful given Kingston’s position as the sole supplier of wholesale leased lines services in the area. This facilitates an assessment of exactly what factors constrain the ability of Kingston to raise prices in the Hull area.

Geographic markets for symmetric broadband origination in the presence of wholesale regulation

A.365 As described in Chapter 2, symmetric broadband origination products are the furthest upstream of the various retail and wholesale products considered in this review. It is therefore only necessary to consider the (product and geographic) market definition for symmetric broadband origination once, regardless of any regulation imposed on any other leased lines product.

Conclusion on market definition

A.366 In summary, Ofcom has defined the following leased line product markets in the UK excluding Kingston upon Hull:

- retail low bandwidth traditional interface leased lines (up to and including 8Mbit/s) – this includes analogue circuits of relevant bandwidths, and incorporates the minimum set of retail leased lines of 64kbit/s and 2Mbit/s identified by the Commission;
- retail high bandwidth traditional interface leased lines (above 8Mbit/s up to and including 155Mbit/s);
- retail very high bandwidth traditional interface leased lines (above 155Mbit/s);
- retail alternative interface leased lines (at all bandwidths);
- wholesale low bandwidth traditional interface symmetric broadband origination (up to and including 8Mbit/s);

- wholesale high bandwidth traditional interface symmetric broadband origination (above 8Mbit/s up to and including 155Mbit/s);
- wholesale very high bandwidth traditional interface symmetric broadband origination (above 155Mbit/s);
- wholesale alternative interface symmetric broadband origination; and
- wholesale trunk segments (note that this market extends to the whole of the UK).

A.367 In addition, Ofcom has defined the following leased line product markets in the Hull area:

- retail low bandwidth traditional interface leased lines (up to and including 8Mbit/s) – this incorporates the minimum set of retail leased lines of 64kbit/s and 2Mbit/s identified by the Commission;
- retail high bandwidth traditional interface leased lines (above 8Mbit/s up to and including 155Mbit/s);
- retail alternative interface leased lines (at all bandwidths);
- wholesale low bandwidth traditional interface symmetric broadband origination (up to and including 8Mbit/s);
- wholesale high bandwidth traditional interface symmetric broadband origination (above 8Mbit/s up to and including 155Mbit/s); and
- wholesale alternative interface symmetric broadband origination.

A.368 In Annex B, Ofcom sets out its analysis of SMP in the wholesale markets identified above, and in the retail low bandwidth leased lines market which contains the minimum set of retail leased lines identified by the Commission. Ofcom is not conducting an assessment of SMP in other retail markets, preferring instead to regulate at the wholesale level where possible, in line with the Commission's Recommendation.

Annex B

Assessment of significant market power

B.1 Under the new Directives, SMP has been redefined so that it is equivalent to the competition law concept of dominance. The Framework Directive and the Commission's SMP Guidelines state that a market shall be deemed effectively competitive if no communications provider in that market has SMP.

B.2 Article 14 of the Framework Directive states:

"An undertaking shall be deemed to have significant market power if, either individually or jointly with others, it enjoys a position equivalent to dominance, that is to say a position of economic strength affording it the power to behave to an appreciable extent independently of competitors, customers and ultimately consumers."

B.3 SMP may be held by only one company in the market (single dominance) or by more than one company (collective dominance). This assessment focuses on single dominance as Ofcom does not consider that SMP is held by more than one company in any of the UK leased lines markets (for example, overall in sales of retail traditional interface leased lines (sum of low to very high bandwidths), no communications provider other than BT has a share as high as 10%). As a consequence, none of the criteria to assess collective dominance will be reviewed in this analysis.

B.4 Market share is an important factor in the assessment of SMP. The Competition Act guideline *The Chapter II prohibition*[3]states that:

"The European Court has stated that dominance can be presumed in the absence of evidence to the contrary if an undertaking has a market share persistently above 50 percent[4]. The Director General considers it unlikely that an undertaking will be individually dominant if its market share is below 40 per cent, although dominance could be established below that figure if other relevant factors (such as the weak position of competitors in that market) provided strong evidence of dominance."

B.5 Given the equivalence between SMP and dominance, Ofcom will apply these guiding principles in the following consideration of SMP.

B.6 Where possible, Ofcom has considered market shares by revenue (value) as well as by volume. This is because revenue shares capture the effects of any premiums above competitors that communications providers are able to charge. However, a higher share by revenue is not necessarily indicative of market power – it could be due to compositional effects: for example, the supply of more costly services than competitors would also be consistent with a higher market share by revenue than volume.

B.7 Market share alone does not determine whether a firm has SMP, although it is an important criterion. It is therefore important to consider market shares over time,

---

[3] See http://www.oft.gov.uk/NR/rdonlyres/0620258B-3006-4B1C-ADC6-5CC69E6EF4F1/0/oft402.pdf

[4] Case C62/86, *AKZO Chemie BV v Commission* [1993] 5 CMLR 215.

the size of other suppliers and the other SMP criteria outlined in the Commission's SMP Guidelines, including barriers to entry and growth.

B.8 In assessing whether SMP exists, the following review takes account of the EC and Oftel guidelines described in Chapter 1. The EC guidelines set out criteria for the assessment of single dominance. These were reproduced in Oftel's guidelines, which also set out a number of additional criteria.

B.9 In the sections that follow, the retail and wholesale markets are reviewed against these criteria. This discussion considers the markets in the UK excluding the Hull area, followed by (where applicable) the markets in the Hull area, for:

- low bandwidth traditional interface retail leased lines;
- wholesale trunk;
- wholesale low bandwidth traditional interface symmetric broadband origination;
- wholesale high bandwidth traditional interface symmetric broadband origination;
- wholesale very high bandwidth traditional interface symmetric broadband origination; and
- wholesale alternative interface symmetric broadband origination.

B.10 The single dominance criteria set out by the Commission and by Oftel are all reviewed for each market in turn. If the criterion is viewed as relevant, evidence is provided. If the criterion is not viewed as relevant for the SMP assessment, an explanation is provided.

B.11 The criteria have been grouped by theme:

- specificity of the firm: its technology and its production process, its marketing and its strategies;
- customers' role;
- market entry;
- intensity of competition (remaining aspects);
- quantitative information concerning market share, excess pricing and profitability; and
- international benchmarking.

B.12 Evidence was gathered in various ways. Questions were added to Oftel's quarterly omnibus surveys of small and medium enterprises. A common questionnaire followed up by a meeting was used several times to obtain information from large business users and communications providers. Specially drafted letters were sent to seek information on specific issues. In addition, Ofcom has made use of statistics collected by itself and Oftel as part of general data gathering functions, and has drawn on internal expertise, especially for technical aspects of the discussion.

The relationship between the market reviews and Competition Act 1998 and Enterprise Act 2002 investigations

B.13 The economic analysis carried out in this document is for the purposes of determining whether an undertaking or undertakings have SMP in relation to this market review. It is without prejudice to any economic analysis that may be carried out in relation to any investigation or decision pursuant to the Competition Act 1998 (relating to the application of the Chapter I or II prohibitions or Article 81 or 82 of the EC Treaty) or the Enterprise Act 2002.

B.14 The fact that economic analysis carried out for a market review is without prejudice to future competition law investigations and decisions is recognised in Article 15(1) of the Framework Directive which provides that:

"…The recommendation shall identify …markets …the characteristics of which may be such as to justify the imposition of regulatory obligations …without prejudice to markets that may be defined in specific cases under competition law…"

B.15 This intention is further evidenced in the European Commission's SMP guidelines, which state:

Paragraph 25: "… Article 15(1) of the Framework Directive makes clear that the market to be defined by NRAs for the purpose of ex ante regulation are without prejudice to those defined by NCAs and by the Commission in the exercise of their respective powers under competition law in specific cases." (This is repeated in paragraph 37.)

Paragraph 27: "…Although NRAs and competition authorities, when examining the same issues in the same circumstances and with the same objectives, should in principle reach the same conclusions, it cannot be excluded that, given the differences outlined above, and in particular the broader focus of the NRAs' assessment, markets defined for the purposes of competition law and markets defined for the purpose of sector-specific regulation may not always be identical".

Paragraph 28: "…market definitions under the new regulatory framework, even in similar areas, may in some cases, be different from those markets defined by competition authorities."

B.16 In addition, it is up to all communications providers to ensure that they comply with their legal obligations under all the laws applicable to the carrying out of their businesses. It is incumbent upon all communications providers to keep abreast of changes in the markets in which they operate, and in their position in such markets, which may result in legal obligations under the Competition Act 1998 (relating to the application of the Chapter I or II prohibitions or Article 81 or 82 of the EC Treaty) or Enterprise Act 2002 applying to their conduct.

Low bandwidth traditional interface retail leased lines for the UK apart from Kingston upon Hull

B.17 Using the criteria listed above, Ofcom has undertaken an analysis of SMP in the market for retail low bandwidth traditional interface leased lines. As explained in Chapter 2, Ofcom will assess the existence of SMP in this market in the context of the remedies proposed in the markets for traditional interface symmetric broadband origination ("TISBO") and trunk segments, in particular PPCs at cost oriented charges, a prohibition on vertical discrimination and cost orientation for trunk segments. This analysis assumes an absence of regulation at the retail level, since the purpose is to contribute to the assessment of whether and what retail regulation is appropriate.

B.18 The analysis starts by looking at quantitative information and then goes on to review the other SMP criteria.

Low bandwidth traditional interface retail: summary of conclusions

B.19 Ofcom's findings lead it to expect that the introduction of remedies at the wholesale level will significantly weaken BT's SMP.

B.20 However, since the remedies proposed at the wholesale level are new or relatively new, Ofcom does not expect that they will remove BT's SMP within the timeframe of the market review, i.e. between two and three years. BT's persistently high market share provides evidence of SMP. Further evidence supporting Ofcom's conclusion that BT has SMP is provided by the following criteria: barriers to switching and expansion and, to a lesser extent, economies of scale and of scope, profitability and pricing, and vertical integration.

Low bandwidth traditional interface retail: quantitative information criteria

Market shares

B.21 Market shares can be expressed in terms of revenues or of volumes. Although both are relevant, revenue figures take into account that products can be differentiated. The EC Guidelines explicitly mention leased lines as a product for which revenue market share is likely to be useful because leased lines can be differentiated in various ways.

B.22 Paragraph 77 of the Guidelines state that:

"As the Commission has indicated, the mere number of leased lines termination points does not take into account the different types of leased lines that are available on the market – ranging from analogue voice-quality to high-speed digital leased lines, short distance to long distance international leased lines. Of the two criteria, leased lines revenues may be more transparent and less complicated to measure."

B.23 Volume market shares refer to the number of leased lines, independently of their capacity, quality, and length. However, prices vary according to these criteria. Revenue market shares will take these elements into account.

B.24 Although analogue and digital low bandwidth traditional interface leased lines are in the same market, the tables below provide data for three categories (analogue, low bandwidth digital, and total low bandwidth) to avoid giving detailed tables in Chapter 5. The tables show how the volumes and revenues for these three categories have evolved over the last five years.

B.25 It is important to bear in mind that the figures in Table B.1 refer to the number of traditional interface leased lines, independently of their capacity. Analogue leased lines offer, on average, a lower capacity than digital low bandwidth traditional interface leased lines (the capacity of which varies between 2.4kbit/s and 8Mbit/s).

B.26 Two further factors should be borne in mind while interpreting the figures. First, double counting occurs whenever a leased line is bought from BT by another communications provider and then resold as a leased line to an end user. This means that the same leased line can appear twice in the statistics, magnifying any trends. Provision and cessation of one such leased line would also be reflected twice. Second, other communications providers have been able to migrate traditional interface leased lines to PPCs since August 2001.

Table B.1: Low bandwidth (up to and including 8Mbit/s) traditional interface leased lines volumes (thousands) (not including Kingston)

	Analogue		Low bandwidth digital		Low bandwidth total	
	Total	BT	Total	BT	Total	BT
97/98	285	262 (92%)	209	146 (70%)	494	408 (83%)
98/99	217	193 (89%)	252	164 (65%)	469	358 (76%)
99/00	185	161 (87%)	278	200 (72%)	463	361 (78%)
00/01	158	150 (95%)	303	249 (82%)	462	400 (87%)
01/02	147	140 (95%)	268	202 (75%)	415	342 (82%)
02/03	156	146 (94%)	295	207 (70%)	451	354 (78%)

Figures in parentheses indicate BT's share (including Concert).
Source: Oftel/Ofcom Market Information

Table B.2: Low bandwidth (up to and including 8Mbit/s) traditional interface leased lines revenues (£m) (not including Kingston)

	Analogue		Low bandwidth digital		Low bandwidth total	
	Total	BT	Total	BT	Total	BT
97/98	306	272 (89%)	1076	768 (71%)	1381	1040 (75%)
98/99	288	254 (88%)	1231	881 (72%)	1519	1135 (75%)
99/00	253	218 (86%)	1343	950 (71%)	1596	1168 (73%)
00/01	212	184 (87%)	1420	1069 (75%)	1632	1253 (77%)
01/02	204	187 (91%)	1513	1134 (75%)	1718	1321 (77%)
02/03	181	163 (90%)	1320	987 (75%)	1501	1149 (77%)

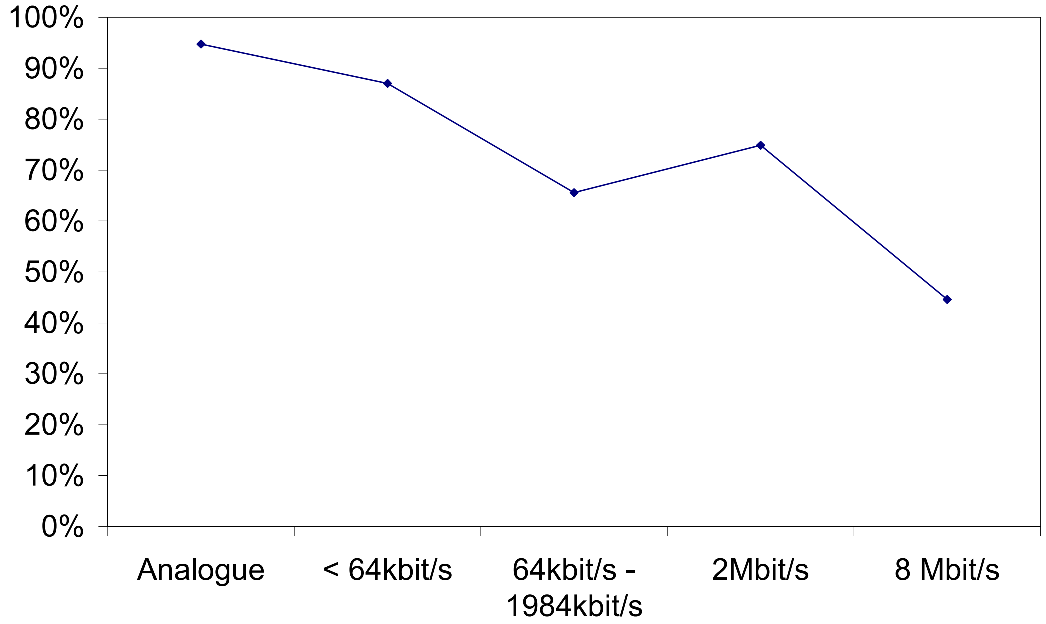
Figures in parentheses indicate BT's share (including Concert).
Source: Oftel/Ofcom Market Information.

B.27 While analysing the data, Ofcom noticed a sharp reduction in the number of low bandwidth traditional interface leased lines between 2000/01 and 2001/02. According to BT, about 39,000 leased lines had migrated to PPCs by March 2002. This implies that a significant percentage (67%) of the reduction in the number of leased lines supplied by BT in 2001/02 reflects migration and not cessation. BT explained that the remaining decrease (about 20,000) was caused by migration to other products (within BT) and by losses to competitors.

B.28 The general impression is that BT's market share in the low bandwidth traditional interface leased line market is very high and relatively stable at around 75% or more for revenues and at least as large by volume. BT's share of traditional interface analogue leased lines is even higher, at about 85-90%.

B.29 A substantial part of the difference between BT's volume and revenue market shares can be explained by the composition of BT's portfolio of circuits relative to that of other communications providers. Specifically, within the low bandwidth traditional interface market, BT's share of each type of circuit is at its highest in the provision of analogue circuits, and becomes progressively lower as bandwidth is increased, being at its lowest in the provision of 8Mbit/s circuits. This is illustrated by the fact that, based on 2001/02 volume data, BT's share of the total volume of different types of circuits is shown in Figure B.1 below:

Figure B.1: BT's share of the total volume of low bandwidth retail leased lines varies by bandwidth (average for total market is 78%)



Source: Oftel/Ofcom market information

B.30 Ofcom's consideration of the market share criterion suggests that BT has SMP. This is because of the very high level of BT's market share over the last five years and the absence of a rapid declining trend. This is in line with the Commission's Guidelines, which states in paragraph 75 that:

"According to established case-law, very large market shares – in excess of 50% – are in themselves, save exceptional circumstances, evidence of the existence of a dominant position. An undertaking with a large market share may be presumed to have SMP, that is, to be in a dominant position, if its market share has remained stable over time."

B.31 Ofcom believes that the introduction of remedies at the wholesale level will lead to increased competition and a fall in BT's market share in the retail low bandwidth traditional interface leased line market. However, Ofcom considers that in the next 2-3 years, this increase in competition is unlikely to be significant enough to imply that market share can no longer be viewed as an indicator of BT's market power.

B.32 Ofcom has identified at least three factors that are likely to limit the speed at which other communications providers can win customers away from BT. First, the full effect of the remedies imposed as part of the PPC Phase 1 and Phase 2 Directions might not be felt immediately because some of them involve multi-month processes (e.g. forecasting profiles, lead times). Second, Ofcom is aware that there are barriers to switching that are likely to slow the pace at which end users switch away from BT (see paragraphs B.68-B.75). Third, data on migration shows that BT's market share remains very high even though a significant proportion of the low bandwidth traditional interface leased lines bought by other communications providers have been migrated to PPCs. Migration of low bandwidth traditional interface leased lines to PPCs between August 2001 and March 2002 is estimated at about 30,000 on the basis of the data submitted by BT. By end January 2003, this number was estimated at about 44,500. Even though the migration process is not completed, these figures suggest that a significant share of migration had already taken place by end March 2002. However, BT's 02/03 market share remained at more than 75% both in terms of revenues and volume.

Excess pricing and profitability

B.33 BT has provided the following figures on its Return on Capital Employed (ROCE).

Table B.3: BT's ROCE for traditional interface leased lines

ROCE	98/99	99/00	00/01	01/02
Analogue	18%	19%	12%	6%
Digital – Kilostream and n*	41%	41%	37%	25%
Digital – Megastream (for 2 Mbit/s)	32%	37%	35%	40%
Digital – Megastream (above 2 Mbit/s)	n/a	n/a	27%	32%

B.34 Ofcom considers that the above figures represent potentially useful evidence in assessing the competitiveness of the traditional interface leased lines market. It is important to note the following regarding these figures:

- Ofcom has some concerns regarding the reliability of the above figures because it has not received sufficient information about the basis of preparation used by BT to derive these figures and about how these figures can be reconciled to BT's Financial Statements. This makes it difficult for Ofcom to appreciate the significance of the figures, notably the description of analogue returns as being below BT's cost of capital (13.5%); and
- notwithstanding the concerns outlined above, ROCE figures for digital circuits remain well above BT's cost of capital. Indeed, even if analogue returns for 2001/02 were to be increased to 13.5% by the re-allocation of costs from analogue to digital circuits, the ROCE for high bandwidth traditional interface circuits would remain as high as 25% (assuming all costs were re-allocated to high bandwidth circuits), and the corresponding figure for low bandwidth traditional interface circuits would remain as high as 35% (assuming all costs were re-allocated to low bandwidth circuits)

B.35 Ofcom has considered whether retail leased line prices provide evidence of SMP. The only prices that are readily accessible are BT's published prices, which Ofcom does not consider to be representative of the effective prices paid by customers. BT offers various discount schemes, which means that the price paid per leased line is in effect lower than the corresponding published price. The price varies between customers, depending on volume and contract length.

B.36 In addition, Ofcom has been unable to obtain useful or representative data on other communications providers' prices, because they are generally not published and traditional interface leased lines are generally provided at bespoke prices, with the result that no 'standard' prices exist. Ofcom does not, therefore, have published evidence to indicate whether, or the extent to which, BT charges higher prices than its competitors for similar leased lines.

B.37 However, customers have reported to Ofcom that other communications providers quote prices lower on average than BT's. Two customers told Ofcom that when there is some competition (i.e. where BT is not the only supplier of traditional interface leased lines in an area), other communications providers tend to quote a price that is '5% cheaper than BT'. Consequently, although the available published information on prices does not enable Ofcom to draw any meaningful conclusion about market power, Ofcom suspects that on average BT's traditional interface leased line prices are higher than those of other communications providers.

B.38 The above considerations lead Ofcom to conclude that it can rely on the information and evidence relating to excess price and profitability when reaching its conclusion on BT's market power.

Low bandwidth traditional interface retail: firm-related criteria

Technological advantages or superiority

B.39 Ofcom does not believe this criterion to be relevant, because the technology used to supply traditional interface leased lines is mature (communications providers and customers comment that leased lines are a "commodity product"), and because suppliers of leased line inputs to the incumbent can and do also supply to other communications providers. For example, communications providers sub-contract digging and ducting to construction firms and buy cable and fibre from manufacturing companies: none of these firms were reported to have exclusive business with one particular communications provider.

Control of infrastructure not easily duplicated

B.40 The network on which retail low bandwidth traditional interface leased lines are carried is not easy to duplicate, as discussed under the criterion 'barriers to entry' for the TISBO and trunk segment markets. The objective of the proposed remedies at the wholesale level (mainly PPCs) is precisely to address this matter and to reduce this hurdle. Ofcom is of the view that the availability of PPCs will substantially reduce the need to duplicate infrastructure. This is why Ofcom considers that in the presence of PPCs the 'control of infrastructure not easily duplicated' criterion is no longer a relevant factor on which to rely for attributing market power to BT at the retail level.

Economies of scale

B.41 Economies of scale at the retail traditional interface level derive from economies of scale at the wholesale level and from economies of scale specific to retail activities.

B.42 Ofcom is of the view that the introduction of PPCs at cost oriented charges will partly remedy the problems. The reason is that the cost orientation of the PPCs charges (i.e. charges set to reflect average costs) will incorporate the scale economy benefits that can be enjoyed at the wholesale level. Therefore Ofcom believes that the wholesale remedy should largely prevent BT from gaining advantage at the retail level from its wholesale economies of scale.

B.43 Ofcom considers that various activities specific to the retail level feature economies of scale, i.e. marketing, advertising, after-sales service, management and administration. Since the data shows that BT sells much larger volumes of leased lines than any other communications provider (the two other communications providers selling the most after BT sell only a few per cent of BT's volume), Ofcom considers that BT benefits from significant scale economy advantages derived from retail-specific activities.

B.44 From the work done to derive PPCs charges, Ofcom is aware that the costs of these retail-specific activities amount to a much smaller share of the final traditional interface leased line price than wholesale activities. This is why Ofcom believes that the availability of PPCs at cost oriented charges reduces the scale economy advantage that BT enjoys at the retail level, but does not remove it completely. As a result, Ofcom considers that economies of scale at the retail level contribute to BT's market power position at the retail level.

Economies of scope

B.45 Economies of scope arise in the retail low bandwidth traditional interface leased lines market if the costs of supplying leased lines can be shared with other products. These scope economies can derive from economies of scope at the wholesale level and from economies of scope specific to retail activities.

B.46 Ofcom believes that cost orientation of PPC charges (i.e. charges set to reflect average costs) will incorporate the scope economy benefits that can be enjoyed at the wholesale level. Therefore Ofcom believes that the wholesale remedy should largely prevent BT from gaining advantage at the retail level from its wholesale economies of scope.

B.47 Several activities specific to the retail level feature economies of scope, i.e. marketing, advertising, after-sales service, management and administration. Because of its incumbent position, BT sells a much higher number of different products and services than any other communications provider. This is why Ofcom considers that BT benefits from larger scope economy advantages derived from retail-specific activities than other traditional interface leased lines suppliers.

B.48 Ofcom is aware that the costs of these retail-specific activities amount to a much smaller share of the final traditional interface leased line price than wholesale activities. This is why Ofcom is minded to believe that the advantages that can be derived from scope economies from retail specific activities are likely to be of a smaller magnitude than those from wholesale activities. This leads Ofcom to think that cost oriented PPC charges reduce the scope economy advantage that BT enjoys at the retail level, but do not remedy it completely. This is why Ofcom is of the view that, even in the presence of wholesale remedies, BT enjoys larger economies of scope at the retail level than other traditional interface leased lines suppliers. In Ofcom's view this contributes to BT's market power position at the retail level, although to a lesser extent than other criteria.

Product/services diversification

B.49 This criterion does not initially seem to be significant for the assessment of SMP in the retail low bandwidth traditional interface leased lines market, as BT does not generally bundle other products with traditional interface retail leased lines, although Ofcom understands that BT offers more attractive conditions for certain types of private circuits packages when they are taken in combination with other products.

B.50 Traditional interface retail leased lines are priced independently of other products or services. The pricing depends on the volume of a customer's private circuit business and on the term over which that business is committed. Before wholesale remedies were in place, the ubiquity of BT's network meant that in many areas customers had no alternative to BT. If these customers also needed leased lines in other areas where other communications providers also provided leased lines, they were likely to buy these leased lines from BT in order to maximise their volume discounts. This point was made by competing operators. The wholesale remedies may mitigate this effect since they enable other operators to purchase the necessary wholesale inputs to compete anywhere; although this remains to be seen. However customers that have accumulated a stock of traditional interface leased lines before the wholesale remedies were implemented might still prefer to buy from BT in order to maximise their volume discounts. One operator explained how its hope to start supplying traditional interface leased lines to mobile operators for the purpose of linking radio-base stations to mobile telephone exchanges using PPCs collapsed when it realised that mobile operators were locked into volume discounts schemes with BT. These schemes made it unattractive to buy new leased lines of that type from alternative suppliers. In such circumstances communications providers would be forced to compete against BT's marginal price of leased lines, which is lower, and sometimes significantly so, than BT's average price. It can thus be inferred that BT's discounts may make entry and growth by other communications providers more difficult.

B.51 Customers say that the discounts offered by BT make them less likely to consider other traditional interface leased lines suppliers, whose average prices are cheaper, in areas where these suppliers are active. If they used other, cheaper suppliers for some of their leased lines, it would mean a possibly significant reduction in the discount obtained from BT, which is calculated on the basis of total purchased volume and which applies to the whole purchase. Communications providers have also commented on this issue.

B.52 As noted in Chapter 5, Ofcom is investigating one complaint from a communications provider relating to BT's volume discounts for its traditional interface retail leased lines, and will give appropriate consideration in the usual way to any other fully substantiated evidence-based complaints submitted on this issue.

Vertical integration

B.53 BT's vertical integration may generate greater efficiency as it enables the avoidance of various transaction costs. BT's vertical integration also creates potential for BT to leverage market power into downstream markets. In this context, BT's dominance at the wholesale level (in the markets for trunk segments and low bandwidth TISBO) give BT an advantage in the traditional interface *retail* market. Vertical leveraging can take place because of the significant difference between average costs, on which regulated PPC charges are based, and marginal costs, which are incurred by BT on an end-to-end basis for additional leased lines. In theory, this type of vertical leveraging can be prevented by controlling for margin squeeze, for investigating discrimination on non-price factors, and by imposing accounting separation on BT. However, Ofcom is aware that it is likely that these wholesale remedies will alleviate, rather than entirely eradicate, such competition problems, not least because of the difference in the marginal and average costs of deployment as outlined above. Ofcom is of the view that the vertical integration criterion is relevant to its assessment of BT's market power as vertical integration is likely to add to the sources of market power for BT.

Distribution and sales network

B.54 In deciding whether BT's distribution and sales network gives it an advantage over other communications providers, it is worth remembering that retail leased lines are mainly corporate products and that customers are aware of alternative communications providers.

B.55 Ofcom is thus of the view that this criterion is not a significant source of BT's market power at the retail level.

Access to capital markets and financial resources

B.56 Ofcom is of the opinion that this criteria is unlikely to be a major determinant of SMP in markets for traditional interface retail leased lines given that very significant investment (e.g. in network infrastructure) is not necessary in order for communications providers to enter the market.

Low bandwidth traditional interface retail: customer-related criteria

Countervailing buying power

B.57 BT's current obligation to stick to published prices limits the extent to which customers can exercise buyer power. Even in the presence of this regulation, customers, especially large ones, try to negotiate with BT and other communications providers for the provisioning of their low bandwidth traditional interface leased lines. During the market review customers reported that negotiation is fruitless where there is no alternative supplier to BT. This has led some large leased line end users to engage in self-provision. One large end user told Ofcom that it actively negotiates on price and non-price terms when contracting leased lines. It added that the two key factors in any negotiation are the volume/volume growth and the availability of genuine alternative suppliers, and highlighted that while competition on major city routes is well developed, competition to provide 2Mbit/s traditional interface lines overall (urban and rural areas together) only really exists in respect of self-provision. In other words, BT is the only realistic traditional interface leased line provider in many cases.

B.58 In addition, customers indicated that even where there are alternative suppliers, room for exerting buyer power is limited. Most negotiations with other communications providers do not generate more than a five per cent reduction on BT's prices. This was explicitly mentioned by a very large user of leased lines. All the large business customers participating in a meeting to discuss the markets under review believed that this is partly caused by BT's obligation to publish its prices, which enables other communications providers to target the most profitable customers by slightly undercutting BT's published prices.

B.59 This suggests that until now there has been very little scope for countervailing buyer power to act as an influence on the traditional interface retail leased lines market, and that buyer power has not acted as a curb on BT's market power.

B.60 For the purpose of this market power assessment Ofcom must adopt a forward-looking approach and try to assess what is likely to happen in presence of the proposed wholesale remedies but in absence of any retail obligation (in particular, no price publication obligation). In these circumstances, Ofcom believes that large leased line customers would try to exert countervailing buyer power and would have more ability to do so.

B.61 Ofcom is also aware that a significant proportion of low bandwidth leased line buyers are SMEs. Ofcom believes that SMEs might on average be slower at trying to exert countervailing buyer power and be less successful at exploiting it. The reasons that support this view are that PPCs are a relatively recent innovation, and that SMEs might not consider it worth attempting to exert buyer power, especially when leased line expenditures may represent a small proportion of their total costs. This is why Ofcom is minded to explore the possibility of offering protection to more vulnerable leased line buyers until they are in a position to negotiate prices and conditions.

B.62 This leads Ofcom to think that the availability of PPCs at the wholesale level will stimulate the development of competition and will encourage leased lines customers to exert some buyer power. But, given that currently buyer power is weak, Ofcom considers it very unlikely that the increase in buyer power would be sufficiently large to curb BT's market power. This is why Ofcom does not consider this criterion as significant for its market power assessment.

Low bandwidth traditional interface retail: market related criteria

B.63 There are several criteria relating to the market and its characteristics, which offer a picture of market entry and related behaviours.

Ease of market entry

B.64 As discussed above, this discussion will focus on those barriers to entry that will apply in the presence of proposed wholesale remedies. Ofcom's discussion of the markets for TISBO describes the existence of network related barriers to entry. The wholesale remedies are intended to mitigate the effects that these barriers might have at the retail level. However, as described earlier, it appears unlikely that their full impact will be seen in alternative interface retail markets in the immediate future.

B.65 Communications providers may face additional barriers to entry depending on how they plan to enter the market. For firms that resell services provided by BT and other communications providers, the main costs are the sales and marketing required to establish a presence. Their scope for undercutting existing competitors is limited, because their only source of lower costs would be in the retail costs and they are likely to be disadvantaged in terms of the network costs.

Absence of potential competition

B.66 Potential competition refers to the prospect of new competitors entering the market within the timeframe considered for the market review.

B.67 In the light of the remaining barriers to entry in the traditional interface retail market (see above), Ofcom believes that the likelihood of widespread entry is low. As stated above, Ofcom's belief is that its wholesale TISBO market remedies will not entirely or immediately remove barriers to entry at the retail level.

Barriers to switching

B.68 Ofcom has identified several barriers to switching, differing in nature as well as in importance.

B.69 First, Ofcom assesses the existence and importance of technological barriers to switching. Communications providers told Ofcom that there are no technological barriers to switching. Interruption of service when switching from one supplier to another is not viewed as a barrier to switching: as communications providers explained to Ofcom, service interruption occurs on a regular basis anyway for maintenance purposes.

B.70 Second, there exist contractual barriers to switching. Traditional interface retail leased lines are often purchased in contracts that last several years. This means that in any one year only a proportion of the total market is available to be won by competitors. It also implies that customers willing to switch earlier face a cancellation fee as a penalty. One large leased line customer told Ofcom that leaving BT would be difficult because of the high penalty charges for exiting existing contracts. Other large business customers told Ofcom that other communications providers offer contracts without any penalty for early termination. The speed at which competitors can win business from BT is subject, therefore, to limitations. However, communications providers agree that the share of contracts lasting more than one year is falling. BT reports that it observed a fall from 36% to 31% between 2001 and 2002.

B.71 Third, there exist financial barriers to switching. One is having to pay a (possibly reduced) connection fee to the new supplier, while another is the forgoing of discount advantages when an end user moves part of its sales away from a supplier offering a volume discount scheme. BT offers this type of discount scheme. A further barrier derives from the pricing structure at the retail level. In particular, the example of BT's new pricing structure at the retail level was mentioned. This price structure features high up-front cost and lower rental charges; it was suggested that this might make switching more difficult. As wholesale prices are structured in a similar way, there may be a natural tendency in the market to converge towards such a pricing scheme. The possibility of sharing infrastructure is likely to mitigate the trend. It is too early to collect evidence from end users on how they feel their switching behaviour will be affected by this new pricing structure.

B.72 Fourth, customers' perceptions and attitudes can act as a barrier to switching. The former category includes the issue of multi-vendor circuits, which are traditional interface leased lines that run on more than one network. For some customers, the problems experienced when something goes wrong (lack of communication between the different vendors, or 'passing the buck' for fault repair) are significant enough to lead them to prefer single-vendor circuits. Such preference works in favour of BT, which always offers single-vendor circuits. However, evidence gathered on this issue is mixed and cannot lead to a definitive conclusion that multi vendor circuits discourage switching.

B.73 Customer inertia can act as a barrier to switching, i.e. customers are happy with the service and do not think that it is worth their while to shop around and face the inconvenience that switching is likely to generate. The evidence gathered on this issue seems to suggest that customer inertia varies with customer size. Paragraphs 7.12 to 7.14 of Oftel's *Small and Medium Business Survey Q11 November 2002*, published on 27 January 2003, reported on the reasons for or against changing suppliers and highlighted the existence of customer inertia among small and medium business. Large business customers made it clear during a meeting that they are actively shopping around and sometimes even consider switching to build part of the network they require.

B.74 Finally, BT has developed a strong brand, which is likely to work in its favour when it comes to reaching and attracting firms that do not employ one particular person to manage the firm's telecommunications needs. This is particularly likely to be the case among small and medium enterprises. The strength of BT's brand also means that if a customer is unhappy with an alternative supplier it is more likely to go back to BT than to try another alternative supplier.

B.75 The combination of these barriers to switching is perceived as important by some customers, and not significant by others. Ofcom considers that the existence of contracts, and some other evidence of barriers to switching, place some limitations on the rate at which the greater competition promoted by wholesale remedies will undermine BT's SMP at the retail level.

Customers' ability to use and access information

B.76 Customers' views on use of and access to information relating to traditional interface leased lines differ. Some customers reported that they were happy. One large end user reported in its response to Ofcom that it had generally been satisfied with the level of information provided by suppliers about leased line services. However, another large user said that it was difficult to calculate BT's tariffs. Ofcom considers that on average the evidence received as part of the market review process does not indicate that this is an area from which BT derives market power.

Low bandwidth traditional interface retail – Intensity of competition criteria

Barriers to expansion

B.77 Ofcom's market information (see Tables B.1 and B.2) suggests that growth in the size of the market for low bandwidth traditional interface retail leased lines has been minimal in recent years by revenue (and declining by volume). Ofcom anticipates that this situation, combined with barriers to entry and switching (see above), would, in the absence of regulation in the traditional interface retail market, contribute towards BT's ability to behave independently of competitors and consumers in this market, since competitors will be obliged to compete for a share of a relatively small addressable market.

Active competition on non-price factors

B.78 A firm may derive market power from successfully differentiating its product, either vertically (on the basis of quality) or horizontally (on the basis of diversity).

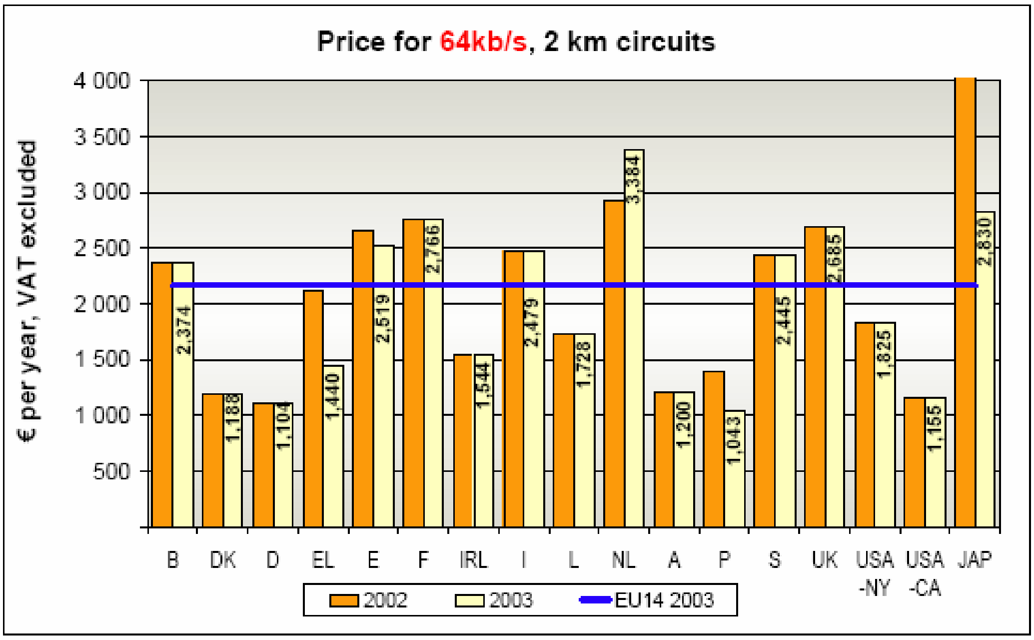
B.79 Low bandwidth traditional interface retail leased lines do not offer much scope for differentiation, as the underlying technology is standard, and customers focus more on price. Most communications providers seem to be offering roughly the same range of leased line products and services. Some vertical differentiation can be observed in terms of quality of service and of reliability. However the evidence received from end users and other communications providers seems to suggest that perception of quality and reliability varies sufficiently to prevent any conclusion on this issue.

B.80 Ofcom is accordingly of the view that issues related to differentiation do not confer additional market power on BT in this market.

International benchmarking

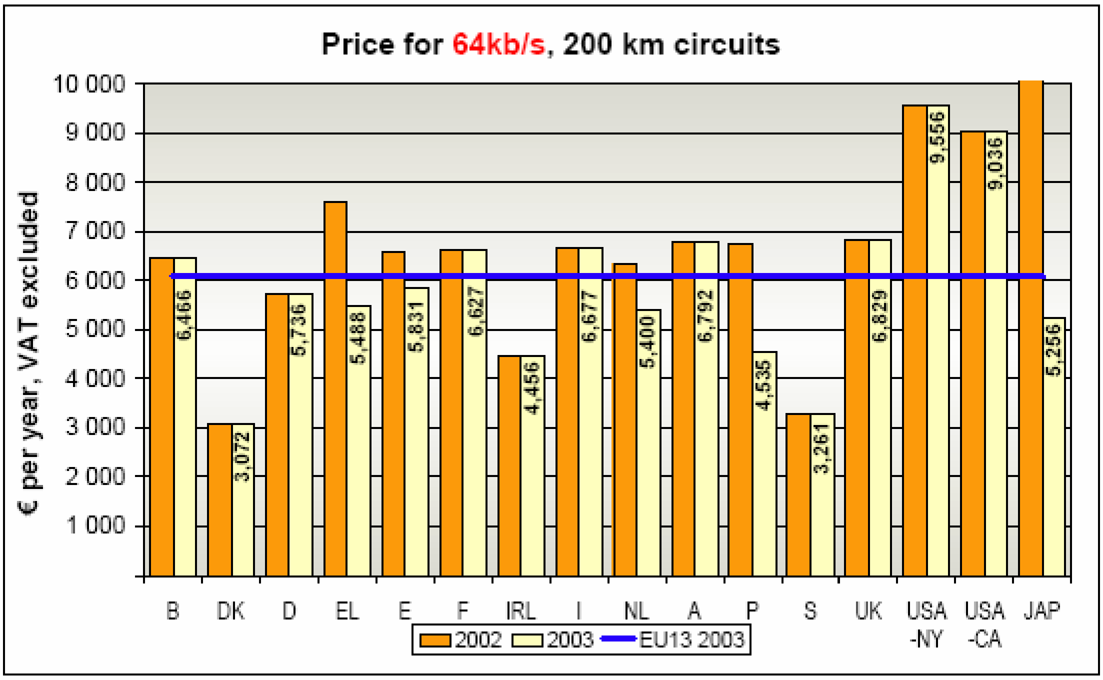
B.81 The European Commission's *9th Report on the Implementation of the Telecommunications Regulatory Package* (November 2003), provides several charts comparing the prices of leased lines of different lengths and different bandwidths offered by incumbents in Europe, North America and Japan. Concerning low bandwidth traditional interface retail leased lines, the comparisons cover 64kbit/s and 2Mbit/s circuits for 2002 and 2003 (all EU countries are covered except Finland):

Figure B.2: Prices for 64kbit/s, 2km circuits



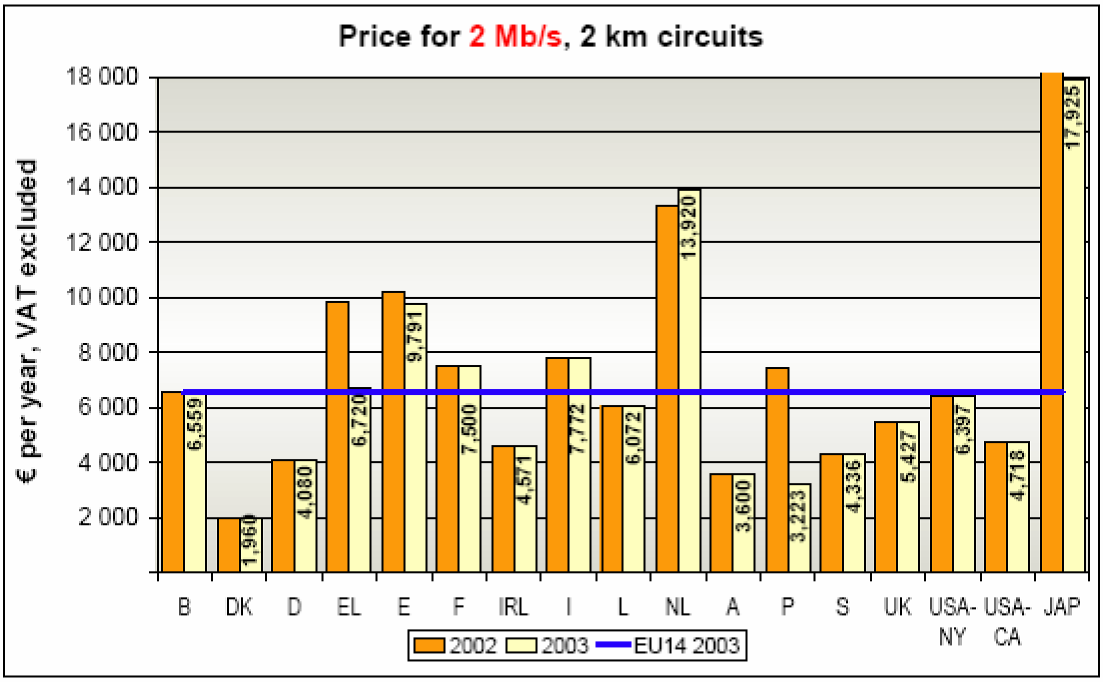
Source: European Commission

Figure B.3: Prices for 64kbit/s, 200km circuits



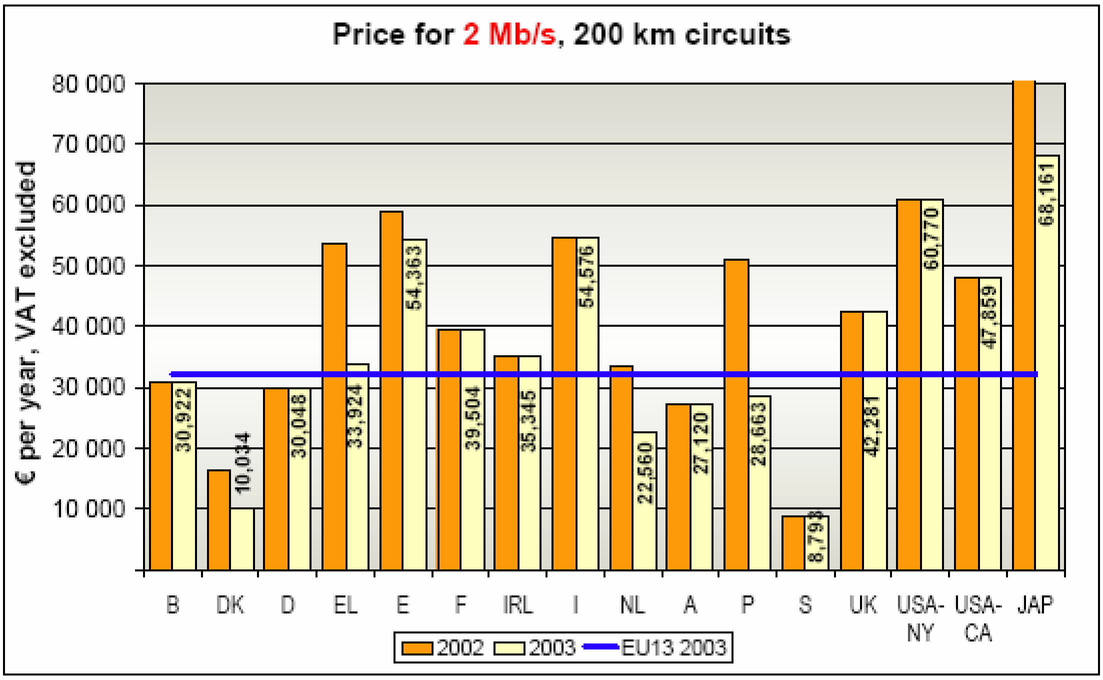
Source: European Commission

Figure B.4: Prices for 2Mbit/s, 2km circuits



Source: European Commission

Figure B.5: Prices for 2Mbit/s, 200km circuits



Source: European Commission

Comparison with other EU countries

B.82 For 64kbit/s traditional interface circuits, the charts indicate that the UK incumbent, BT, offers among the highest prices for both 2km and 200km length circuits among the EU incumbents. BT's prices have not changed between 2002 and 2003 for these circuits. For short circuits, BT's price is about €500 more expensive than the EU average price whereas for long circuits, BT's price exceeds the EU average price by nearly €1,000.

B.83 For 2Mbit/s traditional interface circuits, BT's prices have remained fairly constant between 2002 and 2003. It can be seen that for short circuits, BT's price is about €1,000 cheaper than the EU average price (six EU incumbents offer cheaper prices and seven EU incumbents offer higher prices). For long circuits, BT's price exceeds the EU average price by about €10,000 (ten EU incumbents offer cheaper prices and two EU incumbents offer higher prices).

B.84 Notwithstanding the usual caveats of such a comparison exercise (incumbents price their circuits differently with varying, often unpublished, discount structures; they rarely offer identical products; and they may have different approaches to cost recovery), BT appears to be offering high prices for low bandwidth traditional interface retail leased lines compared to other EU incumbents. Only for short 2Mbit/s circuits does BT appear to offer a price in line with the EU average. There does not seem to be any obvious reason why BT would face higher costs than other incumbents to supply these leased lines, that would justify BT's high price levels. BT's high prices for low bandwidth traditional interface retail leased lines therefore are consistent with the view that BT enjoys a degree of SMP in this market compared to other EU incumbents.

Comparison with non EU countries

B.85 For 64kbit/s traditional interface circuits, the charts indicate that only Japan's incumbent sets higher prices than BT for short circuits (by around €150). For long circuits the US-based incumbents set higher prices (at least 30% more expensive), with the Japanese incumbent setting a price some €1,500 lower than BT.

B.86 For 2Mbit/s traditional interface circuits, Japan's incumbent sets much higher prices than BT for short circuits (over three times as much). The US representative incumbents are split, with one asking for slightly more (about €1,000 more) and the other asking for slightly less (about €700). For long circuits all non-EU incumbents set higher prices (ranging from around 13% to over 60% more expensive) than BT.

B.87 In other words, BT generally offers a better deal than the Japanese incumbent. North American incumbents seem to be significantly cheaper only for short 64kbit/s traditional interface circuits.

B.88 Ofcom is aware that the most recent international benchmarking exercise reveals, despite its methodological caveats, that BT was able to quote traditional interface retail prices frequently above the European average price. Looking forward, Ofcom anticipates that the introduction of remedies at the wholesale level will have a positive impact on the level of competition in the low bandwidth traditional interface retail leased line markets.

Conclusion on assessment of SMP in low bandwidth traditional interface retail leased lines

B.89 The assessment of the above criteria clearly indicates that BT currently possesses SMP in the retail market for low bandwidth traditional interface leased lines. Key factors, such as market share, barriers to switching, customers' inertia and the absence of wholesale remedies until recently, have made entry in the low bandwidth traditional interface retail leased lines market difficult and unattractive. As a result, competition has not been intensive and customers may not get good value for money. The recent international benchmarking figures, information from customers about BT's prices relative to competitors and BT's estimates of its profitability for low bandwidth digital leased lines are consistent with this view.

B.90 Wholesale remedies – the availability of PPCs – will promote competition and make entry easier, but Ofcom does not consider that BT's current strong market position will be undermined to the extent that its SMP will be removed within the next two to three years. The main reasons why Ofcom believes that BT will continue to be able to behave to an appreciable extent independently of competitors and customers in the absence of retail regulation are:

- its current very high market share (around 75% by value, and even higher by volume); and
- the absence of a rapid declining trend in BT's market share.

B.91 Ofcom considers that, additionally, the factors outlined below are relevant:

- contractual, financial, and perceived barriers to switching;
- economies of scale and scope for retail activities;
- remaining scope for vertical leverage given the difference between marginal and average costs; and
- profitability and excessive pricing.

Likelihood of competition developing in the future

B.92 Ofcom has considered the potential impact of external factors on this market during the period covered by this review. Ofcom's view is that there are no developments that would generate sufficient competitive pressures within the next 2-3 years to alter the current finding of SMP.

B.93 There are several reasons for this conclusion. First, barriers to switching (contractual terms and penalties, inertia, discount schemes, BT's brand, customer perception, etc) slow down the rate at which communications providers can win end users away from BT. These barriers are not affected by the implementation of a wholesale remedy.

B.94 Second, the economies of scale and of scope specific to retail activities are unlikely to be significantly reduced in the short term by the creation of a wholesale remedy.

B.95 Third, even though the number of circuits that migrated from traditional interface retail leased lines to PPCs may be large (about 43,000 as at August 2003 according to BT's latest figures) this migration has had only a small impact on BT's market share. In addition the number of new PPCs (as opposed to those migrated from existing private circuits) sold (about 17,000 according to BT's latest figures) can only be an upper bound indication of the decrease of BT's retail market share, because PPCs are used for other purposes besides traditional interface retail leased lines.

B.96 Finally, market conditions are such that telecommunications budgets both of end users and of communications providers are under pressure. This is unlikely to generate a situation in which communications providers' positions in the retail low bandwidth traditional interface leased lines market can improve rapidly and significantly, especially given BT's current very high market share. This is because a slow demand growth and tighter rules governing investments in network expansion are expected to make it harder to attract new customers as well as customers away from BT.

B.97 However, Ofcom will keep market conditions under review.

Market for wholesale trunk segments in the UK

B.98 Ofcom's market assessment of the trunk segment market has been conducted assuming the presence of its proposed wholesale remedy in TISBO, but in the absence of its proposed remedies in the trunk segments and retail markets. The reasoning behind this approach is outlined in Chapter 2.

Wholesale trunk: summary of conclusions

B.99 Ofcom considers that BT has SMP in the market for trunk segments. Ofcom has reached this conclusion based on an analysis of:

- the ubiquity of BT's infrastructure and number of routes subject to little or no competition;
- barriers to entry;
- economies of scale;
- the relatively high percentage of terminating segments with which trunk segments were purchased from BT (especially given the charges set by BT);
- BT's vertical integration; and
- Information supplied by BT suggesting that trunk segments are currently priced significantly above cost.

B.100 The analysis outlined in the following subsections is conducted with a focus on the ability of communications providers to compete with BT in the provision of trunk segments defined as conveyance between the Tier 1 nodes of BT's SDH network. However, it is important to note, as outlined in Annex A, that, in the case of SDSL based services, the core portion of end-to-end circuits are conveyed across BT's ATM network, and as such falls within the market for broadband conveyance. This issue is very unlikely to be of key importance in the context of Ofcom's SMP finding in the core markets as a whole. SDSL is an emerging technology, currently restricted to a very small number of users, that is unlikely, due to this newness and other factors such as distance limitations, to displace a large proportion of the current volumes of SDH based leased lines products within the next 2-3 years.

B.101 In the context of core services offered over the ATM network, some aspects of Ofcom's SMP analysis, e.g. the data regarding the proportion of the current stock of PPCs that have been sold with a trunk segment, are not relevant and cannot be replicated specifically in the context of SDSL based services since SDSL-based symmetric broadband origination has only recently been offered.

B.102 The number of SDSL based circuits that have been sold remains relatively small, meaning that it is difficult to make an SMP assessment based on evidence relating specifically to SDSL. However, Ofcom notes that many of the above factors are equally applicable to the assessment of the ability of communications providers to compete with BT in the conveyance of traffic across its ATM network, since:

- conveyance across the ATM network is subject to similar issues of barriers to entry in terms of replicating the ubiquity of BT's network (see Ofcom's Review of the Wholesale Broadband Access Markets, 13th May 2004, http://www.ofcom.org.uk/consultations/past/wbamp/?a=87101 for details) ;
- conveyance across the ATM network is also characterised by economies of scale (see the broadband market review for details); and
- similar issues with regard to capturing a share of conveyance across the ATM network are likely arise as a result of BT's vertical integration.

B.103 The last point, i.e. the issue of vertical integration, is likely to be particularly important in the context of circuits provided over SDSL. SDSL based circuits will compete with circuits in the low bandwidth market. This means that, as discussed in the discussion of SMP for low bandwidth TISBO, BT's market share of the relevant market at the access level is likely to be persistently high (Ofcom notes that BT's current share of the low bandwidth access market is currently in excess of 80%). This share is likely to be considerably higher than it is in the broadband access market, in which, significantly, the cable operators have a significant market share. Ofcom's view is that it is unlikely that the cable networks will be able to economically provide symmetric services for the foreseeable future. This means that, in the case of SDSL based circuits, other communications providers are likely to be unable to compete for a significant proportion of core sales over the ATM network, since BT will self-provide the core elements of its retail leased lines.

Wholesale trunk: quantitative information criteria

Market shares

B.104 An important point to note concerning this, and all other wholesale markets, is that Ofcom's analysis has been informed by the use of market share estimates based on data provided to it regarding retail leased lines. Traditional interface retail leased lines are the most prominent of the services that may be offered using trunk and TISBO as inputs. However, as discussed in Chapter 2, Ofcom's wholesale market definitions and SMP assessments relate to the provision of these services for all end user applications. Comprehensive market share data on trunk segments is difficult to obtain, since trunk segments are used as an input into a range of retail services.

B.105 The quantitative information relating specifically to trunk segments that has been made available to Ofcom is set out below in Ofcom's discussion of the issues relating to BT's advantages that are derived from the ubiquity of its infrastructure.

B.106 Due to the number of end uses to which services in these markets are put to, it is difficult to directly measure BT's share of the total number of trunk segments in the UK. However, the following pieces of information are valuable indicators:

- BT's combined share of all traditional interface retail leased lines markets by revenue is in excess of 70% (as of the end of January 2003), as it has been for the past 5 years; and
- between January 2002 and July 2003, BT sold a number of PPCs to other operators. Information supplied to Ofcom by BT revealed that something in the region of 56% of these (see information on the "proportion of PPCs sold with trunk segments" below) were sold with an element of trunk segment.

B.107 This suggests that less than 20% of retail leased lines have trunk segments provided by a communications provider other than BT. The level and persistence of

BT's share of the total trunk segments market is well above a level that Ofcom would associate with a presumption of dominance. Ofcom is not aware of any reason why the use of traditional interface retail leased lines data would provide a biased estimate of market shares in trunk segments.

Excess pricing and profitability

B.108 On page 110 of the 2002/03 CCA Financial Statements (http://www.btplc.com/Corporateinformation/Regulatory/Financialstatements/PDF2003/Finalstats2003g.pdf), BT has provided a comparison of the costs of regulated PPC services alongside the average priced charged over the same period. Based on this information it is noticeable that, for trunk segments, the prices charged for all identified bandwidths is well above the standalone cost ceiling as determined by BT.

B.109 The table below is an extract from BT's 2002/03 financial statements.

Table B.4: BT's costs and charges for trunk segments (£ per km)

	LRIC "floor"	FAC	SAC "ceiling"	Average charge	Excess of charge over SAC
2 Mbps	4	4	10	21	110%
34 Mbps	29	33	67	115	72%
140/155 Mbps	61	71	162	244	51%

Source: BT

B.110 Ofcom is not familiar with the precise way in which the above figures were calculated by BT. At first sight though, the fact that BT is able to price trunk segments at a level that is a long way above the level of fully allocated cost, and also well above standalone cost, is consistent with BT enjoying SMP in this market. Ofcom also notes that at such prices BT has still sold trunk segments with around 56% of terminating segments (see Figures B.7 – B.9 below for details). This suggests that other communications providers are unable to quickly switch to the use of trunk segments that are either self-provided or supplied by another competing operator.

B.111 This is further reflected in BT's charges for trunk segments. A comparison of the per kilometre charges for PPC terminating segments (which should be priced at cost) and trunk indicates that the trunk charges are up to four times higher. Ofcom would expect trunk charges to be lower than those for terminating segments due to economies of scale. BT's ability to price at this level strongly suggests that other communications providers are not able to act as a competitive constraint on BT's ability to price above the competitive level and that, as such, BT has SMP in the market for trunk.

B.112 The above data may not provide conclusive evidence on its own without further investigation. Nevertheless it suggests to Ofcom that BT is able to price independently of its competitors, and as such is in a position of SMP.

International benchmarking

B.113 International benchmarking data on trunk segments is not available to Ofcom.

Wholesale trunk: firm-related criteria

Technological advantages or superiority

B.114 This criterion is of minimal relevance to trunk segments since:

- the technology of traditional interface leased lines is well established and known to all communications providers; and
- the incumbent is supplied with technological inputs by the same firms as other communications providers.

B.115 BT has additionally stated that it operates a relatively expensive PDH network in tandem with a modern SDH network, while its competitors only operate modern SDH-only networks. This could be viewed as indicating that BT is in some (limited) aspects of its technology at a disadvantage relative to other communications providers. Ofcom, however, considers that these factors are not significant enough to make this criterion an essential part of its market power assessment.

Control of infrastructure not easily duplicated

B.116 BT and other communications providers have supplied Ofcom with maps detailing the extent of the fibre optic networks built by the UK communications providers in the UK. These have not been replicated here, but are publicly available, notably on other communications providers' websites. Based on this information, it is clear that a number of such networks have now been built. In particular, many other communications providers have points of presence linking the UK's major cities, such as London, Leeds, Manchester and Birmingham. However, a number of other areas do not, based on the examination of these maps, appear to have been covered by the rollout of other communications providers' networks. The following sections describe evidence provided to Ofcom by BT concerning this issue.

Network reach information for BT and other communications providers

B.117 Other communications providers are usually reliant on BT for obtaining TISBO (see the assessment of SMP in TISBO below). Because of this, in order for another communications provider to be able to compete with BT in the trunk market, either through self-provision or supply to other communications providers, its network must be able to provide capacity between the locations of BT's Tier 1 nodes in the same manner as BT's own trunk network.

B.118 BT suggested that Ofcom's focus of its market analysis on BT's own network overstates BT's advantage over other communications providers in the market for trunk segments. BT instead advocated the use of a market analysis based on the relative ability of each communications provider, including BT, to address certain key customer segments.

B.119 Ofcom acknowledges that, in the context of trunk segments, it has carried out a market analysis that is BT-network centric, in other words that it focuses on the proximity of other operators to BT's network (Tier 1) nodes rather than vice versa, or rather than using a more "neutral" measure.

B.120 Ofcom's view is that the use of such an approach is, to a degree, inevitable given BT's dominance at the access level (i.e. in the markets for TISBO and AISBO). Since wholesale symmetric broadband origination is bought from BT, BT's nodes are the most relevant for the provision of trunk segments. In those cases where symmetric broadband origination is not provided by BT, i.e. is self-provided, bought from an alternative communications provider, or both, then BT's trunk network is likely to be a less relevant basis upon which to assess the market. Given BT's SMP in the markets for SBO, the BT centric view is relevant to the majority (over 70%) of the market, meaning that, while not relevant to the entire market, its use remains appropriate.

B.121 BT has supplied Ofcom with a series of maps detailing the location of BT's Tier 1 nodes relative to the PPC nodes of the other communications providers. These diagrams show that even the largest communications providers have not fully replicated the coverage of BT's trunk network, particularly outside the main metropolitan areas. These diagrams have not been reproduced in this document due to issues of confidentiality. Diagrammatic evidence of this sort is useful on an indicative basis, but has obvious limitations. Ofcom has therefore undertaken a more detailed analysis of the location of BT's network configuration and that of other communications providers. This analysis reveals that a number of other communications providers are in a position to provide trunk segments over a significant number of what Ofcom would expect to be the most important (in terms of capacity requirements and revenue potential) intra Tier 1 routes, notably between the UK's major urban areas. This suggests a significant degree of competition on these routes. Equally however, the ubiquity, i.e. very extensive geographic reach, of BT's network means that there are a number of intra Tier 1 routes on which little or no competition seems currently to exist. In addition, given the costs of network extension, the prospects for greater competition to develop on these routes in the foreseeable future appears to be weak. The relative importance of each trunk route in terms of the total market is difficult to quantify in the absence of very detailed volume information.

B.122 As of February 2003, BT had 65 Tier 1 nodes, meaning that there are over 2000 possible trunk routes between pairs of Tier 1 nodes (the number of possible routes calculated as $[65^2-65]\div2$). On the assumption that presence at two Tier 1 nodes confers the ability to provide conveyance between them on a given trunk route, in order for a constraint to be provided on BT's ability to behave independently of competitors, at least one competing communications provider must have a point of presence sufficiently close to both the relevant Tier 1 nodes. Ofcom's analysis of the data provided by BT indicates that there are a large number of routes on which BT seems unlikely to be constrained. A summary of the analysis was provided in the April 2003 consultation. Table B.5 in that consultation summarised the information provided by BT in a format along the lines of, "on X% of all trunk routes, there are no other communications providers with points of presence within Y km of both the relevant Tier 1 nodes".

B.123 BT pointed out in its response to the December 2003 consultation that many communications providers have already built their networks to the majority of BT's Tier 1 nodes in order to interconnect with voice switches at these nodes.

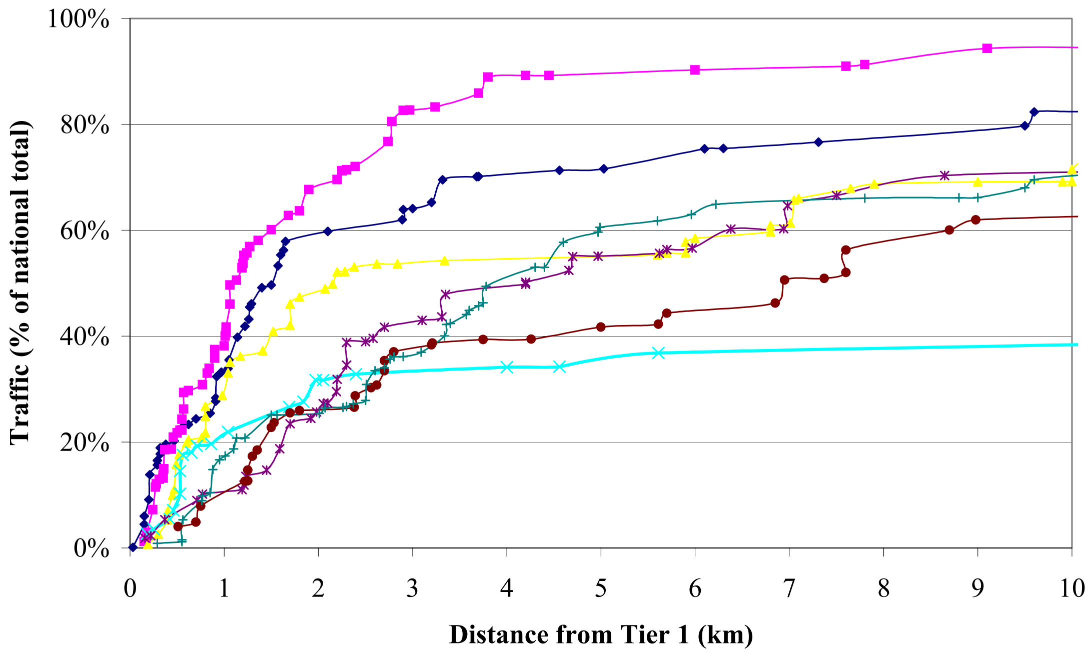
B.124 Ofcom's view is that, while it is indeed widespread, interconnection at voice switches is currently insufficient to constrain BT's pricing of trunk segments. This is because interconnection at BT's DMSU sites does not enable a communications provider to buy PPCs from the corresponding Tier 1 node unless it has PPC/PSTN interconnections at these points, or it has co-sited PPC interconnections at the location. Traditionally leased lines and PSTN interconnection have been provided over separate infrastructure and, although the mixing of the two types of circuits is possible with new interconnect products, it is not currently possible for competitors to re-engineer existing interconnections to enable such mixing. Even in cases where PPC/PSTN mixing is in place, and assuming that the current PSTN interconnect uses fibre (so there is no capacity constraint), there is still an additional cost associated with converting a PSTN interconnect to a PPC/PSTN interconnect. It is additionally worth noting that BT does not always deliver end to end circuits via the Tier 1 nodes since it will in some cases be more efficient to deliver via Tier 1.5 or Tier 2. Consequently, a communications provider that is constrained only to deliver trunk via Tier 1 nodes may face routing inefficiencies that will restrict its ability to compete.

B.125 In the light of the comments made by BT, Ofcom refined its analysis regarding the proximity of BT's Tier 1 nodes to other communications providers' points of presence. The results of this analysis are outlined in the chart in Figure B.6 below. The analysis was informed by two further data sources supplied to Ofcom following the publication of the first consultation. These related to:

- the volume of traffic passing through each of BT's Tier 1 nodes; and
- a comprehensive list of the network points of presence of the alternative communications providers.

B.126 The chart in Figure B.6 is made up of seven curves, each representing the network coverage of seven of the biggest alternative network communications providers in the UK as of 2003. The curves represent the proximity of alternative networks to BT's Tier 1 nodes, where each BT node is weighted according to the proportion of total traffic passing through it. This traffic includes all traffic carried over the SDH network (including private circuits but also other services). Each curve can be interpreted as follows – it shows, for all the network points of presence of a given communications provider, the proportion, weighted by traffic, of BT's Tier 1 nodes that can be reached by a communications provider by digging various radial distances. The traffic weighting is intended to provide a proxy of the number of private circuits connected to each Tier 1 node, this being the best measure that was available to Ofcom, and not one that seems likely to bias its analysis significantly.

Figure B.6 - Percentage of BT traffic at Tier 1 nodes potentially competed for by communications providers within a given radial distance



B.127 Figure B.6 shows, for example:

- the competing communications provider with the greatest level of network coverage (corresponding to the curve that is vertically the highest in the chart above) could potentially compete for almost 40% of the traffic at BT's Tier 1 nodes by digging 1km from its points of presence; and
- the same communications provider could potentially compete for almost 95% of the traffic at BT's Tier 1 nodes by digging 10km from its points of presence.

B.128 BT's response to the April 2003 consultation featured a similar analysis to the one outlined above. It divided the UK into 121 postcode areas and hence 7,260 "inter postcode area" routes. These routes were weighted according to the number of business sites in each and the areas in which BT had points of presence. BT stated that the results of this analysis showed that "BT's Tier 1 network can supply trunk links for a lower percentage of routes than any of three other communications providers, and significantly fewer than one of these".

B.129 Ofcom's view is that this type of analysis may be of some interest. However, Ofcom considers that its own analysis presents a better portrayal of the degree of competitiveness in the trunk market. This is because, significantly, BT's use of the "number of businesses per postcode area" is a considerably cruder measure of the relative importance of different trunk routes than Ofcom's own total traffic weighting. This is because using the total number of businesses as a weighting measure does not take into account the size of different businesses in terms of their importance with regards to communications markets.

B.130 BT suggested that the weighting Oftel had chosen for its analysis of Tier 1 traffic was inappropriate as it includes a significant amount of non-leased lines traffic, includes traffic transiting through a node, and ignores traffic that is carried over other communications providers' networks. BT reiterated the arguments it made in its response to the April 2003 consultation that an analysis based on the number of businesses within postcode areas was more appropriate.

B.131 Ofcom's view is that the use of total traffic as a weighting factor is reasonable in the context of carrying out an SMP assessment in the market for trunk segments. As previously stated by Oftel, the traffic weighting is intended to provide a proxy of the number of private circuits connected to each Tier 1 node. The traffic weighting data provided the best information available to Ofcom for this purpose, and Ofcom is not aware of any way in which the use of a total traffic weighting would bias its analysis. The use of a different weighting analysis might shift the curve in Figure B.6 up or down, or change its level of convexity flawing therefore the real incentive for competition that can instead be inferred from Figure B.6. However, any such changes would be unlikely to change the inference that Ofcom drew from Figure B.6, namely that it shows that, while there is potential for competition on a number of trunk routes, that as yet such potential has significant limitations. BT's share of the overall trunk market given its current high prices is a more telling indicator of the lack of competitiveness in this market than network reach information, which is more useful as an indicator of the potential for future competition.

B.132 Ofcom agrees with the view expressed by network communications providers that communications providers need to be located at or very close to Tier 1 nodes in order to provide a constraint on BT. This is because of the significant time needed and cost that must be incurred in order for a competing communications provider to self supply such additional links, or to buy PPCs from BT. BT is obviously able to provide such links to itself very quickly and has clearly already built out to all of its own nodes. This view contradicts BT's assertion that a proximity of 15km from a communications provider's point of presence to a BT Tier 1 node was likely to be adequate to enable it to compete on a given route. Ofcom is therefore of the view, given the evidence and arguments outlined elsewhere in this section, that Figure B.6 shows that, while there is potential for competition on a number of trunk routes, that as yet such potential has significant limitations.

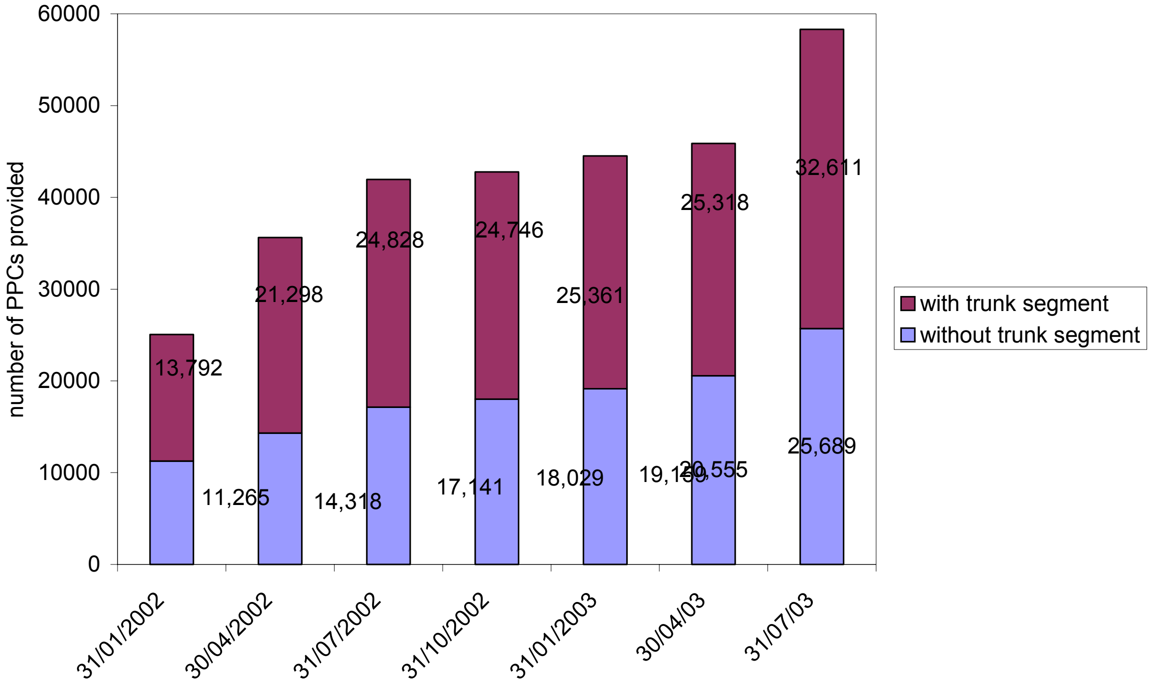
Information on PPC trunk segments sold to other communications providers by BT

B.133 The previous section suggests that other communications providers may, in many cases, be forced to use BT as a source of trunk segments if they are to be able to provide traditional interface leased lines products to end customers. BT has additionally supplied Ofcom with information concerning the proportion of PPCs that it has sold (in the period up to the end of July 2003) that include a trunk segment. When purchasing a terminating segment from BT, other communications providers currently have the choice of also buying a trunk segment or self-providing (or buying from another communications provider if a price can be negotiated). Oftel set charges for BT's terminating segments (see the PPC Phase 2 Direction), but the charges for trunk segments were set by BT, not Ofcom.

B.134 Communications providers have informed Ofcom that they generally prefer to self-provide trunk segments where they can. Given the above considerations, Ofcom's interpretation of such information is that, where a large proportion of PPCs are sold with trunk segments, this is likely to suggest that other communications providers are unable to either self provide trunk segments or source them from elsewhere (especially given the currently high trunk segment charges as outlined in paragraphs B.108-B.112).

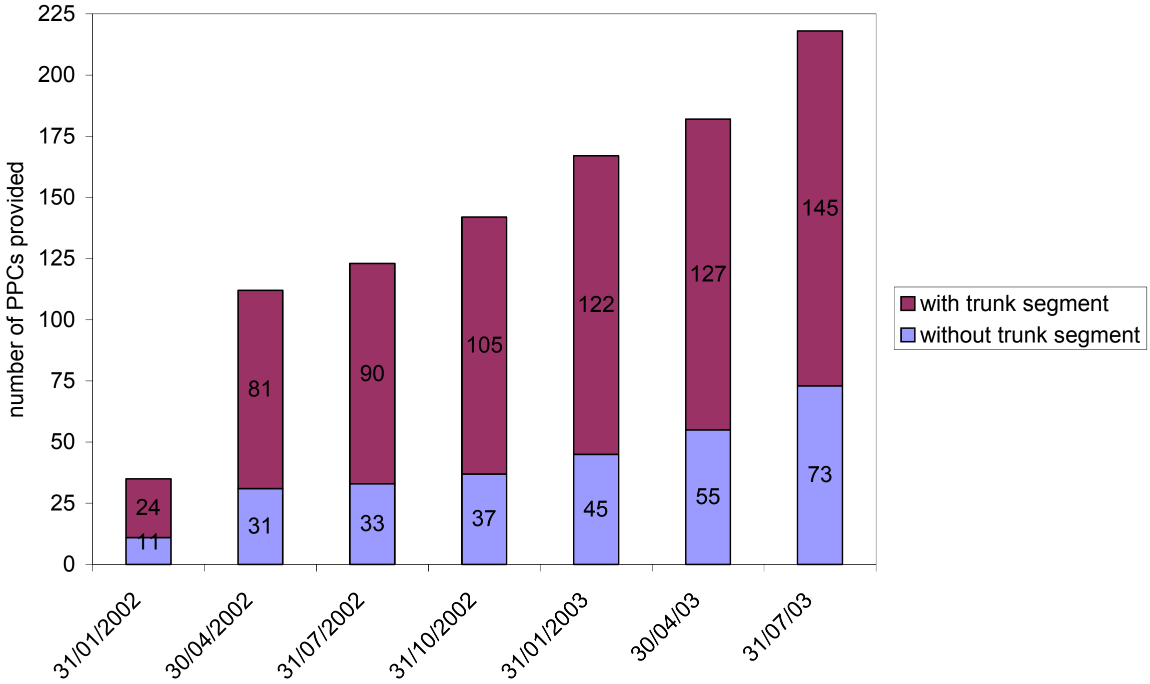
B.135 The results of such an analysis should be interpreted with a degree of caution, since the PPCs are still a relatively recent introduction (they have been available since August 2001). A further relevant consideration is the extent to which any dependence on BT's trunk segments by other communications providers will persist. However, Ofcom believes that the results shown below are striking and as such strongly suggest that other communications providers are currently dependent on BT for the supply of trunk segments in most cases.

Figure B.7: Low bandwidth (<= 2Mbit/s) PPCs – numbers provided with and without trunk segments



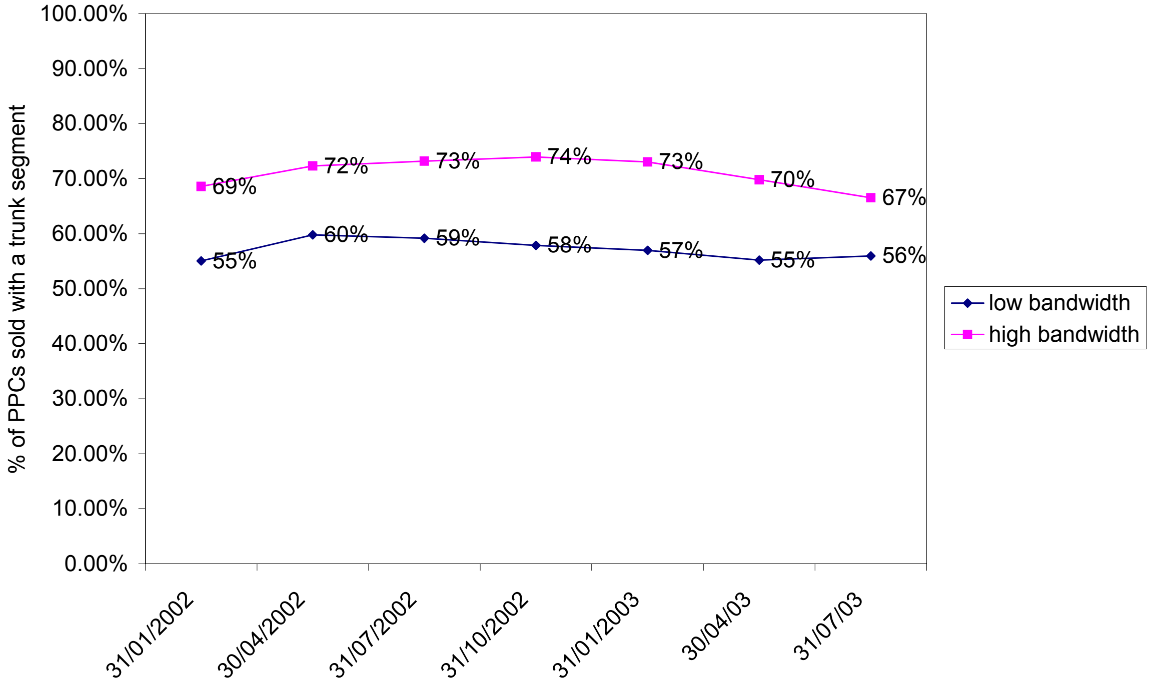
Source: BT data and Oftel analysis

Figure B.8: High bandwidth (>= 34Mbit/s) PPCs – numbers provided with and without trunk segments



Source: BT data and Oftel analysis

Figure B.9: PPCs – % provided with and without trunk segments



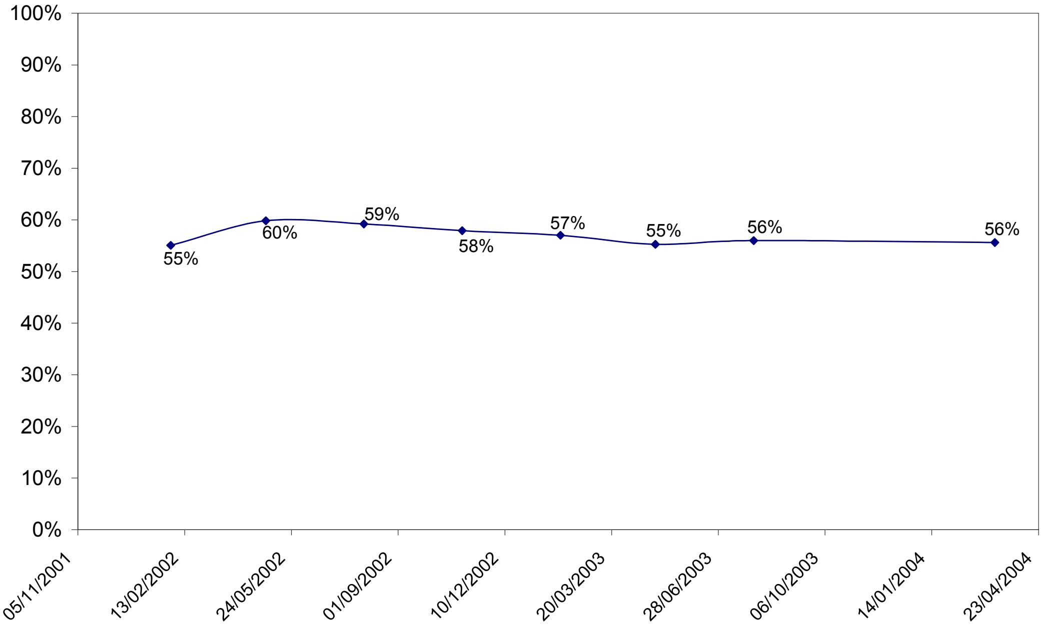
Source: BT data and Oftel analysis

B.136 In Figure B.9 above, the total (i.e. sum of low and high bandwidth) time series is indistinguishable from that for low bandwidth, since as indicated in the previous Figures, the number of low bandwidth PPCs sold far exceeds the number for high bandwidth PPCs. The figures above show that:

- the majority of the PPCs that BT has sold include a trunk element;
- this proportion does not appear to be declining substantially; and
- the above is particularly marked in the case of high bandwidth PPCs.

B.137 The latest data available to Ofcom suggests that as of March 2004, 56% of PPCs are now sold with trunk segments, the same as the figure for mid 2003, showing that the degree of reliance on BT is not falling over time (see Figure B.10 below) Ofcom does not have the split for this between high and low bandwidth PPCs, but would expect it to follow the trend highlighted above.

Figure B.10: All PPCs – % provided with and without trunk segments



B.138 The data presented in this section suggests that other communications providers are, to a significant extent, dependent on BT for the supply of trunk segments. In this review it is also relevant to take a forward-looking view and so Ofcom has considered the extent to which this dependence is likely to persist. Communications providers have been unable to provide Ofcom with estimates of the cost of trunk network expansion, due to the varied, bespoke nature of such projects. However, submissions received by Ofcom from other communications providers suggest that none of the other communications providers intend to expand their trunk network coverage within the next year or so. It appears likely to Ofcom that such expansion would be too costly and time consuming for the prospect of it to provide a substantial constraint on BT's conduct. Ofcom therefore considers that, even on a forward-looking basis, BT's ubiquity puts it at a very significant advantage over other communications providers in the trunk segment market.

B.139 Ofcom would expect the proportion of PPCs sold with trunk segments to decline over time as communications providers optimise their networks to reflect the Tier 1 pricing scheme referred to by BT. However, such network build out will take time, and, as demonstrated by Figures B.7 and B.8, competing communications providers are currently dependent on BT for the supply of trunk segments to a very significant extent. The proportion of PPCs sold with trunk segments having remained at a broadly constant level between January 2002 and July 2003. Data of this sort will be considered when Ofcom next reviews leased lines markets.

B.140 BT also suggested that an analysis similar to the one outlined above (using older data) was potentially misleading since several of the PPCs covered by the chart above could be routed without a PPC trunk segment, i.e. had been supplied with "unnecessary trunk". BT's analysis suggested that the percentage of circuits supplied with "necessary" trunk might be in the region of 25% to 40% for high and low bandwidth PPCs respectively. The implication of BT's analysis was that such "unnecessary trunk" was irrelevant for the purposes of the SMP assessment.

B.141 Ofcom considers that, given that BT's trunk charges are currently above cost (see Table B.4 above for details), the high proportion of PPCs that are sold with an element of a trunk segment provides persuasive evidence of communications providers being dependent on BT for the provision of trunk segments. Asserting that many circuits are not “non-optimally routed” ignores the reality that it is not economic for communications providers with multiple network nodes to interconnect at all of BT’s Tier 1 nodes. Competing communications providers face a fixed per node cost of interconnection that in many cases may mean that it is only economic for the communications provider to interconnect to a subset of nodes that may, at a local level, result in some circuits being routed “non-optimally”.

Economies of scale

B.142 Ofcom’s opinion is that the trunk segments market is characterised by large economies of scale. The reason for this is that there exist large fixed costs, for example the costs of supplying duct and cables. Once these large up-front costs have been sunk, the cost to communications providers of supplying larger volumes of individual circuits (or higher bandwidths) is relatively small. This characterisation is supported by cost volume relationships (CVRs) previously estimated on behalf of Oftel by Europe Economics as part of a study commissioned in 2000.

B.143 Europe Economics developed a ’bottom-up’, economic-engineering model of traditional interface leased line costs. Such models are typically very useful in informing the way in which costs vary with volume, because in their construction they focus on building up the costs by identifying the relevant cost drivers and the way in which costs arise. The CVR is the percentage increase in total cost arising from a small percentage increase in volume. A CVR equal to 1 would imply no economies of scale; a CVR of less than 1 indicates the presence of economies of scale, and the lower the figure, the greater their extent. The CVRs used below refer to the core element of the provision of end to end leased lines, and as such are useful as a proxy for the cost relationships inherent in the provision of intra Tier 1 transmission.

B.144 The CVRs estimated by Europe Economics imply the existence of substantial economies of scale in the provision of trunk segments. For example, its model calculated the following CVR slope coefficients (expressed in % terms) relating to core networks, where volume measures total capacity in terms of Mbit/s:

- duct – 0%;
- optical fibre – 11%;
- SDH equipment – 46%; and
- operating costs– 30%

B.145 Corresponding estimates calculated by BT were as follows:

- duct – 36%;
- optical fibre – 30%; and
- SDH equipment – 91%

B.146 These factors outlined above mean that Ofcom considers that the provision of trunk segments is characterised by significant economies of scale. In order to assess whether or not BT is able to exploit these economies of scale, it is necessary to compare the volumes of trunk segments provided by BT relative to other communications providers. Since BT’s current share of the total trunk market is at least 70% (see discussion of quantitative data relating to trunk segments), it seems likely that BT is in a position to exploit these scale economies to a greater extent than its competitors. This might not be the case if other communications providers were to achieve higher utilisation levels than BT. Ofcom considers this to be unlikely on the majority of trunk routes, since BT's number of trunk circuits sold is so much greater (see the discussion of quantitative information above) than that of the other communications providers.

B.147 In summary, it seems likely that BT's position in the trunk segments market is substantially strengthened by its ability to exploit economies of scale.

Economies of scope

B.148 Economies of scope arise with the production of the trunk segments when some of the costs of supplying trunk segments can be shared with other products. The magnitude of economies of scope depends on two factors: the range of products and services with which some common costs are shared, and the volume of these various products and services.

B.149 Communications providers use their trunk networks to carry a range of products other than traditional interface leased lines. These include PSTN, ATM, and frame relay. The evidence made available to Ofcom regarding the utilisation of communications providers' trunk networks suggests that the provision of leased lines accounts for a no greater proportion of the total trunk capacity of those other communications providers for which information is available than it does for BT. It therefore seems that, on the basis of the first factor influencing the magnitude of economies of scope, BT is not in a position to exploit these to any greater degree than other communications providers.

B.150 However, on the basis of the second factor influencing economies of scope, that is the actual volumes of the various products and services generating the economies of scope, BT appears to be in a better position to exploit these economies of scope than other communications providers. This is because BT has a larger customer basis for any of these products and services and serves a larger volume for each of them than any other communications provider.

B.151 Ofcom is therefore of the view that BT enjoys greater economies of scope in the trunk segment market than other communications providers and that, by enabling BT to obtain a cost advantage over its competitors, it is a source of market power for BT.

Product/services diversification

B.152 BT's dominant position in certain product markets (see, for examples, Oftel's review of the *Fixed Narrowband Retail Services Market* at www.ofcom.org.uk/static/archive/oftel/publications/eu_directives/2003/fix_narrow_retail0803.pdf) could potentially be levered into other markets (including the trunk segments market) via the use of bundling. However, this type of conduct does not appear to impact on trunk segments, which BT has typically not offered as part of a bundle of goods.

Vertical integration

B.153 Vertical integration can be used to promote dominance. In the context of the trunk segment market, vertical integration refers to the integration between the upstream wholesale markets (both TISBO and trunk segments) and the downstream traditional interface retail leased line markets.

B.154 BT's market share in the combined traditional interface retail leased lines markets is very large, having been consistently in the region of 70% on a revenue basis (see the section on quantitative information relating to trunk segments). Wherever a BT retail circuit includes a trunk segment, the trunk segment is supplied via self provision. Since BT does not purchase trunk segments from other suppliers, other communications providers are unable to compete for such sales, and so this effectively forecloses a very significant proportion of the total trunk segment market to other communications providers.

B.155 This puts BT at a significant advantage over other providers of trunk segments, providing it with a predictable high volume of capacity. There is an interaction with economies of scale, discussed above. BT's high retail market shares and its self-provision of trunk segments enable it to exploit greater economies of scale than its competitors. This puts BT at a cost advantage for the remaining trunk segments (i.e. those not part of BT retail leased lines), for which BT and other communications providers potentially compete.

B.156 The 'multi-vendor circuit' argument provides a potential benefit to BT from being vertically integrated. This argument refers to the fact that some retail customers may avoid purchasing leased lines that are made up of elements coming from more than one communications provider's network. Given the ubiquitous nature of its network, BT is the communications provider that is in the best position to satisfy customers with uni-vendor preferences. BT is therefore the communications provider best positioned to supply the entire leased line on its own network.

B.157 Some evidence available to Ofcom suggests that some customers have uni-vendor preferences. But there is insufficient evidence available to Ofcom to reach a firm conclusion on how widespread such preferences are, or the extent to which they will persist into the future. Therefore, while it is a potential source of advantage and market power for BT, Ofcom has not relied on it in reaching its conclusion.

B.158 As discussed in its assessment of SMP in the market for retail low bandwidth traditional interface leased lines, Ofcom expects that BT's share of the traditional interface retail leased lines markets will decline over time, following the full impact of the introduction of cost oriented PPCs. The extent of BT's advantage from vertical integration may, therefore, be lower on a forward-looking basis. However, as discussed above, Ofcom does not consider that in the next two years increased competition in the retail low bandwidth traditional interface market will be sufficient to remove BT's SMP. Therefore, even on a forward-looking basis, Ofcom expects that vertical integration and its interaction with economies of scale will provide a source of market power for BT in the wholesale trunk segment market.

Distribution and sales network

B.159 Certain products rely on costly sales/distribution systems in order to reach customers. The ownership of such systems may confer an advantage on a firm vis-à-vis its competitors, including potential competitors. Such considerations do not apply to the trunk segments market, which is characterised by a relatively small number of buyers, i.e. other communications providers, who can easily maintain an awareness of the prices and functionality of the products offered by vendors, who are also few in number. The size of BT's sale and distribution network does not therefore strengthen its position in the trunk market.

Access to capital markets and financial resources

B.160 BT's larger overall size and relatively strong balance sheet may put it at an advantage when it comes to funding new network infrastructure. A number of other communications providers have recently faced financial pressures that may have constrained their willingness and ability to invest in new areas. For example, some communications providers may be reliant on securing orders at the retail level before investing in network infrastructure, and may face a higher cost of capital.

B.161 In addition, Ofcom considers that some end users may be inclined to avoid, where possible, using products that rely on network inputs from certain communications providers that have been facing financial difficulties. BT, on the other hand, is perceived as being relatively secure and financially stable at a time when financial markets are volatile and investors risk-averse. Ofcom’s view is therefore that BT’s superior access to capital markets and financial resources may put it an advantage in this market. Ofcom does not consider this to be a key factor in its SMP assessment however.

Wholesale trunk: customer-related criteria

Countervailing buying power

B.162 All the buyers of trunk segments from BT are communications providers. Because of this, they are relatively few in number (compared, for example, to certain retail markets). If these other communications providers are able to exercise a strong negotiating position, BT’s ability to act independently of these customers will be undermined. However, the information available to Ofcom (e.g. on the proximity of communications providers’ network nodes to those of BT, see Ofcom’s discussion of network reach information above) suggests that on many trunk segment routes BT’s trunk segment customers are unlikely to have any significant buyer power, since they are unable to credibly threaten to leave BT and get supply from another communications provider for trunk segments. For other communications providers, the alternatives to buying trunk segments from BT are buying from another communications provider and self-provision.

Wholesale trunk: market related criteria

Ease of market entry

B.163 Evidence supplied to Ofcom by BT (such as the maps described in this Annex) shows that many inter-city routes have been already been built by a number of communications providers. It seems less likely that building out on the remaining routes will occur, since these are typically routes where traffic density is lower.

B.164 Ofcom’s view is that the self-provision of trunk segments by other communications providers is unlikely to be viable in many cases due to the very significant capital expenditure required to dig duct and install fibre and equipment. Given the small retail market shares that many other communications providers currently have (see the quantitative information sections for traditional interface retail leased lines and high bandwidth TISBO), this may be uneconomic. BT’s status as a former monopoly, and its large traffic volumes, mean that this rollout has been economic for BT.

B.165 Ofcom has been unable to obtain a usable estimate of the cost to other communications providers of extending trunk network capacity beyond current levels, due to the highly bespoke nature of such projects. However, it seems certain that the sunk cost required would often be very significant, as would the amount of time required to complete such a project. This suggests to Ofcom that the prospect of competition developing on less dense routes on a forward-looking basis is limited within the timeframe relevant to this review.

Absence of potential competition

B.166 It seems extremely unlikely that new companies will enter the market, or that existing players will choose to expand their trunk network capacities beyond the areas currently served. This is discussed in the section on barriers to entry above.

Barriers to switching

B.167 Self-provision is the main potential source of switching in the trunk market. As discussed above, this is typically not economic on the routes that have not already been built on by communications providers. This market is therefore characterised by barriers to switching, but Ofcom has primarily based its SMP assessment on other considerations.

Customers' ability to access and use information

B.168 This criterion is not relevant for the assessment of the trunk segments market, since the buyers of PPCs (including trunk segments) are few in number and well-informed.

Wholesale trunk: intensity of competition criteria

Barriers to expansion

B.169 Ofcom believes that the importance of barriers to entry in markets for trunk segments is such that it is not essential to consider further constraints provided by barriers to expansion. This is because competition in wholesale markets appears unlikely to extend beyond the existing market players, for the reasons outlined in the discussion of barriers to entry. It may be that a loss of retail market share experienced by BT will enable an expansion of the *addressable* market, i.e. the part of wholesale markets not foreclosed by BT's dominance at the retail level. In the light of these factors it seems inappropriate to further consider barriers to expansion.

Active competition on non-price factors

B.170 Non-price competition refers to differentiation between products and between providers, for example in terms of quality, product diversity or reputation. Trunk segments are products that on average are not prone to differentiation and for which reputation does not play a major role. An exception might be the scope for product differentiation that is provided by offering different quality of service. This can, for example, affect the reliability of the services or the speed at which faults are dealt with. Ofcom is not aware that competition on non-price factors, or its absence, is a source of market power for BT in this market, and that this criterion is therefore unlikely to play a significant part in its SMP assessment.

Conclusion on assessment of market power in wholesale trunk segments

Summary

B.171 Ofcom is aware that the number of communications providers capable of providing trunk segments on routes appears to differ significantly: on some routes only BT provides services; on others there exists a significant number of competing communications providers. For the reasons set out in Annex A Ofcom has concluded that a national market exists for trunk segments. Having considered the evidence, Ofcom concludes that BT has SMP in the national market for trunk segments. Ofcom has reached this opinion in the light of the available information concerning, in particular:

- the ubiquity of BT's infrastructure and number of routes subject to little or no competition
- barriers to entry ;
- economies of scale;
- the relatively high percentage of terminating segments with which trunk segments were purchased from BT (especially given the charges set by BT); and
- BT's vertical integration.

Market power in wholesale trunk segments- application to trunk segments used to support SDSL based circuits

B.172 As outlined in Annex A, SDSL based circuits fall into the market for low bandwidth traditional interface symmetric broadband origination. Core conveyance relating to these services is carried across BT's ATM network, rather than its SDH network. Most of Ofcom's analysis has been conducted with specific reference to this network. However, Ofcom believes that the key aspects of its analysis are equally applicable to services conveyed across the ATM network, since such conveyance is likely to be characterised by:

- barriers to entry in terms of replicating the ubiquity of BT's network;
- economies of scale; and
- similar issues with regard to capturing a share of conveyance across the ATM network are likely to arise as a result of BT's vertical integration.

B.173 Ofcom therefore considers that its SMP finding is equally applicable to trunk segments conveyed across the ATM network, and that the analysis is not undermined by the fact that current sales are insufficient for Ofcom to have carried out a wide-ranging quantitative analysis. This is because SDSL is an emerging technology, currently restricted to a very small number of users, that is unlikely, due to this newness and other factors such as distance limitations, to displace a large proportion of the current volumes of SDH based leased lines products within the next 2-3 years

Likelihood of competition developing in the future

B.174 Ofcom has considered the potential impact of external factors on this market during the period covered by this review. Ofcom's view is that there are no developments that would generate sufficient competitive pressures within the next 2-3 years to alter the current finding of SMP. This is because the sources of SMP are high structural barriers to entry and because demand conditions and technological progress are unlikely to be able to reduce the strength of these entry barriers in the near future. However, Ofcom will keep market conditions under review.

Market for low bandwidth traditional interface symmetric broadband origination for the UK apart from Kingston upon Hull

B.175 As explained in Chapter 2, the market power assessment of the traditional interface symmetric broadband origination ("TISBO") markets will be carried out in the absence of any remedy at both the wholesale and the retail levels.

B.176 Symmetric broadband origination is capacity between customers' premises and Tier 1 nodes on BT's network (or the equivalent on other communications providers' networks). It therefore involves local infrastructure. Figure 2.1 in Chapter 2 shows the distinction between TISBO and other wholesale services.

B.177 Competition in the markets for TISBO involves buyers that are also suppliers. Other communications providers may buy TISBO in some locations (where they do not own network) while self-providing in other locations (where they have network presence). Competition is limited when other communications providers cannot supply or self-provide TISBO and must therefore buy from BT. No instances of other communications providers buying TISBO from communications providers other than BT has been reported to date, although that may be a future development.

Low bandwidth TISBO: summary of conclusions

B.178 Ofcom considers that in the absence of wholesale and retail regulation, BT has SMP in this market. Ofcom has reached this conclusion based on an analysis of, primarily (see the detailed assessment for the examination of other criteria):

- The ubiquity of BT's infrastructure and the fact that such infrastructure is not easily duplicated;
- BT's ability to exploit economies of scale and scope;
- The existence of significant barriers to entry including sunk costs; and
- Vertical integration.

Low bandwidth TISBO: quantitative information criteria

Market share

B.179 Given the relatively recent introduction of the two PPC Directions and the infancy of the low bandwidth TISBO market, it has been difficult to collect reliable market share data. Furthermore, market power is to be assessed in this market in the absence of regulation, so market shares in the absence of PPCs would be the more relevant statistics. The evidence collected by means of information requests is however helpful to get a first impression of the situation. BT self-provides all its low bandwidth TISBO services. Among other communications providers, the extent to which self-provision of low bandwidth TISBO services occurs varies significantly depending on the strategies and the size of the other communications providers. The percentages submitted spread between 65% and less than 1%.

B.180 In the absence of reliable data on the wholesale market, Ofcom has analysed retail market shares as an imperfect proxy for shares at the wholesale level. The reasoning behind this approach is as follows. If other communications providers self-supply all their TISBO and all the TISBO services are used for pure leased line purposes, then retail market shares should be equal to TISBO market shares. However it is known that other communications providers are in many cases dependent on BT for terminating segments. Ofcom asked communications providers to report the percentage of TISBO they buy from BT in order to supply low and high bandwidth traditional interface leased lines. The percentages reported varied from 35% to more than 99%. Since BT always self-provides wholesale inputs for its own retail leased lines, BT's share of TISBO is therefore larger than its retail share.

B.181 But there is a second effect. Prior to the availability of PPCs, BT's retail market share included circuits provided to other communications providers to be used as a wholesale input. So the 'retail' statistics captured both the (wholesale) sale by BT to the other communications provider, and the other communications provider's retail sale. This would tend to mitigate the extent to which BT's retail market share might underestimate BT's TISBO market share.

B.182 The issues involved in using retail market shares as a proxy for wholesale market shares are illustrated in the hypothetical example below, in a market in which there are 100 retail leased lines, 75 of which are sold by BT, and 25 of which are sold by other communications providers. All 25 of the other communications providers' retail leased lines are sold using TISBO supplied by BT as 'retail circuits'. In this hypothetical example:

- BT's true share of TISBO would be (75+25)/(75+25) =100%;
- BT's true share of the retail market would be (75)/(75+25) = 75%, i.e. necessarily smaller than its true share of the TISBO market; and
- BT's measured share of the retail market would be (75+25)/(75+25+25) = 80%

B.183 Data described in the retail low bandwidth traditional interface leased line market power assessment can be summarised as follows:

Table B.5: BT's market shares by revenues:

	97 – 98	98 – 99	99 - 00	00 - 01	01 - 02	02 - 03
BT's share	75%	75%	73%	77%	77%	77%

Source: Oftel/Ofcom Market Information

Table B.6: BT's market shares by volumes

	97 - 98	98 – 99	99 - 00	00 - 01	01 - 02	02 - 03
BT's share	83%	76%	78%	87%	82%	82%

Source: Oftel/Ofcom Market Information

B.184 BT's retail market shares, in the light of previous comments, suggest that BT's market shares in the low bandwidth TISBO market are likely to be even higher. A very rough attempt at estimating how much higher this would be can be carried out as described in the following paragraphs, where 2001/02 is used as an example.

B.185 The 2001/02 data is known to better reflect the actual number of leased lines sold by each communications provider, since it no longer includes a significant number of low bandwidth TISBO services that have been migrated to PPCs (about 34,000, based on data supplied by BT). In that year, BT sold about 202,000 low bandwidth traditional interface digital leased lines and other communications providers about 57,000. Since each leased line requires two TISBO services, the above figures mean that BT used about 404,000 TISBO services and that other communications providers used about 114,000. The total volume of TISBO services is therefore 518,000.

B.186 On the basis of information gathered during the market review, Ofcom can derive some estimate of BT's share of TISBO for that year. Assuming that all the migrated circuits are used to supply leased lines and that communications providers have migrated all the circuits used as a wholesale inputs, then it can be inferred that communications providers other than BT self-supplied 80,000 (i.e. 114,000 less 34,000 PPCs via migration) TISBO services. BT's market share therefore amounts to 84% (that is, 404,000 supplied to itself and 34,000 sold to other communications providers: a total of 518,000). Ofcom considers that its second assumption is conservative since it knows that more leased lines were migrated to PPCs in 2002/03 (about 50% more). This would suggest that BT's market share for low bandwidth TISBO in 2001/02 should be higher, at about 88% (the sum of 404,000 and 34,000 and 17,000 divided by 518,000).

B.187 Drawing on the EC Guidelines (paragraph 75), Ofcom considers that its estimate of BT's market share supported by the evidence received, i.e. well in excess of 50%, should be interpreted as evidence of the existence of a dominant position. In addition, the persistence of BT's retail market share at high levels is also to be interpreted as a sign of market strength in low bandwidth TISBO. This is because BT is known to self-provide all its TISBO services as well as a significant proportion of the TISBO services for many other communications providers' leased lines.

B.188 A caveat to the above analysis is that it focuses on TISBO as an input into low bandwidth *retail leased lines*, although, as discussed above, TISBO can be used as an input into a number of other retail services. Ofcom accepts that these market shares are not a perfect proxy, but is not aware of any reason why focusing on retail leased lines would bias BT's market share downwards. The data Ofcom has been able to gather from communications providers suggests that BT and other communications providers on average supply leased lines and other services in roughly equal proportions across their (core) networks, and hence that these figures should provide a reliable proxy.

Excess pricing and profitability

B.189 In the absence of regulation Ofcom considers that BT would set excessive prices for low bandwidth TISBO. Ofcom reaches this conclusion based on past experience. Before BT was required to provide PPCs, other communications providers had to buy low bandwidth TISBO from BT as part of retail leased lines at BT's retail prices. These were substantially above cost-based prices. Ofcom reaches this conclusion for two reasons. First, Ofcom notes that BT's ROCE on digital low bandwidth traditional interface retail leased lines is well in excess of its cost of capital of 13.5% (see Table B.3 above). Second, BT's retail prices are significantly higher than the cost-based charges that Oftel set in the Phase II Direction for high bandwidth terminating segments. For example, the table below compares, for the rental of 2Mbit/s circuits, PPC service based charges with BT's retail charges as of December 2002 for a retail leased line.

Table B.7: Comparison of BT's retail and PPC charges (2Mbit/s circuits)

	PPCs service-based charges	Retail prices
Rental charge per local end per year	£658	£1,900
Rental charge per main link	£1,356	£2,150

per year (fixed)		
Rental charge per main link per year (per km)	£139/km	£310/km

Source: BT, PPC Phase 2 draft Direction

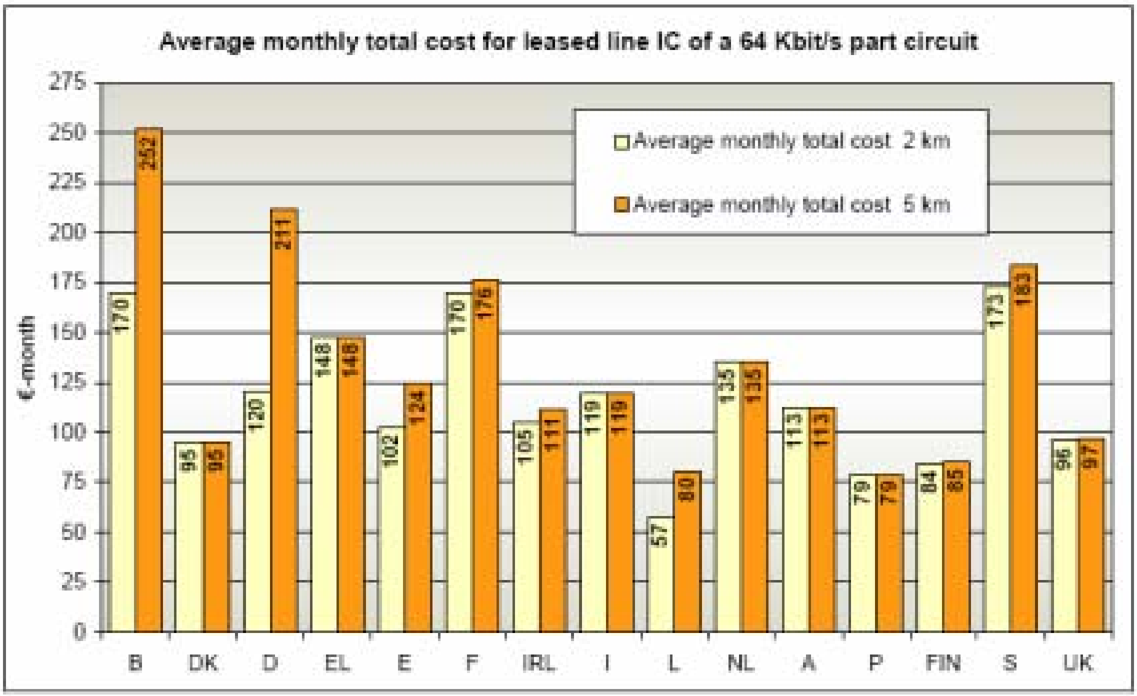
B.190 Even after BT was required to make available PPCs, BT initially set charges for low bandwidth terminating segments that Oftel had to revise downwards significantly in the Phase II PPC Direction. These reductions were needed in order for the charges to move further in line with costs.

B.191 Ofcom is of the view that BT's capacity to keep the charges well above the cost-oriented level in the absence of wholesale regulation, as well as in the presence of a wholesale regulation that does not set charges, is indicative of a certain degree of market power.

International benchmarking - comparison with other EU countries

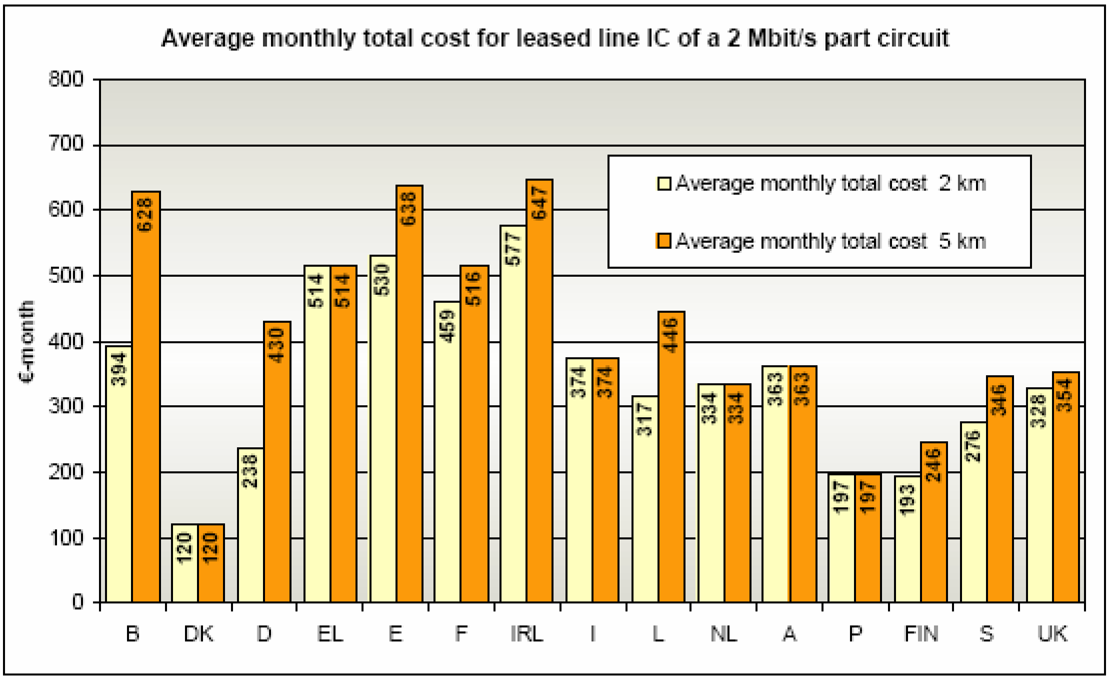
B.192 The European Commission's *9th Report on the Implementation of the Telecommunications Regulatory Package* (November 2003) includes comparisons for wholesale leased lines.

Figure B.11: International comparison of low bandwidth TISBO prices – 64kbit/s



Source: European Commission

Figure B.12: International comparison of low bandwidth TISBO prices – 2Mbit/s



Source: European Commission

B.193 The tables suggest that the prices in the UK for low bandwidth TISBO services compare favourably with those in other Member States, with only five other countries having lower prices.

B.194 This evidence should, as mentioned above, be treated with caution in view of the problems with international comparisons arising from differences in circumstances between countries. BT's PPC prices are the subject of regulation, unlike the TISBO prices in some other Member States. This is why Ofcom has decided not to rely on the international benchmarking criterion in its assessment of BT's market power.

Low bandwidth TISBO: firm-related criteria

Technological advantages or superiority

B.195 The discussion of this criterion in Ofcom's analysis of SMP in the market for trunk segments is equally applicable to the markets for TISBO. It is repeated below.

B.196 This criterion is of minimal relevance since:

- the technology of leased lines is well established and known to all communications providers; and
- the incumbent is supplied with technological inputs by the same firms as other communications providers.

B.197 BT has additionally stated that it operates a relatively expensive PDH network and a modern SDH network, while its competitors only operate modern SDH-only networks. This could be viewed as indicating that BT is in some (limited) aspects of its technology at a disadvantage relative to other communications providers. Ofcom, however, considers that these factors are not significant enough to make this criterion an essential part of its market power assessment.

Control of infrastructure not easily duplicated

B.198 The network infrastructure required to provide TISBO is not easy to duplicate, in the sense that it takes time and money to build. Network diagrams such as those described in Ofcom's discussion of trunk segments market power typically relate to core networks, and as such paint an incomplete picture of the relative abilities of communications providers to provide TISBO. However, they do in the main suggest that other communications providers have been unable to replicate the reach of BT's core network. The economics of telecommunications networks are such that this effect is in most cases greatly magnified in the case of access networks.

B.199 As a former monopolist, BT's network is ubiquitous in its coverage. A corollary to this statement is that most of BT's network costs are sunk. This implies that BT has the infrastructure at its disposal to supply TISBO segments in most places in the country within a reasonable period and without incurring substantial costs. In other words, the ubiquity of BT's network makes the cost of marginal deployment of TISBO lower and makes it easier to reach many locations.

B.200 Most other communications providers are (recent) entrants and are still in the process of building their networks. This implies that other communications providers' local networks are not extensive and that they would need to incur sunk costs to extend local infrastructure. As outlined above, comments made by several leased line users indicate that BT is often the only traditional interface leased line supplier outside the main routes and the main cities, i.e. that other communications providers are unable to supply at competitive rates in these locations, implying that other communications providers are not in a position to profitably self-supply TISBO services outside these main routes and main cities.

B.201 Mobile communications providers, who use RBS backhaul circuits (one of the TISBO services), have confirmed that BT is their main supplier when they cannot self-supply by means of microwave radio links due to technical or cost reasons, because BT is almost always in a position to supply the required TISBO functionality faster and cheaper than the other communications providers. (The extent of self-provision of RBS backhaul circuits by mobile operators and its impact on market power assessment is further discussed under the 'countervailing buying power' criterion). As one large user told Oftel, the ubiquity of BT's infrastructure means that BT has no competitors for the provision of traditional interface leased lines in a significant area of the UK. While other communications providers do in many cases have widespread access networks, cable communications providers are in general not able to provide symmetric services on an efficient basis, since their networks are designed for the transmission of asymmetric traffic flows.

B.202 The above considerations lead Ofcom to consider that difficulties in duplicating infrastructure is a relevant criterion for its TISBO market power assessment. Further Ofcom wishes to draw the attention to the fact that sunk costs are discussed further in the following section on ease of market entry, as is the extent to which the competition problems caused by ubiquity and barriers to entry differ by bandwidth.

Economies of scale

B.203 Symmetric broadband origination is characterised by significant economies of scale. The main economies of scale in supplying TISBO services derive from the existence of large fixed costs, namely the costs of building ducts and laying fibre or copper. Once the ducts are built and the copper or fibre laid, the cost of supplying additional TISBO is relatively small.

B.204 Other economies of scale arise at the local exchange (first network node) as well as the third party site, since the costs of equipment at the two sites do not increase significantly with capacity. The more leased line customers are served by the same local exchange or at the same third party site, the higher the capacity of the equipment that can be installed and the cheaper (per customer) it is to serve them.

B.205 In other words, the average cost of supplying TISBO services to a given location decreases with the number of TISBO services at that location. This means that the extent of economies of scale exploited for TISBO is likely to vary with geographical locations, i.e. with customer density.

B.206 Economies of scale for TISBO can be characterised by estimates of cost volume relationships (CVRs).

B.207 Ofcom has the following CVR estimates available to it for this purpose:

- an estimated CVR for end to end leased lines, provided by BT to Oftel in 2002 based on its CCA financial statements for 2001/02. In these statements, the LRIC of 'inland private circuits' was £1,003m. The Fully Allocated Cost (FAC) for the same period was £1,295m, giving a ratio of 80%. This information can be interpreted as saying that, for each aggregate unit increase in private circuit volumes, the associated LRIC would increase by 80%; and
- CVR estimates for specific network components from the Europe Economics bottom up model described in the analysis of economies of scale in the market for trunk segments. For the access network, these include the following:
    - duct: 5%
    - copper: 35%
    - fibre: 22%
    - operating costs: 48%

B.208 The estimated CVRs above all suggest that the provision of TISBO is characterised by economies of scale. The precise extent of these economies of scale may be debatable however. In order to assess whether or not BT can exploit such scale economies, Ofcom needs to consider the extent to which BT enjoys larger economies of scale than other communications providers in any given area.

B.209 While BT and other communications providers both supply TISBO services in the same local areas, Ofcom's view is that BT enjoys larger economies of scale than other communications providers because it almost always carries more traffic in any given area. This is because BT's customer base is larger than that of any other communications provider at the local access level for low bandwidth TISBO – see the market share figures included in the analysis of quantitative information.

B.210 This means that BT can serve more customers using the same equipment at local exchanges and at third party sites and so obtain better equipment utilisation, or use higher capacity equipment that is cheaper on a per customer basis. It also implies that BT can benefit from the existing ducts to a greater extent. As a result, Ofcom considers that BT is likely to enjoy larger economies of scale at the local access level than other communications providers.

B.211 In areas where other communications providers do not supply TISBO services, Ofcom considers that BT enjoys economies of scale and that other communications providers do not. This is because other communications providers must then buy TISBO services from BT, and because BT does not face any competitive pressure to pass on the economies of scale benefits to its buyers (in absence of any remedy). Since the number of areas in which BT is the only supplier of TISBO services is large, Ofcom is of the view that overall BT enjoys significantly greater economies of scale in the provision of TISBO services than other communications providers.

B.212 Ofcom believes that other communications providers are most likely to compete with BT in areas where the population density is high so that the level of capacity utilisation can be maximised. In these areas, BT and other communications providers benefit from the same flexibility to fill up their capacity in absence of any regulation.

B.213 Ofcom has reached the conclusions that there exist significant economies of scale in the low bandwidth TISBO market and that BT can benefit from them to a larger extent than other communications providers. As a result Ofcom considers that economies of scale are a source of cost advantage and market power for BT in the TISBO market.

Economies of scope

B.214 Economies of scope arise in the TISBO market if the costs incurred to supply TISBO services can be shared with various other products. The magnitude of the economies of scope is influenced by the range of products and services as well as by the volume of each of these various products and services over which the costs are shared.

B.215 Symmetric broadband origination can be used to carry products other than leased lines, though to a lesser extent than trunk segments. Communications providers have indicated that they use TISBO services to provide frame relay, ATM, IPVPN, Internet access, direct voice and wholesale leased lines.

B.216 Ofcom believes that BT enjoys larger economies of scope than other communications providers due to a combination of two factors. First, BT offers a wider range of products than most other communications providers and can therefore spread the cost of the TISBO common inputs over a larger array of products and services. Second, for most or all of these services and products BT carries larger volumes.

B.217 A key economy of scope for TISBO services is the possibility of using ducts to carry products and services other than TISBO. As the costs of digging and laying ducts are substantial and independent of the bandwidth, all communications providers try to take advantage of this and to maximise the number of products that can be supplied using the same ducts. However, only the owner of the ducts can take advantage of this economy of scope which means that BT, with the most ducts is likely to have a significant advantage compared to other communications providers.

B.218 Ofcom therefore considers that BT enjoys greater economies of scope than other communications providers and that this strengthens BT’s market position in the TISBO market.

Low bandwidth TISBO services: marketing and strategies

Product/services diversification

B.219 In the absence of regulation it is likely that BT would not offer TISBO on its own. It would bundle it with trunk segments and another TISBO segment as part of an end-to-end traditional interface leased line sold at a retail price. Indeed this is what BT did before it was required by Ofcom to supply PPCs. However, Ofcom is not relying on this criterion for its market power assessment.

Vertical integration

B.220 BT supplies TISBO, trunk segments and retail leased lines. Where BT provides a retail leased line, it always self-provides TISBO at both ends. Therefore, BT's large market share (in excess of 80%, see Table B.6) in retail low bandwidth leased lines implies that a large volume of the market for TISBO is effectively unavailable for other communications providers to compete for.

B.221 In the absence of wholesale and retail regulation, it is not clear that BT's market share for retail traditional interface leased lines would decline in the next 2-3 years. Therefore, while BT's high market share in retail low bandwidth traditional interface leased lines persists, the corresponding wholesale market is foreclosed to a large degree. This has led Ofcom to conclude that vertical integration is a significant factor for its market power assessment as it is a source of market power for BT in the TISBO market.

Distribution and sales network

B.222 A well-developed distribution system for low bandwidth TISBO is not viewed as a potential indicator of market power, as the suppliers and buyers of low bandwidth TISBO are communications providers, and so relatively few in number and all know each other.

Access to capital markets and financial resources

B.223 BT's larger overall size and relatively strong balance sheet may put it at an advantage when it comes to funding new network infrastructure. A number of other communications providers have recently faced financial pressures that may have constrained their willingness and ability to invest in new areas. For example, some communications providers may be reliant on securing orders at the retail level before investing in network infrastructure, and may face a higher cost of capital.

B.224 In addition, Ofcom has received evidence suggesting that certain end users may be inclined to avoid, where possible, using products that rely on network inputs from certain communications providers that have been facing financial difficulties. BT, on the other hand, is perceived as being relatively secure and financially stable at a time when financial markets are volatile and investors risk-averse.

B.225 Ofcom however considers that the evidence described above is not sufficient to give much weight to this criterion in its market power assessment.

Low bandwidth TISBO services: conclusion on firm-related factors

B.226 In the low bandwidth TISBO market, considerations of firm-related factors provides evidence of BT's market power. In particular, BT's ubiquitous network, an infrastructure that cannot easily duplicated, seems key to BT's market power in this market. Other important factors are BT's advantage over other communications providers from exploiting economies of scale and scope and taking advantage of vertical integration.

Low bandwidth TISBO services: customer-related criteria

Countervailing buying power

B.227 In the market for low bandwidth TISBO, there is very little countervailing power available in the form of self-provision by other communications providers. Indeed other communications providers mostly do not self-provide for low bandwidth because of the costs of doing so relative to expected revenues, given that a significant part of the costs is fixed with respect to bandwidth.

B.228 Even in the case of RBS backhaul circuits, which some mobile communications providers self-supply in significant numbers, Ofcom has concluded that this self-provision does not impose adequate pressure on BT to justify a recognition of countervailing buying power. Ofcom has considered whether mobile operators would opt to self provide if BT raised the price of RBS backhaul circuits above the competitive level.

B.229 If the mobile operators were entirely reliant on purchasing RBS backhaul circuits, self-provision through fixed technology such as fibre or copper would require significant investment to be made. These cost structures would be quite similar to that of an entrant in the TISBO market. Self-provision through microwave radio would not be suitable for these operators. This is because many of their sites would not necessarily have line of sight that could enable microwave radio technology to be used. Hence these operators would find many of their sites unsuitable for self-provision through radio. They would need to incur significant investment costs in acquiring new sites to provision RBS backhaul circuits through microwave radio. Hence the threat of self-provision by these operators will only become effective if the costs of self-provision are below the costs of buying from BT.

B.230 Ofcom has also considered if mobile operators already using a mix of self-provision and RBS backhaul circuits purchase would switch to more self-provision if BT increased its RBS backhaul circuits price. The evidence provided to Ofcom shows those operators who have built a significant proportion of their network themselves choose to purchase backhaul circuits in sites where it has not been practical to self-provide by means of microwave radio. There are various circumstances in which self-provision is not a technically practical or economically effective option – for example, self-provision through microwave radio cannot take place where line of sight is unavailable, or in urban sites (below roof level). In these circumstances mobile operators cannot exert countervailing buying power since self-provision would then require significant investment to be made to lay down copper or fibre.

B.231 The data gathered by Oftel and Ofcom on self-provision by mobile operators shows that it ranges from 0% to about 60%. The same data also allows Ofcom to calculate that BT supplies at least 30% of RBS backhaul circuits needed by each mobile operator. Since the above considerations reveal that mobile operators cannot easily start self-supplying the RBS backhaul circuits supplied by BT, it can be deduced that they do not benefit from significant countervailing power *vis-à-vis* BT.

B.232 The lack of countervailing buyer power in the absence of regulation was visible during the period before Oftel required BT to make available PPCs and set cost oriented charges. Ofcom is of the view that this criterion is not an essential part of its assessment of BT's market power, although it contributes to it.

Low bandwidth TISBO services: market related criteria

Ease of market entry

B.233 As a national incumbent, BT has sunk a significant share of the network costs associated with the provision of leased lines, such as digging and laying ducts, which are very expensive components of the access network.

B.234 This gives BT a very substantial strategic advantage over would-be competitors in the provision of TISBO. In contrast to BT, entrants generally need to sink costs in order to compete at the wholesale level. Communications providers have provided Ofcom with estimates of the levels of these costs, which it is unable to reproduce fully here due to confidentiality issues.

B.235 Estimates of the cost of fibre (per fibre per km) supplied to Ofcom by other communications providers have been in excess of £10 per metre, and estimates of the cost of digging duct on a per metre basis have been in excess of £50 per metre, a figure which can easily be doubled in urban areas. Very substantial costs such as these (e.g. £50,000 per kilometre for digging duct in rural areas) are clearly likely to pose a barrier to entry.

B.236 The size of barriers to entry may be reduced to the extent that other communications providers can achieve a lower cost network through investment in superior technology or innovation. However, it appears to Ofcom that the barrier provided by the high sunk costs of duct and fibre is likely to persist for the foreseeable future, and is likely to outweigh any such factors.

B.237 This is illustrated by the case of RBS backhaul circuits. The mobile communications providers that were allowed to self-provide their network from the start opted to do so to a large extent by means of microwave radio technology, which was cheaper than TISBO purchased (at retail prices, at that time) from BT. But whenever microwave radio links were not practical, mobile communications providers faced too high entry barriers (digging and ducting) to start self-supplying further. The mobile communications providers have indicated that this is unlikely to change in the next 2 to 3 years.

B.238 The significance of this barrier is at its greatest in the low bandwidth traditional interface market because:

- certain elements of the cost of the infrastructure required to provide TISBO services are independent of capacity and hence have to be recovered even for low bandwidth TISBO services. An obvious example is the cost of duct, which may account for a significant proportion of the cost of longer circuits; and
- infrastructure costs as a proportion of expected (retail) revenues is relatively high for low bandwidth products.

B.239 Additionally, the existence of economies of scale and scope makes it harder for entrants to compete on an equal basis with BT. For example, an entrant into TISBO is likely to operate at a smaller scale than BT, sell a narrower range of products and unable to engage in as much infrastructure sharing. This problem is compounded by the fact that smaller communications providers may not enjoy access to capital markets on the same terms as BT.

B.240 In summary, Ofcom believes that the low bandwidth TISBO market is characterised by very high barriers to entry, due to the existence of sunk costs that are in many cases high relative to expected revenues. These substantial barriers to entry are an important source of market power for BT. This is why Ofcom views the ease of market entry criterion as essential for its market power assessment.

Absence of potential competition

B.241 Potential competition refers to the prospect of new competitors entering the market within the timeframe considered for the market review. In the context of low bandwidth TISBO, this primarily refers to the prospect of self provision by other communications providers.

B.242 The prospect of widespread entry by new firms appears to Ofcom to be limited. This is due to:

- entry barriers;
- the current financial situation affecting many other communications providers; and
- the fact that Ofcom is not aware of any widespread entry by new players having occurred over the past two years or so.

B.243 Ofcom is aware that since the first consultation, BT has introduced an alternative technology to supply low bandwidth TISBO, namely contended SDSL. In absence of wholesale regulation, the only SDSL-based constraint on BT's market position is from the Local Loop Unbundling Operators (LLUOs). (Note that the absence of wholesale regulation implies that LLU backhaul links are not available from BT.) Hence only the SDSL-upgraded unbundled loops to which LLUOs can add their own LLU backhaul links can constitute a source of potential competition for TISBO. Evidence collected as part of the market review exercise suggests that this is unlikely to form a material competitive pressure on BT. Indeed the volume of unbundled loops (in the thousands) is relatively small compared to the low-bandwidth TISBO volume (close to half a million) and the number of LLU backhaul links self-supplied by LLUOs are very limited (in the tens).

B.244 Ofcom, therefore, considers that there is little potential competition to low bandwidth TISBO services. However Ofcom is minded not to give much weight to this criterion in its market power assessment.

Barriers to switching

B.245 Certain factors make it difficult for other communications providers to switch from BT to self-provision for low bandwidth TISBO. Communications providers have stated to Oftel and Ofcom that they are unlikely to switch to self-provision for low bandwidth traditional interface leased lines, first because of the high costs of entry relative to expected (retail) revenues, and second because of the costs associated with switching that would make the whole operation unattractive.

B.246 There are additional types of barriers to switching for RBS backhaul. For example, switching to self-provision through microwave radio would not be suitable for communications providers whose networks are based on the purchase of RBS backhaul circuits on fibre or copper, because many of their sites would not necessarily have line of sight that could enable microwave radio technology to be used. Hence these communications providers would find many of their sites unsuitable for self-provision through radio. They would need to incur significant investment costs in acquiring new sites to provision RBS backhaul circuits before they could switch.

B.247 In order to switch to self-provision, another communications provider would need to operate its own TISBO and a BT-provided PPC or leased line simultaneously until switchover, in order minimise interruption. There might also be contractual barriers to switching relating to early termination of contracts with BT.

B.248 These considerations suggest that there are barriers to switching from BT's supply of low bandwidth TISBO to self-provision.

Customers' ability to access and use information

B.249 PPC buyers consist of relatively few, well-informed communications providers and self-provision is the main source of competition. This criterion is not therefore relevant.

Low bandwidth TISBO services: intensity of competition criteria

Barriers to expansion

B.250 Ofcom believes that the importance of barriers to entry in markets for TISBO (which varies according to bandwidth, as discussed in the text on barriers to entry) is such that it is not essential to consider further constraints provided by barriers to expansion. Where the existing market players have already sunk costs and have local infrastructure in place, they may be able to expand their market share. But the scope for this appears to be limited, and most expansion would require the building of material new network and the sinking of costs.

Active competition on non price factors

B.251 Non-price competition refers to differentiation between products and between providers. Product differentiation may be in terms of quality or in terms of diversity. Provider differentiation can be captured through reputation. Low bandwidth TISBO are products that on average are not prone to differentiation and for which reputation does not play a role. The lack of active competition on non-price factors criterion is not therefore relevant for the market power assessment analysis.

Conclusion on assessment of market power in low bandwidth TISBO

B.252 The investigation of the above market power criteria for the low bandwidth TISBO market indicates that BT has SMP. The main reasons why Ofcom has reached this conclusion are that BT controls a ubiquitous infrastructure that is difficult to duplicate, that it can exploit more effectively economies of scale and scope, that it benefits from vertical integration and that there exist significant barriers to entry including sunk costs. All these factors make entry in the low bandwidth TISBO market difficult and unattractive. This conclusion is supported by BT's very large market share in low bandwidth TISBO, which is likely to be significantly larger than its retail market share and in excess of 80%.

B.253 The assessment of SMP in this market is to be carried out in the absence of wholesale remedies. This is because the purpose of this analysis is to assist in the assessment of whether and what remedies are appropriate in the market for low bandwidth TISBO. Ofcom considers that its conclusion that BT has SMP is also supported by the experience in the UK, namely that in the absence of regulation BT did not supply TISBO (other than as part of retail leased lines at retail prices) and that such supply was at charges well in excess of cost-based prices.

Likelihood of competition developing in the future

B.254 Ofcom has considered the potential impact of external factors on this market during the period covered by this review. Ofcom's view is that there are no developments that would generate sufficient competitive pressures within the next 2-3 years to alter the current finding of SMP. This is because the sources of SMP are high structural barriers to entry and because demand conditions and technological progress are unlikely to be able to reduce the strength of these entry barriers in the near future. However, Ofcom will keep market conditions under review.

Market for high bandwidth traditional interface symmetric broadband origination

B.255 The assessment of market power in the high bandwidth traditional interface symmetric broadband origination ("TISBO") market is carried out in the absence of any remedy at both the wholesale and the retail level for reasons described in Chapter 2.

High bandwidth TISBO: summary of conclusions

B.256 Ofcom considers that BT has SMP in this market. Ofcom has reached this conclusion based on an analysis of, primarily (see the detailed assessment for the examination of other criteria):

- the ubiquity of BT's infrastructure;
- economies of scale and scope;
- barriers to entry including sunk costs; and
- BT's ability to set excessive charges well above cost-based prices.

B.257 Many aspects of Ofcom's assessment in this market are similar to those in the market for low bandwidth TISBO. However, as is outlined below, the high bandwidth market is characterised by somewhat lower barriers to entry, and hence less severe competition problems, as shown by the fact that BT's share of this market is not as high as in the case of the corresponding low bandwidth market. However, as is outlined below, BT retains a significant advantage over other communications providers in this market, and retains a persistently high share of the market.

High bandwidth TISBO services: quantitative information criteria

Market shares

B.258 Market share data on high bandwidth TISBO is not yet available to Ofcom. However, an analysis of market shares at the retail level has been conducted. Retail market shares are clearly an imperfect proxy for shares at the wholesale level in this context. The discussion of market shares in the market for low bandwidth TISBO above discusses the extent to which retail market shares underestimate BT's wholesale market share. This effect arises since BT provides the wholesale inputs for all of its own retail circuits, and provides wholesale inputs for some of the circuits sold by other communications providers.

B.259 The tables below show the market share of BT (by volume and by revenue) in the UK apart from Kingston upon Hull in the high bandwidth traditional interface retail leased lines market.

Table B.8: BT's market share in the high bandwidth traditional interface retail leased line market by revenue

	2000/2001	2001/2002
BT's share	46%	47%

Source: Oftel Market Information

Table B.9: BT's market share in the high bandwidth traditional interface retail leased line market by volume

	2000/2001	2001/2002
BT's share	35%	42%

Source: Oftel Market Information

B.260 Ofcom notes that:

- There may be some issues of consistency of the data between years, which make it difficult to infer a reliable trend from the tables above. However, based on the available data, BT's market share does not appear to be declining, regardless of whether it is measured by volume or by revenue – indeed, it appears if anything to be increasing; and
- BT's market share by revenue appears to be in excess of its market share by volume. This may be explained by some or all of the following:
    - o BT has a greater share in 140Mbit/s and 155Mbit/s circuits than in 34Mbit/s and 45Mbit/s circuits. This is possible but would appear to contradict the widely held belief that the extent to which BT's market share is eroded by entry is positively correlated with bandwidth – indeed, the opposite seems to be more plausible;
    - o BT sells circuits of a greater length than do other communications providers. Ofcom has no evidence regarding this; or
    - o BT on average charges higher prices than other communications providers for circuits of an equal specification.

B.261 Ofcom has also attempted to calculate an approximate figure for BT's share of the market for high bandwidth TISBO, using the same methodology as that used in its analysis of the low bandwidth market. As per the low bandwidth market, these were calculated using data on the number of PPCs sold in the 2001/02 financial year, and are shown in the table below.

Table B.10: Estimated BT market shares in 2001/02 – high bandwidth traditional interface retail leased lines and high bandwidth TISBO

	HBW Retail leased lines	HBW TISBO
Revenue market share	47%	49%
Volume market share	42%	44%

Source: Oftel/BT

B.262 Ofcom has also examined more recent (mid 2003) data relating to the provision of 155Mbit/s SDH based circuits only (sold by all communications providers to all customers). This data suggests that BT's market share by volume remains at least as high as those shown in Table B.10 above.

B.263 Ofcom has been unable to obtain reliable market share information relating to the 2002/03 financial year on the entire high bandwidth traditional interface market. However, Ofcom has been able to obtain market shares relating to 144Mbit/s and 155Mbit/s retail private circuits only, i.e. not 34Mbit/s or 45Mbit/s circuits. The Oftel Market Information data relating to high bandwidth traditional interface circuits collected since 2000/01 has consistently shown that BT's volume share of 144/155Mbit/s traditional interface circuits has been lower than its share of 34/45Mbit/s circuits. By the end of 2002/03, BT's share of all 140/155Mbit/s retail traditional interface circuits was slightly higher than the aggregate high bandwidth figure shown in Table B.10. This information suggests that BT's share of the high bandwidth market is no longer decreasing, and in fact may be increasing. This is consistent with Ofcom's finding of SMP in this market.

Excess pricing and profitability

B.264 In the absence of regulation Ofcom considers that BT would set excessive prices for high bandwidth TISBO. Ofcom reaches this conclusion based on past experience. Before BT was required to provide PPCs, other communications providers had to buy high bandwidth TISBO from BT as part of retail leased lines at BT's retail prices. These were substantially above the cost-based prices. Ofcom reaches this conclusion for two reasons. Firstly, Ofcom notes that BT's ROCE on high bandwidth traditional interface retail leased lines is well in excess of its cost of capital of 13.5% - see the table below. Second, BT's retail prices are significantly higher than the cost-based charges that Oftel set in the Phase II Direction for high bandwidth terminating segments. This is outlined in the table below, in which the rental charges for 34Mbit/s circuits are compared, using PPC service based charges, and BT's retail charges as of December 2002.

Table B.11: Comparison of BT's retail and PPC charges (34Mbit/s circuits)

	PPCs service-based charges	Retail prices
Rental charge per local end per year	£8,521	£18,998
Rental charge per main link per year (fixed)	£12,058	£26,884
Rental charge per main link per year (per km)	£323/km	£720/km

Source: Oftel/BT

B.265 Even after BT was required to make PPCs available, BT initially set charges for high bandwidth terminating segments that Oftel had to revise downwards significantly in the Phase II PPC Direction. These reductions were needed in order for the charges to become properly based on costs. See Oftel's Phase II Direction for details of these reductions.

B.266 The only profitability data available relating to BT's profitability in the provision of TISBO is at the retail level. Such data does not fully reflect the impact that existing regulation on the supply of TISBO might have on profitability, or indeed of the relationship between retail costs and revenues. The table below shows BT's estimates of its Return On Capital Employed (ROCE) for high bandwidth retail leases lines. It should be noted that these figures include data relating to BT's (small number of) very high bandwidth circuits.

Table B.12: BT's ROCE for high bandwidth retail leased lines

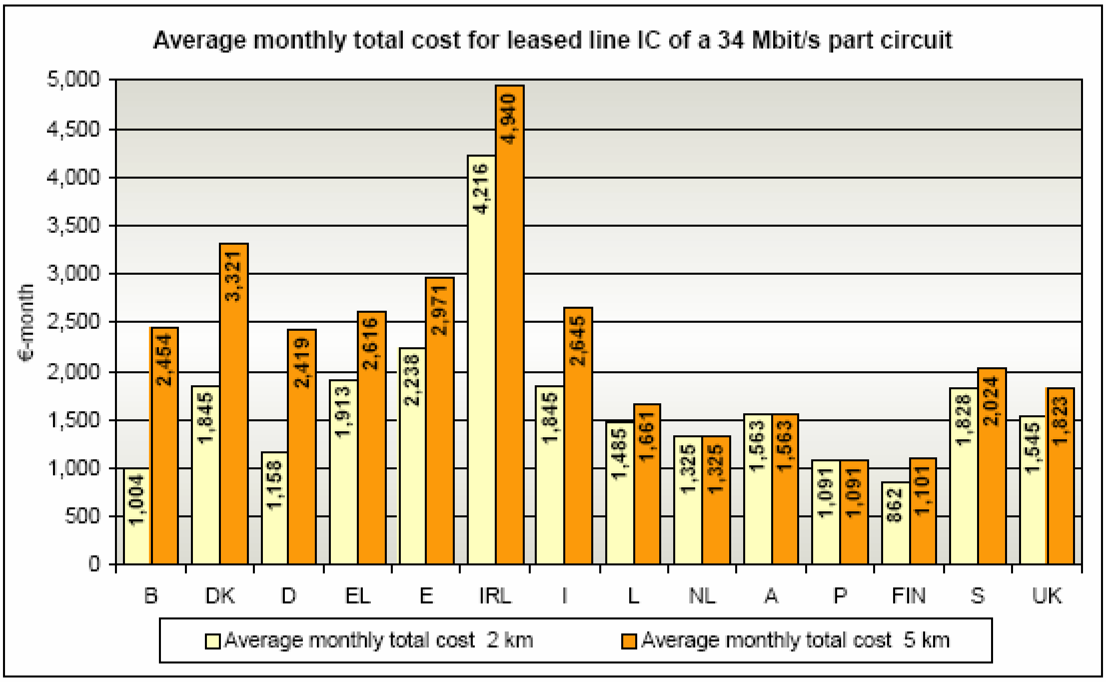
	2000/2001	2001/2002
BT's share	27%	32%

Source: BT

International benchmarking

B.267 The European Commission's *9th Report on the Implementation of the Telecommunications Regulatory Package* (November 2003) includes comparisons for wholesale leased lines.

Figure B.13: International comparison of high bandwidth TISBO prices – 34Mbit/s



Source: European Commission

B.268 As with low bandwidth TISBO, the tables suggest that the prices in the UK for high bandwidth TISBO services compare favourably with those in other Member States, with only five other countries having lower prices.

B.269 This evidence should, as mentioned above, be treated with caution in view of the problems with international comparisons arising from differences in circumstances between countries. BT's PPC prices are the subject of regulation, unlike the TISBO prices in some other Member States. This is why Ofcom has decided not to rely on the international benchmarking criterion in its assessment of BT's market power.

High bandwidth TISBO services: firm-related criteria

Technological advantages or superiority

B.270 The discussion of this criterion in Ofcom's analysis of SMP in the market for trunk segments and low bandwidth TISBO is equally applicable to the markets for high bandwidth TISBO. It is repeated below.

B.271 This criterion is of minimal relevance since:

- the technology of leased lines is well established and known to all communications providers; and
- the incumbent is supplied with technological inputs by the same firms as other communications providers.

B.272 BT has additionally stated that it operates a relatively expensive PDH network and a modern SDH network, while its competitors only operate modern SDH-only networks. This could be viewed as indicating that BT is in some (limited) aspects of its technology at a disadvantage relative to other communications providers. Ofcom, however, considers that these factors are significant enough to make this criterion an essential part of its market power assessment.

Control of infrastructure not easily duplicated

B.273 The discussion of this criterion in Ofcom's analysis of SMP in the market for low bandwidth TISBO is, to some extent, equally applicable to the market for high bandwidth TISBO. The extent to which BT's ubiquity is an issue in the high bandwidth market (as opposed to the other markets for TISBO) is discussed in the section on ease of market entry below.

B.274 The text used in Ofcom's analysis of the market for low bandwidth TISBO is repeated below.

B.275 The network infrastructure required to provide TISBO is not easy to duplicate, in the sense that it takes time and money to build.

B.276 As a former monopolist, BT's network is ubiquitous in its coverage. A corollary to this statement is that most of BT's network costs are sunk. This implies that BT has the infrastructure at its disposal to supply TISBO services in most places in the country within a reasonable period and without incurring substantial costs. In other words, the ubiquity of BT's network makes the cost of marginal deployment of TISBO services lower and makes it easier to reach many locations.

B.277 Most other communications providers are (recent) entrants and are still in the process of building their networks. This implies that other communications providers' networks are not extensive and that their costs are not yet sunk. As outlined above, comments made by several leased line users indicate that BT is often the only leased line supplier outside the main routes and the main cities, i.e. that other communications providers are unable to supply at competitive rates in these locations, implying that other communications providers are not in a position to profitably self-supply TISBO services outside these main routes and main cities.

B.278 Evidence regarding the extent of BT's ubiquity at the TISBO level relative to that of other communications providers is difficult to provide, particularly in terms of comparing the access networks of different communications providers.

B.279 Network diagrams showing the network rollout of other communications providers relative to BT, such as those discussed in the section on trunk segments market power relates to core networks, and as such paints an incomplete picture of the relative abilities of communications providers to provide end to end leased lines. However, they do tend to demonstrate that even the largest communications providers have been unable to replicate the reach of BT's network. The economics of telecommunications networks are such that this effect is in most cases greatly magnified in the case of access networks.
A key feature of the network roll-out described above is that most of BT's network costs are sunk. This implies that BT has the infrastructure at its disposal to supply leased lines in most places in the country within a reasonable period and without incurring substantial costs. In other words, the ubiquity of BT's network makes the cost of marginal deployment of TISBO services lower and makes it easier to reach many locations.

B.280 Most other communications providers are relatively recent entrants, and as such are, in certain cases, to some extent still in the process of building certain aspects of their networks. This implies that other communications providers' networks are not extensive and that their costs are not yet sunk. Comments made by several leased line users that BT is often the only leased line supplier outside the main routes and the main cities, indicate that other communications providers are unable to supply at competitive rates in these locations, which implies that other communications providers are not in a position to self-supply TISBO services in profitable conditions outside these main routes and main cities.

B.281 LLU communications providers have indicated in a similar manner that they do not consider that there are alternative communications providers besides BT that are in a position to supply LLU backhaul, because LLU backhaul stretches between a BT MDF site and an LLU communications provider's POC and it is unlikely that another communications provider would be present at both points obviating the need for substantial digging and ducting.

B.282 Sunk costs are discussed further in the following section on ease of market entry, as is the extent to which the competition problems caused by ubiquity and barriers to entry differ by bandwidth.

B.283 As discussed above, the barriers to entry in the TISBO market (circumvented by BT by virtue of the ubiquity of its network) are particularly relevant to the provision of low bandwidth TISBO, since the revenues that are set against high costs of entry are lower. However, the representations made to Ofcom suggest that the ubiquity of BT's network also provides it with a very significant advantage in the high bandwidth market. The text dealing with barriers to entry (see below) provides a further discussion of this issue.

Economies of scale

B.284 The discussion of this criterion in Ofcom's analysis of SMP in the market for low bandwidth TISBO is, in Ofcom's opinion equally applicable to the market for high bandwidth TISBO. The text used in Ofcom's analysis of the market for low bandwidth TISBO is repeated below.

B.285 Symmetric broadband origination is characterised by significant economies of scale. The main economies of scale in supplying TISBO services derive from the existence of large fixed costs, namely the costs of building ducts and laying fibre or copper. Once the ducts are built and the copper or fibre laid, the cost of supplying additional TISBO is relatively small.

B.286 Other economies of scale arise at the local exchange (first network node) as well as the third party site, since the costs of equipment at the two sites do not increase significantly with capacity. The more leased line customers are served by the same local exchange or at the same third party site, the higher the capacity of the equipment that can be installed and the cheaper (per customer) it is to serve them.

B.287 In other words, the average cost of supplying TISBO services to a given location decreases with the number of TISBO services at that location. This means that the extent of economies of scale exploited for TISBO is likely to vary with geographical locations, i.e. with customer density.

B.288 Economies of scale for TISBO can be characterised by estimates of cost volume relationships (CVRs).

B.289 Ofcom has the following CVR estimates available to it for this purpose:

- an estimated CVR for end to end leased lines, provided by BT to Oftel in 2002 based on its CCA financial statements for 2001/02. In these statements, the LRIC of 'inland private circuits' was £1,003m. The FAC for the same period was £1,295m, giving a ratio of 80%. This information can be interpreted as saying that, for each aggregate unit increase in private circuit volumes, the associated LRIC would increase by 80%; and
- CVR estimates for specific network components from the Europe Economics bottom up model described in the analysis of economies of scale in the market for trunk segments. For the access network, these include the following:
    - duct: 5%
    - copper: 35%
    - fibre: 22%
    - operating costs: 48%.

B.290 The estimated CVRs above all suggest that the provision of TISBO is characterised by economies of scale. The extent of these economies of scale may be debatable however. In order to assess whether or not BT can exploit such scale economies, Ofcom needs to consider the extent to which BT enjoys larger economies of scale than that of other communications providers in any given area.

B.291 While BT and other communications providers both supply TISBO services in the same local areas, Ofcom's view is that BT enjoys larger economies of scale than other communications providers because it almost always carries more traffic in any given area. This is because BT's customer base is larger than that of any other communications provider at the local access level for bandwidth TISBO – see the market share figures included in the analysis of quantitative information.

B.292 This means that BT can serve more customers using the same equipment at local exchanges and at third party sites and so obtain better equipment utilisation, or use higher capacity equipment that is cheaper on a per customer basis. It also implies that BT can benefit from the existing ducts to a greater extent. As a result, Ofcom considers that BT is likely to enjoy larger economies of scale at the local access level than other communications providers.

B.293 In areas where other communications providers do not supply TISBO services, Ofcom considers that BT enjoys economies of scale and that other communications providers do not. This is because other communications providers must then buy TISBO services from BT, and because BT does not face any competitive pressure to pass on the economies of scale benefits to its buyers (in absence of any remedy). Since the number of areas in which BT is the only supplier of TISBO services is large, Ofcom is of the view that overall BT enjoys significantly greater economies of scale in the provision of TISBO services than other communications providers.

B.294 Ofcom believes that other communications providers are most likely to compete with BT in areas where the population density is high so that the level of capacity utilisation can be maximised. In these areas, BT and other communications providers benefit from the same flexibility to fill up their capacity in absence of any regulation.

B.295 Ofcom has reached the conclusions that there exist significant economies of scale in the high bandwidth TISBO market and that BT can benefit from them to a larger extent than other communications providers. As a result Ofcom considers that economies of scale are a source of cost advantage and market power for BT in the TISBO market.

Economies of scope

B.296 The discussion of this criterion in Ofcom's analysis of SMP in the market for low bandwidth TISBO is, in Ofcom's opinion equally applicable to the market for high bandwidth TISBO.

B.297 Economies of scope arise in the TISBO market if the costs incurred to supply TISBO services can be shared with various other products. The magnitude of the economies of scope is influenced by the range of products and services as well as by the volume of each of these various products and services over which the costs are shared.

B.298 Symmetric broadband origination can be used to carry products other than leased lines, though to a lesser extent than trunk segments. Communications providers have indicated that they use TISBO services to provide frame relay, ATM, IPVPN, Internet access, direct voice and wholesale leased lines.

B.299 BT is thought to enjoy larger economies of scope than other communications providers for two reasons. First BT offers a wider range of products than most other communications providers and can therefore spread the cost of the common inputs for TISBO over a larger array of products and services. Second for each/most of these services and products BT carries larger volumes.

B.300 A key economy of scope for TISBO is the possibility of using ducts to carry products and services other than TISBO services. As the costs of digging and laying ducts are substantial and independent of the bandwidth, all communications providers try to take advantage of this and to maximise the number of products that can be supplied using the same ducts. However, only the owner of the ducts can take advantage of this economy of scope which means that BT, with the most ducts is likely to have a significant advantage compared to other communications providers.

B.301 Ofcom therefore considers that BT enjoys greater economies of scope than other communications providers and that this strengthens BT's market position in the market for high bandwidth TISBO.

High bandwidth TISBO services: marketing and strategies

Product/services diversification

B.302 The discussion of this criterion in Ofcom's analysis of SMP in the market for low bandwidth TISBO is, in Ofcom's opinion equally applicable to the market for high bandwidth TISBO.

B.303 The text used in Ofcom's analysis of the market for low bandwidth TISBO is repeated below.

B.304 In the absence of regulation it is likely that BT would not offer TISBO on its own. It would bundle it with trunk segments and another TISBO segment as part of an end-to-end leased line sold at a retail price. This is what BT did before it was required by Oftel to supply PPCs.

Vertical integration

B.305 The discussion of this criterion in Ofcom's analysis of SMP in the market for low bandwidth TISBO is, to some extent, applicable to the market for high bandwidth TISBO.

B.306 Tables B.8 and B.9 describe how BT's market share in high bandwidth retail leased lines has evolved over time. BT supplies TISBO, trunk segments and traditional interface retail leased lines. Where BT provides a retail leased line, it always self-provides TISBO at both ends. Therefore, BT's substantial market share in retail high bandwidth leased lines of about 40% implies that a significant volume of the market for TISBO is effectively unavailable for other communications providers to compete for.

B.307 Bearing in mind the relative magnitudes of the market shares in question, this effect is more pronounced in the case of the markets for trunk segments and low bandwidth TISBO.

Distribution and sales network

B.308 The discussion of this criterion in Ofcom's analysis of SMP in the market for low bandwidth TISBO is, in Ofcom's opinion, equally applicable to the market for high bandwidth TISBO.

B.309 The text used in Ofcom's analysis of the market for low bandwidth TISBO is repeated below.

B.310 A well developed distribution system for high bandwidth TISBO is not viewed as a potential indicator of market power, as the suppliers and buyers of high bandwidth TISBO are communications providers, and so relatively few in number and all know each other.

Access to capital markets and financial resources

B.311 BT's larger overall size and relatively strong balance sheet may put it at an advantage when it comes to funding new network infrastructure. A number of other communications providers have recently faced financial pressures that may have constrained their willingness and ability to invest in new areas. For example, some communications providers may be reliant on securing orders at the retail level before investing in network infrastructure, and may face a higher cost of capital.

B.312 In addition, Ofcom has received evidence suggesting that certain end users may be inclined to avoid, where possible, using products that rely on network inputs from certain communications providers that have been facing financial difficulties. BT, on the other hand, is perceived as being relatively secure and financially stable at a time when financial markets are volatile and investors risk-averse.

High bandwidth TISBO services: customer-related criteria

Countervailing buying power

B.313 The discussion of this criterion in Ofcom’s analysis of SMP in the market for low bandwidth TISBO is, in Ofcom’s opinion, applicable to the market for high bandwidth TISBO, albeit to a smaller extent, given the greater opportunities for economic self provision.

B.314 In the markets for TISBO, there is some countervailing power available in the form of self-provision by other communications providers. Other communications providers self-provide some high bandwidth traditional interface circuits, but in many circumstances the barriers to self provision are considerable, because of the costs of doing so relative to expected revenues, given that a significant part of the costs are fixed with respect to bandwidth. Evidence submitted by LLU communications providers suggests that even though there is self-supply of LLU backhaul by some LLU communications providers, this is not significant compared to the supply by BT. The lack of countervailing buyer power in the absence of regulation is indicated by the experience before Ofcom required BT to make available PPCs and set cost oriented charges.

High bandwidth TISBO services: market entry related criteria

Ease of market entry

B.315 The discussion of this criterion in Ofcom’s analysis of SMP in the market for low bandwidth TISBO is also applicable to the market for high bandwidth TISBO.

B.316 As a national incumbent, BT has sunk a significant share of the network costs associated with the provision of leased lines, such as digging and laying ducts, which are very expensive components of the access network. This gives BT a very substantial strategic advantage over would-be competitors in the provision of TISBO. In contrast to BT, entrants generally need to sink costs in order to compete at the wholesale level. Communications providers have provided Ofcom with estimates of the levels of these costs, which it is unable to reproduce fully here due to confidentiality issues.

B.317 Estimates of the cost of fibre (per fibre per km) provided to Ofcom by other communications providers have been in excess of £10 per metre, and estimates of the cost of digging duct on a per metre basis have been in excess of £50 per metre, a figure which can easily be doubled in urban areas. Very substantial costs such as these (e.g. £50,000 per kilometre for digging duct in rural areas) are clearly likely to pose a barrier to entry.

B.318 The size of barriers to entry may be reduced to the extent that other communications providers can achieve a lower cost network through investment in superior technology or innovation. However, it appears to Ofcom that the barrier provided by the high sunk costs of duct and fibre is likely to persist for the foreseeable future, and is likely to outweigh any such factors.

B.319 The significance of this barrier is not uniform between all markets for TISBO. In particular, its importance is at its greatest in the low bandwidth, and at its lowest in the very high bandwidth market. This is the case because:

- certain elements of the cost of the infrastructure required to provide TISBO services are independent of capacity, obvious examples being the cost of duct, which may account for a significant proportion of the cost of longer circuits; and
- infrastructure costs as a proportion of expected (retail) revenues decrease with increasing bandwidth.

B.320 Additionally, the existence of economies of scale and scope makes it harder for entrants to compete on an equal basis with BT. For example, an entrant into TISBO is likely to operate at a smaller scale than BT, sell a narrower range of products and unable to engage in as much infrastructure sharing.

B.321 This problem is compounded by the fact that smaller communications providers may not enjoy access to capital markets on the same terms as BT.

B.322 The higher degree of entry in this market by other communications providers (see Ofcom's analysis of quantitative information) suggests that the market for high bandwidth TISBO is characterised by lower barriers to entry than the market for low bandwidth TISBO. This reflects higher expected (retail) revenues in the high bandwidth market.

B.323 In summary, Ofcom believes that the market for high bandwidth TISBO is characterised by relatively high barriers to entry (although not as high as in the market for low bandwidth TISBO). This is due to the existence of high sunk costs that are in many cases, particularly for longer circuits, not mitigated by the higher expected revenues that can be earned at the retail level.

Absence of potential competition

B.324 The discussion of this criterion in Ofcom's analysis of SMP in the market for low bandwidth TISBO is, in Ofcom's opinion, equally applicable to the market for high bandwidth TISBO.

B.325 'Potential competition' refers to the prospect of new competitors entering the market within the timeframe considered for the market review. In the context of high bandwidth TISBO, this primarily refers to the prospect of self provision by other communications providers.

B.326 The prospect of widespread entry by new firms appears to Ofcom to be limited. This is due to:

- entry barriers;
- the current financial situation affecting many other communications providers; and
- the fact that Ofcom is not aware of any widespread entry by new players having occurred over the past two years or so.

Barriers to switching

B.327 Certain factors make it difficult for other communications providers to switch from BT to self-provision for high bandwidth TISBO. In order to switch to self-provision, another communications provider would need to operate its own TISBO and a BT-provided PPC or leased line simultaneously until switchover, in order minimise interruption. There might also be contractual barriers to switching relating to early termination of contracts with BT.

B.328 These considerations suggest that there are barriers to switching from BT's supply of high bandwidth TISBO to self-provision. Ofcom would not expect them to be as high as in the market for low bandwidth TISBO, however, due to the higher expected (retail) revenues available in the high bandwidth market.

B.329 Ofcom notes that barriers to switching are less substantial than for low bandwidth TISBO, due to the extra expected revenue potential provided by high bandwidth TISBO.

Customers' ability to access and use information

B.330 As outlined under low bandwidth symmetric information, PPC buyers consist of relatively few, well-informed communications providers and self-provision is the main source of competition. This criterion is not therefore relevant.

High bandwidth TISBO services: intensity of competition criteria

Barriers to expansion

B.331 The discussion of this criterion in Ofcom's analysis of SMP in the market for low bandwidth TISBO is, in Ofcom's opinion equally applicable to the market for high bandwidth TISBO.

B.332 The text used in Ofcom's analysis of the market for low bandwidth TISBO is repeated below.

B.333 Ofcom believes that the importance of barriers to entry in markets for TISBO (which varies according to bandwidth, as discussed in the text on barriers to entry) is such that it is not essential to consider further constraints provided by barriers to expansion. Where the existing market players have already sunk costs and have local infrastructure in place, they may be able to expand their market share. But the scope for this appears to be limited, and most expansion would require the building of material new network and the sinking of costs.

Active competition on non-price factors

B.334 The discussion of this criterion in Ofcom's analysis of SMP in the market for low bandwidth TISBO is, in Ofcom's opinion equally applicable to the market for high bandwidth TISBO.

B.335 The text used in Ofcom's analysis of the market for low bandwidth TISBO is repeated below.

B.336 Non-price competition refers to differentiation between products and between providers. Product differentiation may be in terms of quality or in terms of diversity. Provider differentiation can be captured through reputation. High bandwidth TISBO are products that, in general, are not prone to differentiation and for which reputation does not play a role (although, as discussed above, Ofcom notes that certain other communications providers currently facing financial difficulties may be at a disadvantage relative to BT due to issues of reputation).

B.337 In summary, Ofcom believes that a lack of active competition on non-price factors criterion is not a major source of market power for BT.

Conclusion on assessment of SMP in high bandwidth TISBO

B.338 Ofcom concludes that BT has SMP in high bandwidth TISBO. Ofcom has reached this opinion in the light of information submitted to it concerning, principally:

- the ubiquity of BT's infrastructure;
- economies of scale and scope;
- barriers to entry including sunk costs;
- BT's ability to set excessive charges well above cost-based prices; and
- BT's high market share.

Likelihood of competition developing in the future

B.339 Ofcom has considered the potential impact of external factors on this market during the period covered by this review. Ofcom's view is that there are no developments that would generate sufficient competitive pressures within the next 2-3 years to alter the current finding of SMP. However, Ofcom will keep market conditions under review.

Market for very high bandwidth traditional interface symmetric broadband origination in the UK apart from Hull

B.340 As described above, Ofcom's decision to identify a separate market for traditional interface symmetric broadband origination ("TISBO") at and above 622Mbit/s was informed by demand-side substitution possibilities and the SSNIP test in the light of the availability of new evidence regarding proxies for competitive prices (based on cost oriented wholesale prices). The purpose of market definition is to assist in the assessment of market power. Ofcom notes that competitive conditions appear to be significantly different at very high bandwidths. The evidence made available to Ofcom suggests that entry by communications providers has been substantially easier in the case of circuits at 622Mbit/s and above. This is reflected in the market power analysis outlined below.

B.341 The market for very high bandwidth TISBO is currently relatively small, both in terms of revenue and volumes (recent estimates suggest the market is one third of the size of the high bandwidth market in revenue terms, and approximately one tenth of its size in terms of number of circuits). Ofcom's market information stated that the total market totalled in the region of 200 (retail) circuits at the end of 2001/02. BT's share of this market was small, in the region of 10% or less. These two statistics mean, at first glance, that the market appears to differ substantially from the other leased lines markets that Ofcom has analysed.

B.342 Ofcom recognises that some degree of double counting may have taken place when assessing the market share of communications providers but has concluded that it is insufficient to cause BT's market share to increase to a level associated with SMP. Each circuit provided by a communications provider would need to have been sold through a chain of at least two other communications providers before being sold to the end third party customer in order for the number of very high bandwidth TISBO circuits that BT sells to account for 40% or more of the market. Based on the information held by Ofcom on who very high bandwidth circuits are provided to, this is simply not the case.

Very high bandwidth TISBO: summary of conclusions

B.343 Ofcom considers that this market is effectively competitive. This is based on the fact that BT's ubiquity and the presence of barriers to entry appear not to lead to competition problems in this market. This is supported by BT's market share, which, as discussed below, is in the region of 10% or less.

Very high bandwidth TISBO services - Quantitative information criteria

B.344 Due in part to the newness of this market, a limited degree of quantitative information is available to Ofcom that specifically relates to the very high bandwidth TISBO market. BT has supplied Ofcom with no profitability data at the retail or wholesale level, and the strongly bespoke nature of BT's pricing (and that of other communications providers) makes it difficult to analyse the current levels of, or trends in, prices at either the wholesale or retail level.

B.345 The retail market share data available to Ofcom may be less reliable than that available at other bandwidths, due partly to the newness of these services. However, the data available to Ofcom suggests that, when measured by either volume or revenue, BT's market share is not at a level that is consistent with it possessing single firm dominance in this market.

B.346 Since very high bandwidth TISBO circuits are a relatively new product, Ofcom does not have reliable data going back a number of years. The data that has been made available to it is shown in the tables below.

Table B.13: BT's market shares by revenue in very high bandwidth traditional interface retail leased lines

	2000/01	2001/02
BT's share	7%	7%

Table B.14: BT's market shares by volume in very high bandwidth traditional interface retail leased lines

	2000/01	2001/02
BT's share	8%	6%

B.347 In the case of very high bandwidth circuits, retail market shares are a good proxy for wholesale market shares, since Ofcom understands that BT's sales of very high bandwidth circuits do not include any significant number of sales to other communications providers.

B.348 The above market shares are at a level that suggests that BT does not enjoy market power in this market.

Very high bandwidth TISBO services: firm-related criteria

Technological advantages or superiority

B.349 Since entrants appear to have been able to capture high market shares, and the incumbent is supplied with technological inputs by the same firms as other communications providers, Ofcom considers that this criterion is of limited relevance in the market for very high bandwidth TISBO.

Control of infrastructure not easily duplicated

B.350 As Ofcom has outlined in its analysis of the other leased lines markets above, as a former monopolist, BT's network is ubiquitous in its coverage. A corollary to this statement is that most of BT's network costs are sunk. This implies that BT has the infrastructure at its disposal to supply TISBO in most places in the country within a reasonable period and without incurring substantial costs. In other words, the ubiquity of BT's network makes the cost of marginal deployment of TISBO lower and makes it easier to reach many locations.

B.351 The revenues that can be earned from very high bandwidth circuits are substantially higher than those for lower bandwidth circuits (as described earlier in this section, the very high bandwidth market is one third of the size of the high bandwidth market in revenue terms but only one tenth of the size in volume terms). The extent to which this, and other factors, may mean that the infrastructure required to offer very high bandwidth TISBO is described in the text on ease of market entry below.

Economies of scale

B.352 Some of the discussion of this criterion in Ofcom's analysis of SMP in the market for low bandwidth TISBO is, in Ofcom's opinion equally applicable to the market for very high bandwidth TISBO.

B.353 Symmetric broadband origination is characterised by significant economies of scale. The main economies of scale in supplying TISBO services derive from the existence of large fixed costs, namely the costs of building ducts and laying fibre or copper. Once the ducts are built and the copper or fibre laid, the cost of supplying additional TISBO is relatively small.

B.354 Other economies of scale arise at the local exchange (first network node) as well as the third party site, since the costs of equipment at the two sites do not increase significantly with capacity. The more leased line customers are served by the same local exchange or at the same third party site, the higher the capacity of the equipment that can be installed and the cheaper (per customer) it is to serve them.

B.355 In other words, the average cost of supplying TISBO services to a given location decreases with the number of TISBO services at that location. This means that the extent of economies of scale exploited for TISBO is likely to vary with geographical locations, i.e. with customer density.

B.356 Economies of scale for TISBO can be characterised by estimates of cost volume relationships (CVRs).

B.357 Ofcom has the following CVR estimates available to it for this purpose:

- an estimated CVR for end to end leased lines, provided by BT to Oftel in 2002 based on its CCA financial statements for 2001/02. In these statements, the LRIC of 'inland private circuits' was £1,003m. The FAC for the same period was £1,295m, giving a ratio of 80%. This information can be interpreted as saying that, for each aggregate unit increase in private circuit volumes, the associated LRIC would increase by 80%; and
- CVR estimates for specific network components from the Europe Economics bottom up model described in the analysis of economies of scale in the market for trunk segments. For the access network, these include the following:
  - duct: 5%
  - copper: 35%
  - fibre: 22%
  - operating costs: 48%

B.358 The estimated CVRs above all suggest that the provision of TISBO is characterised by economies of scale. The extent of these economies of scale may be debatable however. In order to assess whether or not BT can exploit such scale economies, Ofcom needs to consider the extent to which BT enjoys larger economies of scale than that of other communications providers in any given area.

B.359 While BT and other communications providers both supply TISBO services in the same local areas, Ofcom's view is that BT enjoys larger economies of scale than other communications providers because it almost always carries more traffic in any given area. This is because BT 's customer base is larger than that of any other communications provider at the local access level for TISBO – see the market share figures included in the analysis of quantitative information. In the context of the very high bandwidth market, it is important to note that this size of customer base relates to TISBO at all bandwidths, due to the potential for equipment and infrastructure sharing.

B.360 This means that BT can serve more customers using the same equipment at local exchanges and at third party sites and so obtain better equipment utilisation, or use higher capacity equipment that is cheaper on a per customer basis. It also implies that BT can benefit from the existing ducts to a greater extent. As a result, Ofcom considers that BT is likely to enjoy larger economies of scale at the local access level than other communications providers.

B.361 In areas where other communications providers do not supply TISBO services, Ofcom considers that BT enjoys economies of scale and that other communications providers do not. This is because other communications providers must then buy TISBO services from BT, and because BT does not face any competitive pressure to pass on the economies of scale benefits to its buyers (in absence of any remedy). Since the number of areas in which BT is the only supplier of TISBO services is large, Ofcom is of the view that overall BT enjoys significantly greater economies of scale in the provision of TISBO services than other communications providers.

B.362 Ofcom believes that other communications providers are most likely to compete with BT in areas where the population density is high so that the level of capacity utilisation can be maximised. In these areas, BT and other communications providers benefit from the same flexibility to fill up their capacity in absence of any regulation.

B.363 Ofcom has reached the conclusion that there exist significant economies of scale in the very high bandwidth TISBO market and that BT can benefit from them to a larger extent than other communications providers. As a result Ofcom considers that economies of scale are a source of cost advantage and market power for BT in the TISBO market. However, Ofcom believes that cost advantages derived from this are, on their own, unlikely to be a source of SMP.

Economies of scope

B.364 Some of the discussion of this criterion in Ofcom's analysis of SMP in the market for high bandwidth TISBO is, in Ofcom's opinion equally applicable to the market for very high bandwidth TISBO.

B.365 Economies of scope arise in the TISBO market if the costs incurred to supply TISBO services can be shared with various other products. The magnitude of the economies of scope is influenced by the range of products and services as well as by the volume of each of these various products and services over which the costs are shared.

B.366 Symmetric broadband origination can be used to carry products other than leased lines, though to a lesser extent than trunk segments. Communications providers have indicated that they use TISBO services to provide frame relay, ATM, IPVPN, Internet access, direct voice and wholesale leased lines.

B.367 BT is thought to enjoy larger economies of scope than other communications providers for two reasons. First BT offers a wider range of products than most other communications providers and can therefore spread the cost of the common inputs for TISBO over a larger array of products and services. Second for each/most of these services and products BT carries larger volumes.

B.368 A key economy of scope for TISBO is the possibility of using ducts to carry products and services other than TISBO services. As the costs of digging and laying ducts are substantial and independent of the bandwidth, all communications providers try to take advantage of this and to maximise the number of products that can be supplied using the same ducts. However, only the owner of the ducts can take advantage of this economy of scope which means that BT, with the most ducts is likely to have a significant advantage compared to other communications providers.

B.369 Ofcom therefore considers that BT enjoys greater economies of scope than other communications providers and that this strengthens BT's market position in the market for very high bandwidth TISBO.

Very high bandwidth TISBO services: marketing and strategies

Product/services diversification

B.370 As in Ofcom's discussion of the other TISBO markets, Ofcom does not consider that this criterion is likely to be of enough significance to form a key part of its analysis. The text included above on the high bandwidth market is therefore equally applicable.

Vertical integration

B.371 Ofcom considers that this criterion is likely to be of limited relevance to this market, since BT's share in the corresponding retail market is low (see the assessment of quantitative information criteria).

Distribution and sales network

B.372 The discussion of this criterion in Ofcom's analysis of SMP in the market for low (and high) bandwidth TISBO is, in Ofcom's opinion equally applicable to the market for very high bandwidth TISBO.

B.373 The text used in Ofcom's analysis of the market for low bandwidth TISBO is repeated below.

B.374 A well-developed distribution system for very high bandwidth TISBO is not viewed as a potential indicator of market power, as the suppliers and buyers of very high bandwidth TISBO are communications providers, and so relatively few in number and all know each other.

Access to capital markets and financial resources

B.375 BT's larger overall size and relatively strong balance sheet may put it at an advantage when it comes to funding new network infrastructure. A number of other communications providers have recently faced financial pressures that may have constrained their willingness and ability to invest in new areas. For example, some communications providers may be reliant on securing orders at the retail level before investing in network infrastructure, and may face a higher cost of capital.

B.376 In addition, Ofcom has received evidence suggesting that certain end users may be inclined to avoid, where possible, using products that rely on network inputs from certain communications providers that have been facing financial difficulties. BT, on the other hand, is perceived as being relatively secure and financially stable at a time when financial markets are volatile and investors risk-averse.

Very high bandwidth TISBO services: customer-related criteria

Countervailing buyer power

B.377 Given the opportunities that exist for self-provision in this market, it is possible that significant countervailing buyer power exists. This is because buyers of very high bandwidth TISBO can in most cases negotiate with BT and credibly threaten to use an alternative supplier. This is unlikely to be the case in the low bandwidth and high bandwidth markets due to BT's very significant cost advantages.

Very high bandwidth TISBO services: market related criteria

Ease of market entry

B.378 As described in Ofcom's text on barriers to entry in the markets for low and high bandwidth TISBO, markets for TISBO are characterised by large sunk costs. However, the significant entry made by other communications providers relative to BT (see Ofcom's market share estimates) suggests that sunk costs are, at the market's current stage of development, not excessively high in relation to the expected retail revenues that can be earned from retail products offered over very high bandwidth circuits. An additional factor is that other communications providers' submissions to Ofcom suggest that no or an extremely limited number of very high bandwidth PPCs have been sold by BT, suggesting that other communications providers are engaging in a significant degree of self provision.

B.379 It may be that the very high bandwidth circuits that have been sold so far are all in metropolitan areas, meaning that circuits are relatively short and sunk costs are relatively low. In such a scenario, if very high bandwidth circuits were to become, due to increasing capacity requirements, less of a niche application, then other communications providers might not be in as strong a position to compete with BT in the provision of longer circuits. However, Ofcom does not have clear evidence to support this view, and as such it does not consider that issues of BT's ubiquity and the importance of sunk costs currently prevent other communications providers from competing in the market for very high bandwidth TISBO. This represents a significant distinction between very high bandwidth TISBO and the lower bandwidth markets, and has a significant impact on Ofcom's analysis.

Absence of potential competition

B.380 'Potential competition' refers to the prospect of new competitors entering the market within the timeframe considered for the market review. In the context of very high bandwidth TISBO, this primarily refers to the prospect of self-provision by other communications providers.

B.381 Given that the extent of entry in this market has hitherto been high, Ofcom has no reason to believe that this market is characterised by an absence of potential competition.

Barriers to switching

B.382 Ofcom does not consider that barriers to switching are currently the cause of significant problems in the very high bandwidth TISBO market. Ofcom's reasoning behind this is similar to that outlined above under the 'barriers to entry' heading. Additionally, the information made available to Ofcom suggests that BT's current market share is relatively low, and that the issue of switching to self provision is therefore less relevant.

Customers' ability to access and use information

B.383 As outlined under low bandwidth symmetric information, PPC buyers consist of relatively few, well-informed communications providers and self-provision is the main source of competition. This criterion is therefore unlikely to be relevant.

Very high bandwidth TISBO services: intensity of competition criteria

Barriers to expansion

B.384 Ofcom believes that these are not a relevant criteria in its analysis of this market. Relative to other leased lines markets, very high bandwidth TISBO is characterised by relatively few barriers to entry, and is a new market that Ofcom would expect to expand at a quicker rate.

Active competition on non-price factors

B.385 The discussion of this criterion in Ofcom's analysis of SMP in the markets for low (and high) bandwidth TISBO is, in Ofcom's opinion equally applicable to the market for very high bandwidth TISBO.

B.386 The text used in Ofcom's analysis of the market for low bandwidth TISBO is repeated below.

B.387 Non-price competition refers to differentiation between products and between providers. Product differentiation may be in terms of quality or in terms of diversity. Provider differentiation can be captured through reputation. Very high bandwidth TISBO are products that, in general, are not prone to differentiation and for which reputation does not play a role (although, as discussed above, Ofcom notes that certain other communications providers currently facing financial difficulties may be at a disadvantage relative to BT due to issues of reputation).

B.388 In summary, Ofcom believes that a lack of active competition on non-price factors criterion is not a major source of market power for BT.

Conclusion on assessment of SMP in very high bandwidth TISBO

B.389 Ofcom concludes that BT does not have SMP in very high bandwidth TISBO. Ofcom has reached this opinion in the light of information submitted to it concerning, chiefly, the extent to which market entry by other communications providers has been possible and BT's low market share. Other considerations, namely the unequal access to capital markets enjoyed by BT and other communications providers, and the presence of economies of scale and scope, might be interpreted as evidence in favour of suggesting that BT enjoys an advantage, but Ofcom considers that the evidence against BT having SMP is sufficient to outweigh such considerations.

B.390 It is possible that, as the market for very high bandwidth circuits expands beyond its current levels (and outside the limited geographical areas in which it currently exists), the high sunk costs for communications providers to self supply may begin to pose a barrier to the entry of other communications providers. Such factors will be considered when Ofcom next reviews the leased lines markets, However, Ofcom's view is that, in the period relevant to this review, the available evidence does not support a finding of SMP.

Market for Alternative Interface Symmetric Broadband Origination in the UK apart from Hull

B.391 The assessment of market power in the Alternative Interface Symmetric Broadband Origination ("AISBO") market is carried out in the absence of any remedy at both the wholesale and the retail level, for the reasons described in Chapter 2.

B.392 BT made a number of points regarding Ofcom's analysis of SMP in the market for AISBO as set out in the draft notification. These points, together with Ofcom's view on each, are outlined in Chapter 3. The conclusion of Ofcom's consideration of BT's response is that its analysis as outlined in the draft notification remains appropriate.

AISBO: summary of conclusions

B.393 Ofcom considers that BT has SMP in this market. It has reached this conclusion based on an analysis of, primarily (see the detailed assessment for the examination of other criteria):

- BT's high market share;
- the advantages enjoyed by BT due to the ubiquity of its infrastructure and the existence of barriers to entry, notably those provided by sunk costs;
- the greater economies of scale and scope enjoyed by BT; and
- the advantages BT enjoys as a result of its vertical integration.

Quantitative information criteria

B.394 The draft explanatory statement and notification presented Oftel's first detailed analysis of the information it has gathered regarding the alternative interface (predominantly Ethernet-based) retail market and the wholesale AISBO market. Because of this, the analysis below does not make use of any time series data on, for example, market shares. Ofcom's view is that this is unlikely to represent a significant gap in the available information given the very high level of BT's market share and the likelihood of similar shares having existed in previous years.

Market shares

B.395 Ofcom has not collected data relating specifically to the AISBO (as opposed to retail Ethernet-based circuits) market. However, Ofcom sees no reason why retail data would not be a good proxy for wholesale market shares in this context, given the general lack of availability of wholesale products. In terms of the section of the wholesale market that is used to supply retail Ethernet-based circuits, retail market data will tend to underestimate BT's share of the wholesale market, since BT currently supplies other operators with wholesale inputs (on "retail" terms) whereas the reverse is not true.

B.396 Ofcom considers that retail purchasers of alternative interface leased lines have two main ways in which they can source these circuits. The first is to purchase the whole leased line from a communications provider (using either of a fibre or wireless based technology), who would generally be responsible for the installation, maintenance and repair of that leased line. The second option is to source the individual components of the leased line from other suppliers i.e. purchasing separately the equipment (be it NTE for fibre or wireless equipment) and any transit medium (e.g. fibre) and self-provide the leased line.

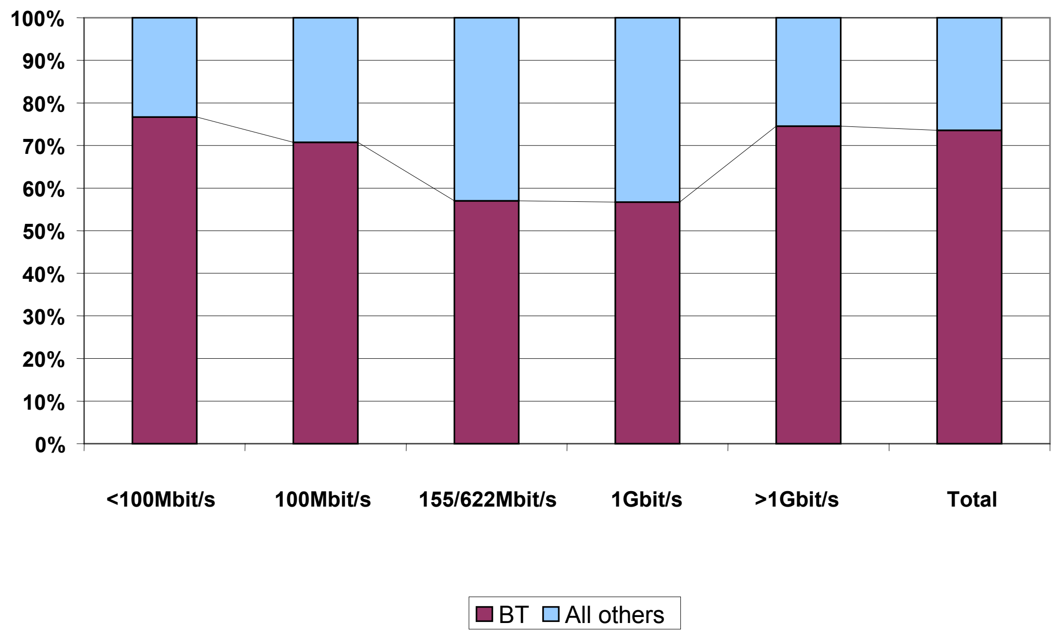
B.397 Ofcom is of the view that both these methods of providing alternative interface leased lines fall within the same market as the end product is almost identical in both situations in terms of the bandwidth and functionality provided. However, there a number of ways in which the self provided product is a "lower quality" service than the carrier provided version. These are likely to be related to factors such as maintenance, fault finding and repair, and service level guarantees. This means that self provision may not provide an effective constraint on the pricing of BT's retail AISBO services. Ofcom has nonetheless attempted to quantify the impact on market shares of including self provided circuits in the defined market.

Carrier provided alternative interface leased lines

B.398 In order to update its market share analysis, Ofcom gathered a detailed data set concerning the market shares of communications providers in the provision of retail alternative interface circuits during March and April 2004. Data was collected from 20 communications providers and covered providers of both fibre and wireless based leased lines. In addition to data on retail leased lines sold, information on the supply of dark fibre was also requested. This data showed that BT's share of the communications provider supplied part of the retail alternative interface market is above 70%.

B.399 As outlined at paragraphs A.202 to A.254 above, Ofcom's view is that there is a single market for alternative interface circuits that is not split according to bandwidth. However, for completeness and to address BT's suggestion that bandwidths splits exists, Ofcom has analysed BT's market share split according to bandwidth. This is shown in Figure B.14 below and indicates that, regardless of bandwidth, BT has a high market share. These figures were calculated by gathering information on the total number of alternative interface circuits sold by all the major UK carriers, based on a list of player supplied by BT.

Figure B.14 – retail alternative interface market share by bandwidth (carrier segment)



B.400 An assessment of the data obtained by Ofcom further showed that a significant number of the circuits provided by communications providers at the retail level (over 5% of the total alternative interface market) were supported using wholesale inputs provided by BT. When this is taken into account, BT's market share of the carrier provided sector of the wholesale AISBO market is over 78%.

Wireless based services

B.401 Ofcom's view is that wireless based solutions are unlikely to provide a strong competitive constraint on the majority of BT's AISBO circuits. This is based on three considerations:

B.402 The first of these is that the information available to Ofcom suggests that the use of wireless is not currently widespread. Sales information obtained from providers of wireless-based leased lines suggests that their share of the market accounts for a relatively small proportion (less than 5%) of the total alternative interface market, and that this figure would be lower if self-provision were to become more widespread.

B.403 Secondly, there are reasons to think that this will persist on a forward-looking basis, since:

- the requirement for line-of-sight means that wireless solutions are typically not viable alternatives to fibre, particularly in dense, built-up urban areas where the majority of demand for alternative interface circuits is centred; and
- the fact that the bandwidth available generally decreases as distance increases means that wireless is likely to be a particularly poor substitute for fibre-based alternative interface services at higher bandwidths.

B.404 Thirdly, a number of communications providers have told Ofcom that their customers do not view wireless to be as reliable or secure as fibre.

B.405 Freespace optics are a relatively recent development and Ofcom does not believe that they are likely to develop to a sufficient extent over the next two years to form a competitive constraint on BT during this period. The technology requires line of sight between customer premises using a laser diode to transmit data between the respective sites. The technology is a relatively recent addition into the range of technologies used to provide point to point transmission links. Freespace optics can be deployed as a substitute for other technologies but there are some doubts as to whether it will ever be widely deployed due to the requirement for line of sight and the doubts about its robustness. There have been a limited number of installations of AISBO circuits using freespace optics and, although this number is expected to grow, Ofcom's view is that this will only ever make up a relatively small part of the AISBO market due to the limitations of the technology outlined above.

Fibre based circuits – self provision

B.406 It is difficult to assess the precise extent of the self provision share of the alternative interface market due to the large number of equipment and fibre suppliers and the number of different uses to which the equipment and fibre could be put other than for the provision of alternative interface leased lines. Simply looking at the supply of dark fibre does not identify what products that fibre is being used to provide and whether those products fall within the AISBO market. Dark fibre could also be used to extend the networks of communications providers or for the provision of traditional interface or asymmetric broadband products. Similarly, some of the equipment used to provide alternative interface circuits to end users could also be used within communications providers' networks or for the provision of WDM services.

B.407 In considering the scope of self-supply using dark fibre, Ofcom has done two things:

(i) considered the availability of dark fibre across the UK; and
(ii) looked at sales data from manufacturers of alternative interface equipment.

B.408 Ofcom has considered, from a feasibility perspective, the extent to which communications providers are able to supply dark fibre to retail customers. Communications providers lack the same ubiquity of duct and fibre network that BT has and, as such, are able to provide fibre in far fewer cases than BT. As discussed in Chapter 2, even in areas of high demand where communications providers have substantial networks, such as the Central London Zone, there are still a significant number of retail business customers that communications providers are unable to reach. This means that the sourcing of dark fibre from competing infrastructure providers in order to self-supply an alternative interface leased line is likely to be infeasible in many situations. This is backed up by the fact that a number of communications providers have advised (supported by BT's sales data) that in many cases they are reliant on BT's retail LES products in order to supply alternative interface circuits to their customers. Were dark fibre widely available for purchase, Ofcom would expect communications providers to take advantage of it in order to provide alternative interface circuits to their customers at lower cost than using BT's retail products. Other communications providers have strongly supported Ofcom's proposals as regards alternative interface leased lines, arguing that without a wholesale equivalent being made available, they will be unable to compete against BT at the retail level for major contracts.

B.409 Ofcom has also gathered data from communications providers as to the amount of dark access fibre that they currently sell. Such information is flawed in that it does not indicate the extent to which dark fibre is used to support AISBO type services. However, the information received by Ofcom showed that on average each communications provider supplied dark fibre to a relative small number of retail customers, meaning that, even if all such fibre were used to provide AISBO services, BT's share of the total market would remain very high.

B.410 Data on equipment sales also needs to be treated with caution when estimating the importance of self-provision within the market as a whole. The quantitative information most relevant to the strength of BT's market position is its share of the *total installed base* of AISBO circuits, which is a "stock" measure. In contrast, data on the sales of equipment providers in a particular time period is a "flow" measure, which reflects only the *additions* to each company's installed base of customers and could, for example, include replacement or upgrade equipment for existing leased lines. Given this, Ofcom is inclined to put a limited amount of weight on such measures. However, it has looked at data from one equipment supplier in order to assess the extent to which its sales were to retail customers as opposed to communications providers, in order to gain some further understanding of the likely size of the self-provide market.

B.411 The largest UK supplier of Ethernet-based alternative interface equipment is ADVA Optical Networking (ADVA). Sales data provided by ADVA for the period between January 2002 and April 2004 suggest that the vast majority (over 95%) of its sales have been to communications providers as opposed to retail customers. Of these sales to communications providers, the majority were to BT. This limited number of sales to retail customers (as opposed to communications providers), together with the relatively small sales of dark access fibre referred to above, means that Ofcom is of the view that it is extremely unlikely that the self-supply segment of the market is very large, and that, whilst BT's share of the overall market cannot be precisely quantified, is likely to be quite close to its share of the carrier market, and well above a level that would be consistent with BT being dominant in the market.

B.412 Ofcom notes that its snapshot regarding Ethernet equipment sales may be distorted by the fact that BT is the largest single purchaser of leased lines equipment in the market and that it purchases the majority of its alternative interface equipment from ADVA. This means that the full extent of self-provision is therefore likely to be greater than that suggested by the figures provided by BT's equipment provider. However, given the extent of BT's share, and the fact that ADVA is the largest supplier in the market, Ofcom's view is that its estimates are unlikely to be significantly biased upwards.

BT's overall market share

B.413 Given BT's superior network reach, its very large share of the market shared by it and the other communications providers, and the modest degree of self-provision implied by the sales data of BT's equipment providers and the known limitations in the availability of fibre networks belonging to other communications providers, Ofcom has concluded that BT has SMP in the AISBO market. Ofcom considers that BT's SMP is not currently mitigated by historical or potential self-provision and that BT's current share of the market is at a level consistent with a position of dominance. Ofcom's market share information suggests that, absent self-provision, BT's retail market share, on a "number of circuits" basis, is in excess of 70%. The evidence that Ofcom has gathered strongly suggests that it is unlikely to mean that BT's market share is below a level that would be considered to be consistent with a dominant position on BT's part. For example, the self-provide market would need to number approximately 10,000 circuits, twice the number of alternative interface circuits collectively sold by competing communications providers (this is relevant because alternative communications providers would be a key source of dark fibre in the self provision market), for BT's share of the market to be below 50%. The information gathered by Ofcom on dark fibre sales and Ethernet equipment sales suggests that this is unlikely to be the case.

B.414 Ofcom's estimate of BT's market share is significantly higher than BT's own estimate, which is in the region of 30%. Ofcom's view is that its own estimate is substantially more reliable than that of BT, being based on evidence from three separate sources, namely: communications providers (including wireless), equipment manufacturers, and suppliers of dark fibre, whereas BT's estimate appears to be based on a single measure, namely the sales data of equipment suppliers. Ofcom's view is that its own estimate is more reliable since it takes into account the total base of circuits offered by all communications providers. Ofcom has only used the equipment supplier as a cross-check, and to help it attempt to quantify the extent of self provision in the market.

Excess pricing and profitability

B.415 Reliable data on BT's profitability in the provision of AISBO circuits is not available to Ofcom.

International benchmarking

B.416 International benchmarking data relating to AISBO circuits is not currently available to Ofcom.

Firm-related criteria

Technological advantages or superiority

B.417 This criterion is unlikely to be of key importance to the AISBO market since the use of Ethernet is relatively well established (other than the use of emerging technologies such as WDM, which currently accounts for a relatively small number of circuits), such services having been offered for over five years, and the relevant technology is therefore well known to all communications providers. Additionally, the incumbent is supplied with technological inputs (e.g. lengths of fibre, routers, and so on) by the same firms as other communications providers.

Control of infrastructure not easily duplicated

B.418 AISBO circuits are not easily duplicable in the sense that significant amounts of time and money are required in order to roll them out. As the former monopoly, BT has developed and now enjoys a ubiquitous network, having undertaken the sunk investment to provide it with duct and fibre access to a far greater number of customer premises than other communications providers. This implies that BT has the essential building blocks ready at its disposal to supply AISBO at most locations within the UK within a reasonable time period, and without incurring very substantial costs. In other words, the ubiquity of BT's network makes its cost of marginal deployment of AISBO circuits lower and makes it easier for BT to cover many locations.

B.419 Most communications providers requiring services in this market are recent entrants relative to BT, and are still in the process of building out their level of network coverage. This implies that competing networks are not extensive and that their costs are not yet sunk. This means that communications providers other than BT are not likely to be in a position to self-supply AISBO outside areas in which they currently have established points of presence.

B.420 As outlined in paragraphs A.202 to A.254 above, evidence supplied to Ofcom by communications providers other than BT suggests that, even in metropolitan areas such as central London, their fibre networks remain some way from being able to offer ubiquitous coverage. This factor is significant when considered together with the substantial dig costs that must be incurred in order to offer such services. Given the relatively low cost of Ethernet end-user equipment, these dig costs represent a particularly large proportion of the total costs of providing AISBO. The approximate magnitude of these costs on a national average basis are provided in paragraph B.235 above, but Ofcom has additionally been supplied with confidential data supplied by alternative communications providers that suggests that per metre dig costs are very substantially higher than this in certain area types, notably in built-up metropolitan areas.

B.421 The expected revenues from the provision of retail AISBO are low relative to the expected revenues from retail high and very high bandwidth TISBO. Duct and fibre costs, which, unlike equipment costs, are not incurred on an equal basis by BT and other communications providers (BT's advantage being very significant due to the ubiquity of its network), form a relatively large proportion of the total costs that must be incurred to provide alternative interface circuits directly over fibre. This means that the barriers to entry in the AISBO market are at a level comparable with the low bandwidth TISBO market, even though AISBO circuits are sold at high and very high bandwidths. This is shown by price comparisons supplied to Ofcom by communications providers including BT. For example, BT's data suggested that, over a distance of 17km, the connection and rental charges of a 155Mbit/s PPC circuit were around twice the level of a 100Mbit/s LES circuit.

Economies of scale

B.422 Economies of scale achievable in the provision of AISBO are likely to be similar to those inherent in the provision of TISBO. The main economies of scale in supplying AISBO derive from the existence of large fixed costs, namely the costs of building ducts and laying fibre. Once duct has been built and fibre laid, the cost of supplying additional AISBO circuits using these ducts and fibre is relatively small. In other words, the average cost of supplying AISBO to a given location decreases with the number of AISBO circuits serving that location. This means that scale economies relating to AISBO are likely to vary with geographical locations (i.e. with density of customers).

Economies of scope

B.423 Economies of scope arise in the AISBO market if the costs incurred in supplying AISBO can be shared with various other products. BT's economies of scope are likely to be greater than those of other communications providers. This is because BT offers a relatively large number of products and can therefore spread the costs of the AISBO common inputs over a larger array of products and services.

B.424 One key example of economies of scope in the case of AISBO derives from the possibility of using duct to carry a range of products and services rather than just AISBO. Since the costs incurred by suppliers of AISBO for digging and laying duct are substantial, all communications providers try to take advantage of this and to maximise the number of products that can be supplied by means of the same duct. In assessing the importance of this potential scope economy for communications providers, it must be kept in mind that only the owner of the duct can take advantage of it. This means that with respect to the economies of scope derived from duct usage, BT is likely to have a significant advantage compared with its competitors.

Concerning marketing and strategies

Product/services diversification

B.425 This criterion is not of great relevance to the assessment of market power in the AISBO market. Ofcom is not aware of BT having tended to bundle other products together with AISBO, and considers that BT has SMP in AISBO regardless of BT's pricing in relation to other products and markets.

Vertical integration

B.426 In the context of the AISBO market, vertical integration could refer to either:

- integration between the upstream AISBO market and the downstream retail alternative interface circuits market; or
- integration between the AISBO market and markets for other inputs that are further upstream, such as WDM.

B.427 As outlined in Annex A above, vertical integration is important in the market for AISBO because of BT's high market share at the retail level. This means that a large part of the market for AISBO is foreclosed to potential competitors to BT.

B.428 The first of these considerations is likely to increase the strength of BT's position in the market for AISBO since its high retail market share (see above) means that a large part of the AISBO market is foreclosed to other communications providers. This factor, together with the potential for economies of scale, puts BT at a significant advantage *vis-à-vis* its competitors.

B.429 Ofcom's view is that the second of the above considerations is currently unlikely to be a major source of competitive advantage to BT in the supply of AISBO.

Distribution and sales network

B.430 This criterion is unlikely to be an issue in the case of AISBO. The buyers (and suppliers) of AISBO are few in number, and are all relatively well known. BT's distribution and sales network is therefore unlikely to confer any significant advantage on it in this market.

Access to capital markets and financial resources

B.431 BT's larger overall size and relatively strong balance sheet may put it at an advantage when it comes to funding new network infrastructure. A number of other providers have recently faced financial pressures that may have constrained their willingness and ability to invest in new areas. For example, some communications providers may be reliant on securing orders at the retail level before investing in network infrastructure, and may face a higher cost of capital.

Customer-related criteria

Countervailing buying power

B.432 Ofcom's view is that buyer power is very unlikely to mitigate BT's market power in the AISBO market. Information previously supplied by BT to Oftel shows that, in 2003, in the provision of AISBO circuits at the retail level at between 155Mbit/s and 1Gbit/s (which together represent under 6% of BT's total base of AISBO circuits) it sold circuits to over 150 individual customers, with only one of these customers accounting for over 5% of all such circuits (and even then well under 10% of the total). Many of the largest purchasers of BT's retail AISBO offering are communications providers who compete with BT at the retail level. Such companies will clearly be in a weak position to exercise buyer power if BT is competing with them for business at the retail level. Based on the small sample of circuits referred to above, all of BT's true "retail" customers, i.e. customers other than alternative communications providers, accounted for less than 2.5% of BT's sales of AISBO circuits each. In this context, Ofcom's view is that buyer power is unlikely to play a key role in the AISBO market. Although the tender process is well established in leased lines markets, it is unlikely to mitigate BT's market power given its wide-ranging advantages over other communications providers.

Market entry related criteria

Ease of market entry

B.433 Barriers to entry are a strong feature of the AISBO market. As discussed above, substantial sunk costs are incurred by communications providers attempting to roll out duct and fibre to extend their networks to customer premises. While these sunk costs are lower if a communications provider is already supplying circuits at a certain premises, it appears to Ofcom that in many cases these sunk costs represent a substantial barrier to entry in the AISBO market.

B.434 Alternative communications providers have supplied Ofcom with confidential cost data comparing, on a per km basis, dig costs with the prices of BT's retail LES circuits. These figures show that, by self-supplying SBO, communications providers are unlikely to be able to compete with BT's retail charges for LES circuits in many instances. For example, estimates supplied to Ofcom by communications providers concerning the feasibility of competing with BT suggest that the capital expenditure required to compete with BT's retail LES products can be higher than 10 years' worth of BT's revenues. This may be ameliorated to the extent that such dig costs could be spread over a variety of services. But, as discussed above, BT is likely to have a significant advantage over other communications providers in terms of economies of scope.

Absence of potential competition

B.435 "Potential competition" refers to the prospect of new competitors entering the market within the timeframe considered for the market review. In the context of AISBO, this refers to the prospect of self-provision by communications providers other than BT. The prospect of widespread entry by new firms appears to Ofcom to be limited. This is due to:

- entry barriers;
- the current financial situation affecting many other communications providers; and
- the fact that Ofcom is not aware of any widespread entry by new players having occurred over the past two years or so.

B.436 Although entry into the market through the provision of wireless-based alternative interface circuits may be relatively easy, for the reasons set out above Ofcom considers that the use of such technology is unlikely to be sufficient to provide a strong competitive constraint on the majority of BT's AISBO circuits due to the line-of-sight requirements and the fact that that the bandwidth available generally decreases as distance increases.

Barriers to switching

B.437 This refers to the possible difficulties communications providers would face in switching from buying AISBO from BT to self-provision. In Ofcom's view, this market is characterised by barriers to switching. These include various costs associated with switching, including those of simultaneously running a BT AISBO circuit together with a self-provided one. Contract length, and penalties for early termination, may also be barriers to switching.

Customers' ability to access and use information

B.438 This criterion is not relevant for the assessment of market power in AISBO. This is because the buyers of AISBO are very few in number, being a group of well-informed communications providers. Self-provision is the main source of competition.

Intensity of competition criteria

Barriers to expansion

B.439 Ofcom is not aware of substantial barriers to expansion in the AISBO market that exist in addition to the barriers to entry and switching discussed above.

Active competition on non-price factors

B.440 Non-price competition refers to differentiation between products and between providers. Product differentiation may be in terms of quality or in terms of diversity. Provider differentiation can be captured through reputation. Products such as AISBO are in general characterised by widespread product differentiation. This criterion is therefore of minimal relevance to the SMP assessment for AISBO.

Conclusion on assessment of market power in AISBO

B.441 Ofcom concludes that BT has significant market power in the market for AISBO. Ofcom has reached this view based on an analysis of, primarily:

- BT's high market share;
- the advantages enjoyed by BT due to the ubiquity of its infrastructure and the existence of barriers to entry, notably those provided by sunk costs;
- the greater economies of scale and scope enjoyed by BT; and
- the advantages BT enjoys as a result of its vertical integration.

Likelihood of competition developing in the future

B.442 Ofcom has considered the potential impact of external factors on this market during the period covered by this review. Ofcom's view is that there are no developments that would generate sufficient competitive pressures within the next 2-3 years to alter the current finding of SMP. This is because the sources of SMP are high structural barriers to entry and because demand conditions and technological progress are unlikely to be able to reduce the strength of these entry barriers in the near future. However, Ofcom will keep market conditions under review.

B.443 Ofcom notes that the AISBO market might be expected to grow more quickly in the next few years on a percentage basis than the market for TISBO services. However, Ofcom's view is that BT's current strong position is likely to persist during the period covered by this review. Data gathered by Oftel and Ofcom at the end of 2002 and the beginning of 2004 both indicated that BT had a high market share. On this basis, and given that Ofcom expects that the advantages conferred on BT by the ubiquity of its network are likely to persist for the foreseeable future, Ofcom's view is that growth in this market is unlikely to substantially mitigate BT's very strong position.

Kingston upon Hull

Low bandwidth traditional interface retail leased lines in the Hull area

B.444 As explained in Ofcom's description of the order of its market analysis in Chapter 2, the SMP assessment of the low bandwidth traditional interface retail leased line market shall be carried out in the presence of the proposed remedy at the wholesale level but in absence of any remedy at the retail level.

Low bandwidth traditional interface retail leased lines in the Hull area: quantitative information criteria

Market shares

B.445 Ofcom has not been supplied with sufficiently detailed information from every communications provider in order for it to be able to determine the market shares of players in leased lines markets in Kingston upon Hull with complete certainty. The only network based competition in leased lines in the Kingston area is provided by other communications providers via means such as radio links to provide direct connectivity with customer sites within the Kingston upon Hull area.

B.446 Estimates provided by Kingston suggest that its market share in the low bandwidth traditional interface retail market is in the region of 83%, or 76% when adjusted to exclude sales to other communications providers (which are currently made on the same terms as sales to end users). Persistent market shares of this size are consistent with a presumption of dominance. While specific market share figures are not available for earlier years, Ofcom considers it likely that Kingston's share has been similarly high for a number of years and is not aware of any competing providers having recently left the market.

Excess pricing and profitability

Pricing

B.447 In the absence of reliable cost data against which to compare prices, it is difficult to assess the relationship between Kingston's prices for products in this market and their underlying cost. Additionally, benchmarking Kingston's prices against those of other communications providers (in either the UK or overseas) is a difficult exercise. This is because, perhaps because the Hull geographic area is relatively small, Kingston's circuits are not charged on a distance related (e.g. per km) basis. Other operators generally charge on a distance related basis. Ofcom has therefore not relied on an analysis of Kingston's prices in its analysis.

Profitability

B.448 Kingston has not supplied Ofcom with reliable estimates of its profitability rates for traditional interface retail leased line products. Estimates provided to Ofcom included a ROCE estimate in excess of 90%. In the absence of more reliable figures, Ofcom has based its quantitative assessment on other criteria, i.e. Kingston' market share, but has included the 90% figure since this is Kingston's own estimate.

Low bandwidth traditional interface retail leased lines in the Hull area: firm related criteria

Technological advantages or superiority

B.449 Ofcom does not believe this criterion to be relevant, because the technology used to supply leased lines is mature (communications providers and customers have commented that leased lines are a “commodity product”), and because suppliers to the incumbent can also supply to any other communications providers. Additionally, it seems implausible that Kingston would have advantages over potential entrants based on technological superiority, given its relatively small R&D capability.

Control of infrastructure not easily duplicated

B.450 The market for low bandwidth traditional interface retail leased lines in the Hull area is small in the context of the UK as a whole (Kingston estimates that the total market numbers approximately 1,500 lines) and Kingston’s current share of the retail market is very high. Ofcom believes that the barriers to entry outlined in Ofcom’s assessment of SMP in the markets for TISBO (see below) are likely to continue to cause problems in the retail market in the absence of any retail regulation. The reasons for this are outlined below in Ofcom’s discussion of barriers to entry at the retail level.

Economies of scale

B.451 Ofcom does not consider that Kingston’ position in the market for retail traditional interface leased lines is significantly strengthened by the presence of economies of scale. This is because, while Ofcom believes that provision of leased lines is in general characterised by the potential for economies of scale, it is unlikely that reproducing such economies of scale would be prohibitively difficult for other communications providers, given the relatively small size of the Hull area.

Economies of scope

B.452 Ofcom has identified that, in this market, Kingston enjoys greater economies of scope than other communications providers at the wholesale level. The imposed remedy at the wholesale level is expected to reduce the magnitude of the economies of scope advantage that Kingston enjoys. This is because the remedy requires the supply of TISBO upon request, without undue discrimination, and on a cost oriented basis. Cost oriented charges should reflect part of the cost saving enjoyed by Kingston as a result of economies of scope, and this will be passed on to the buyers.

B.453 Ofcom, however, believes that there exist economies of scope typical of the retail level, such as marketing. Because of its historical market position as an incumbent in the area, Kingston has a larger customer base than any other communications provider. This enables it to enjoy greater retail economies of scope than its competitors. As a result, Ofcom believes that Kingston’s retail market position is strengthened by these economies of scope, even though this strengthening effect is less than at the wholesale level.

Product/services diversification

B.454 This criterion does not seem to be significant for the assessment of SMP in the retail low bandwidth traditional interface leased lines market, as Ofcom is not aware that Kingston generally bundles other products with its retail leased lines offering.

Vertical integration

B.455 Kingston's vertical integration may generate efficiency relative to a chain of non-integrated firms, as it enables various transaction costs to be avoided. However a side effect of Kingston' vertical integration is that it is relatively difficult for other communications providers to enter the market for traditional interface retail leased lines due to Kingston's dominance of the wholesale market providing it with the potential to leverage market power into downstream markets.

B.456 Ofcom has imposed regulation to deal with discriminatory behaviour that Kingston might undertake in order to favour its retail business. However, whilst wholesale remedies may reduce the scope for vertical leveraging, they do not remove it entirely. For example, cost oriented charges for TISBO would be based on a measure of average costs, but marginal costs are lower. Kingston's ability to engage in margin squeezes to strengthen its retail low bandwidth traditional interface leased line business would not be removed.

Distribution and sales network

B.457 A well-developed distribution system and sales network is costly, sometimes even impossible, to reproduce and as such may represent an advantage over other competitors.

B.458 Ofcom does not consider that this factor is likely to be of great relevance to its SMP assessment in the market for low bandwidth traditional interface retail leased lines in the Hull area, given that the relevant customers are all relatively well informed business users.

Access to capital markets and financial resources

B.459 Kingston's size means it does not derive any benefits relative to potential entrants from its status as an incumbent communications provider within markets in the Hull area.

Low bandwidth traditional interface retail leased lines in the Hull area: customer related criteria

Countervailing buying power

B.460 Ofcom does not believe that this factor is likely to be of major relevance in the market for low bandwidth retail leased lines in the Hull area since it is not aware of any single customer accounting for a sufficiently large proportion of the relevant market.

Low bandwidth retail leased lines in the Hull area: market related criteria

Ease of market entry

B.461 In the light of Ofcom's order of market analysis, this discussion of the retail market will focus on those barriers to entry that apply in the presence of the imposed wholesale market regulation.

B.462 Ofcom's discussion of the markets for TISBO describes the existence of network-related barriers to entry. Ofcom's intention is that its wholesale remedies will largely mitigate the effects that these barriers might have at the retail level. However, the nature of the market in Kingston upon Hull is such that it is not certain that their impact will fully flow through to retail markets in the immediate future. In particular, inertia caused by Kingston's history as the main supplier of telecommunications services in the area, together with the small size of the market may act as a barrier to entry. This is because, even after the availability of cost oriented PPCs, retail competitors will need to incur certain fixed network and marketing costs that may not be economic given the size of the market.

Absence of potential competition

B.463 In the light of the limited size of the market for traditional interface retail leased lines in the Hull area, and the barriers to entry identified above, Ofcom does not believe that the potential for increased competition is particularly great.

Barriers to switching

B.464 Responses to the questions regarding leased lines in Oftel's survey *Business use of fixed telecom services and Internet in the Hull Area* (March 2003) revealed that nine out of ten leased line end users have never used another supplier. Five reasons for not switching leased line supplier are mentioned: perceptions of current supplier as cheapest (mentioned by a quarter), not aware of alternatives (a quarter), inertia (nearly 1 in 5), general satisfaction with current supplier (1 in 10), too busy (1 in 20) or tied into contract (1 in 20). Only one of these reasons, namely tied into contract, can be considered as a clear barrier to switching (although, under some circumstances, customer inertia could also make entry and expansion by competitors more difficult).

B.465 The same survey reveals that 30 per cent of leased line end users cannot switch because of the absence of alternative suppliers in the area where they are located.

B.466 On the basis of this information Ofcom is of the view that barriers to switching may be a source of SMP in the Hull area. However, in line with its analysis of the corresponding product markets in the UK excluding Hull, Ofcom's view is that other considerations are likely to provide stronger evidence of SMP.

Customers' ability to use and access information

B.467 The survey evidence available to Ofcom (see above) suggests that traditional interface retail leased lines customers in the Hull area are satisfied with the standard of information available to them.

B.468 The Oftel Business survey (2003), which reported on fixed telecom services and Internet in the Hull area, found that 25% of the leased line end users were not aware of existing alternatives. It is, however, not known whether or not these end users are located in areas where alternative suppliers are available.

Low bandwidth retail leased lines in the Hull area: intensity of competition criteria

Barriers to expansion

B.469 Ofcom's market share information suggests that growth in the size of the market for low bandwidth retail leased lines (between Q1 2001/02 and Q2 2002/03 the total number of lines fell by 8%) has been minimal in recent years. Ofcom anticipates that this situation, combined with barriers to entry (see above), would, absent regulation in the retail market, contribute towards Kingston Communication's ability to behave independently of competitors and consumers in this market, by making entry less attractive.

Active competition on non-price factors

B.470 Ofcom is of the view that the degree of competition on non-price factors in this market is at a low level, due to the very low sales volumes of alternative communications providers, and additionally in the light of its belief that leased lines products are generally not prone to significant product differentiation. The lack of active competition on the non-price factors criterion is not therefore relevant for the market power assessment analysis.

International benchmarking

B.471 Ofcom's analysis of markets in the Hull area has not relied on international benchmarking analysis, since Kingston is, relative to other incumbent communications providers, a relatively small communications provider, and operates in a relatively small geographic area. This makes price comparisons even more difficult than usual. As noted in the discussion of quantitative factors above, Kingston's charges are at approximately the same level as those of BT, which, as outlined in Ofcom's analysis of the UK market, are higher than those of most incumbent communications providers.

Likelihood of competition developing in the future

B.472 Ofcom has considered the potential impact of external factors on this market during the period covered by this review. Ofcom's view is that there are no developments that would generate sufficient competitive pressures within the next 2-3 years to alter the current finding of SMP. There are at least two reasons for this view. First, Kingston's market share is very high in the Hull area (83% including sales to other communications providers). Second the small size of, and the slow growth in, the Hull area make it unattractive for other communications providers to start supplying traditional interface retail leased lines. However, Ofcom will keep market conditions under review.

Conclusion on assessment of SMP in low bandwidth traditional interface retail leased lines in the Hull area

B.473 The investigation of the above market power criteria for the low bandwidth traditional interface retail leased lines indicates that, on a forward-looking basis, Kingston Communications is likely to continue to enjoy SMP even in the presence of Ofcom's remedies at the wholesale level.

B.474 Ofcom anticipates that it might take more than two years before the impact of these remedies is significant enough to remove the significant market power status of Kingston, in the light of its current very high market share and the current absence of a request from competing operators for a wholesale (TISBO) product in the Hull area.

The relatively small size of the market in Kingston upon Hull, and its low growth rate, are such that Ofcom considers that the likelihood of widespread entry is low. Ofcom considers that the economies of scope available to Kingston are likely to provide it with a material cost advantage over its current and potential competitors. Additionally, any cost based wholesale inputs provided by Kingston will be priced at a level more akin to average cost (LRIC) than marginal cost. Scope for vertical leveraging by Kingston from wholesale to retail level will persist to a degree.

B.475 The main reasons why Ofcom believes that Kingston would continue to able to behave to appreciable extent independently of competitors and customers in the absence of retail regulation are:

- it controls a network infrastructure that it is not economic for competitors to duplicate, due to:
    - small market size and slow growth
    - the presence of barriers to entry (sunk costs);
- economies of scope; and
- it is vertically integrated.

B.476 All these factors make entry in the low bandwidth traditional interface retail leased lines market difficult and unattractive. As a result, the competition is not intensive.

B.477 The factors set out above explain Kingston's high market share in the market for low bandwidth TISBO, which, based on estimates provided by Kingston Communications itself, is approximately 75% by volume.

Market for trunk segments

B.478 As described in the market definition, there is no separate market for trunk segments in the Hull area, since the market is UK-wide (see Ofcom's analysis of the market for trunk segments in the UK).

Market for low bandwidth traditional interface symmetric broadband origination in the Kingston upon Hull area

B.479 The assessment of market power in the low bandwidth traditional interface symmetric broadband origination ("TISBO") market has been made in the absence of any remedy at both the wholesale and the retail level for reasons described in Ofcom's description of the order of its market analysis in Chapter 2.

Market for low bandwidth TISBO in the Hull area: quantitative information criteria

Market shares

B.480 Kingston sells its leased lines products at 'retail' prices, even when the sales are to other telecommunications providers. Kingston has provided Ofcom with raw data that has enabled it to calculate an estimate of Kingston's market share at the low bandwidth 'wholesale' level, i.e. low bandwidth TISBO. The most relevant figure is its share of total market sales, including sales to its downstream arm (which sells at the retail level to end users) and to other communications providers.

B.481 Kingston's own estimate of its share of this market is 83% by volume (including sales to other operators). Whilst specific market share figures are not available for earlier years, Ofcom considers it likely that Kingston's share has been similarly high for a number of years. This market share information is consistent with a presumption of dominance.

Excess pricing and profitability

B.482 In the absence of wholesale regulation, Kingston does not offer TISBO on its own and instead other communications providers have to buy traditional interface retail leased lines at retail prices. As outlined in the discussion of Kingston's SMP at the retail level, Ofcom has carried out its assessment of SMP without reference to an analysis of Kingston's prices.

Market for low bandwidth TISBO in the Hull area: firm related criteria

Technological advantages or superiority

B.483 Ofcom does not believe this criterion to be relevant, because the technology used to supply leased lines is mature (communications providers and customers comment that leased lines are a "commodity product"), and because suppliers to the incumbent can also supply to any other communications providers. Additionally, it seems implausible that Kingston would have advantages over potential entrants based on technological superiority, given its relatively small R&D capability.

Control of infrastructure not easily duplicated

B.484 Kingston is alone in having substantial network coverage in the Hull area. This is analogous to the position of BT in the wider UK market. The extent to which it is profitable for other communications providers to enter wholesale markets in the Kingston upon Hull area is considered in Ofcom's discussion of barriers to entry below.

Economies of scale

B.485 Kingston is not in a position to exploit economies of scale in markets for TISBO. This is because, while Ofcom believes that provision of leased lines is in general characterised by the potential for economies of scale, it is unlikely that reproducing such economies of scale would be prohibitively difficult for other communications providers.

Economies of scope

B.486 Kingston may be in a position to exploit economies of scope in markets for TISBO in the Hull area. There are two reasons for this. First, it is the only communications provider to offer a broad range of services on a widespread basis in this area. Second for each service provided, Kingston has the largest number of customers due to its historical incumbent position.

B.487 This is why Ofcom is of the view that Kingston Communications enjoys greater economies of scope than any other communications provider in this area and that this strengthens Kingston's market position in the low bandwidth TISBO market.

Product/services diversification

B.488 In the absence of wholesale regulation, Kingston does not offer TISBO on its own and instead other communications providers have to buy traditional interface retail leased lines at retail prices.

Vertical integration

B.489 In a manner analogous to that described in Ofcom's discussion of markets for TISBO in the UK excluding Kingston upon Hull, Kingston is able to foreclose a significant proportion of the wholesale markets in the Hull area because of its high market share at the retail level. This means that a large part of the wholesale market is not available to competitors.

Distribution and sales network

B.490 A well-developed distribution system for low bandwidth TISBO is not viewed as a potential indicator of market power, as the suppliers and buyers of low bandwidth TISBO are few in number and all know each other.

Access to capital markets and financial resources

B.491 Kingston Communication's size means it does not derive any benefits relative to potential entrants from its status as an incumbent communications provider within markets in the Hull area.

Market for low bandwidth TISBO in the Hull area: customer-related criteria

Countervailing buying power

B.492 Ofcom does not believe that any purchaser of TISBO is in a position to counter Kingston's very strong position in the relevant markets, given its very high market share.

Market for low bandwidth TISBO in the Hull area: market related criteria

Ease of market entry

B.493 The market for low bandwidth terminating segments in the Hull area is characterised by substantial barriers to entry.

B.494 Any potential entrant needs to undertake substantial sunk investment in order to offer TISBO services in competition with Kingston. The quantification provided in Ofcom's discussion of corresponding markets in the rest of the UK is equally applicable to the Hull area.

B.495 Given that no other communications provider owns significant network infrastructure in the Hull area, and that the expected revenues from entry into the market are low relative to the costs of entry, Ofcom considers that these factors are likely to pose a very substantial barrier to entry.

Absence of potential competition

B.496 Potential competition refers to the prospect of new competitors entering the market within the timeframe considered for the market review.

B.497 In the light of the barriers to entry identified above and the relative size of the relevant markets, Ofcom believes that the scope for potential competition in markets for TISBO is limited.

Barriers to switching

B.498 Ofcom is not aware of any specific widespread competition problems caused by barriers to switching that are of comparable significance to those caused by Kingston being the only network communications provider in the Hull area.

Customers' ability to use and access information

B.499 Ofcom believes that buyers of TISBO in the Hull area are likely to be in a good position to use and access relevant information, since the players involved are a small number of relatively well informed communications providers.

Market for low bandwidth TISBO in the Hull area: intensity of competition criteria

Barriers to expansion

B.500 It is difficult to assess the extent of barriers to expansion in a small area such as Kingston upon Hull. Ofcom has therefore based its SMP assessment on other factors.

Active competition on non-price factors

B.501 Ofcom is not aware of any competition on non-price factors that takes place in the Hull area.

International benchmarking

B.502 Ofcom's analysis of markets in the Hull area has not relied on international benchmarking analysis, since Kingston is, relative to other incumbent communications providers, a relatively small communications provider, and operates in a relatively small geographic area.

Likelihood of competition developing in the future

B.503 Ofcom has considered the potential impact of external factors on this market during the period covered by this review. Ofcom's view is that there are no developments that would generate sufficient competitive pressures within the next 2-3 years to alter the current finding of SMP. This is mainly because of the existence of substantial barriers to entry. As an incumbent, Kingston has sunk the costs of network deployment, and entrants will not be in a position to effectively compete at the wholesale level until they have sunk these costs. Another reason, also deriving from the legacy position of Kingston, is the greater economies of scope enjoyed by Kingston compared to those of any entrant. However, Ofcom will keep market conditions under review.

Conclusion on assessment of market power in the market for low bandwidth TISBO in the Kingston upon Hull area

B.504 Ofcom concludes that Kingston has SMP in the market for low bandwidth TISBO in the Hull area.

B.505 In the absence of wholesale regulation, Ofcom believes that Kingston would be able to behave to appreciable extent independently of competitors, retail communications providers, and, ultimately, customers.

B.506 This is due to its legacy position as the incumbent communications provider in the Hull area and high barriers to entry. Together these factors mean that Kingston controls an infrastructure that it would not be economic for competitors to duplicate. High barriers to entry arise from the large and sunk costs of building new network relative to the expected revenue, and from Kingston's ability to exploit greater economies of scope.

B.507 This factor explains Kingston's market share in the market for low bandwidth TISBO, which Kingston itself estimates to be in the region of 83% by volume (this figure relates to the sale of low bandwidth traditional interface retail leased lines including sales to other operators).

Market for high bandwidth traditional interface symmetric broadband origination in the Hull area

B.508 The assessment of market power in the high bandwidth traditional interface symmetric broadband origination ("TISBO") market has been made in the absence of any remedy at both the wholesale and the retail level for reasons described in Ofcom's description of the order of its market analysis in Chapter 2.

B.509 The overall size of the relevant market is small: data supplied by Kingston suggests that there are only nine high bandwidth circuits in the Hull area.

Market shares

B.510 Kingston sells its leased lines products at 'retail' prices, even when the sales are to other telecommunications providers. Kingston has provided Ofcom with raw data that has enabled it to calculate an estimate of Kingston's market share at the high bandwidth 'wholesale' level, i.e. high bandwidth TISBO. The most relevant figure is its share of total market sales, including sales to its downstream arm (which sells at the retail level to end users) and to other communications providers.

B.511 Kingston's own estimate of its share of this market is 65% by volume. Whilst specific market share figures are not available for earlier years, Ofcom considers it likely that Kingston's share has been similarly high for a number of years, meaning that the above share is consistent with a presumption of dominance.

Excess pricing and profitability

B.512 In the absence of wholesale regulation, Kingston does not offer TISBO on its own and instead other communications providers have to buy traditional interface retail leased lines at retail prices. As outlined in the discussion of Kingston's SMP at the retail level, Ofcom has carried out its assessment of SMP without reference to an analysis of Kingston's prices.

Market for high bandwidth TISBO in the Hull area: firm related criteria

Technological advantages or superiority

B.513 Ofcom does not believe this criterion to be relevant, because the technology used to supply leased lines is mature (communications providers and customers comment that leased lines are a “commodity product”), and because suppliers to the incumbent can also supply to any other communications providers. Additionally, it seems implausible that Kingston would have advantages over potential entrants based on technological superiority, given its relatively small R&D capability.

Control of infrastructure not easily duplicated

B.514 Kingston is alone in having substantial network coverage in the Hull area. This is analogous to the position of BT in the wider UK market. The extent to which it is profitable for other communications providers to enter wholesale markets in the Hull area is considered in Ofcom’s discussion of barriers to entry below.

Economies of scale

B.515 Kingston is not in a position to exploit economies of scale in markets for TISBO. This is because, while Ofcom believes that provision of leased lines is in general characterised by the potential for economies of scale, it is unlikely that reproducing such economies of scale would be prohibitively difficult for other communications providers.

Economies of scope

B.516 Kingston may be in a position to exploit economies of scope in markets for TISBO in the Hull area. This is so because it is the only communications provider to offer a broad range of services on a widespread basis in this area and because it has, per service, the largest number of customers due to its historical incumbent position.

B.517 This is why Ofcom is of the view that Kingston enjoys greater economies of scope than any other communications provider in this area and that this strengthens Kingston’s market position in the high bandwidth TISBO market.

Product/services diversification

B.518 In the absence of wholesale regulation, Kingston does not offer TISBO on its own and instead other communications providers have to buy traditional interface retail leased lines at retail prices.

Vertical integration

B.519 In a manner analogous to that described in Ofcom’s discussion of markets for TISBO in the UK excluding Kingston upon Hull, Kingston is able to foreclose a significant proportion of the wholesale markets in the Hull area because of its high market share at the retail level. This means that a large part of the wholesale market is not available to competitors.

Distribution and sales network

B.520 A well-developed distribution system for high bandwidth TISBO is not viewed as a potential indicator of market power, as the suppliers and buyers of low bandwidth TISBO are few in number and all know each other.

Access to capital markets and financial resources

B.521 Kingston's size means it does not derive any benefits relative to potential entrants from its status as an incumbent communications provider within markets in the Hull area.

Market for high bandwidth TISBO in the Hull area: customer-related criteria

Countervailing buying power

B.522 Ofcom does not believe that any purchaser of TISBO is in a position to counter Kingston's very strong position in the relevant markets, given its very high market share.

Market for high bandwidth TISBO in the Hull area: market related criteria

Ease of market entry

B.523 The market for high bandwidth terminating segments in the Hull area is characterised by significant barriers to entry.

B.524 Any potential entrant needs to undertake substantial sunk investment in order to offer TISBO services in competition with Kingston. The quantification provided in Ofcom's discussion of corresponding markets in the rest of the UK is equally applicable to the Hull area.

B.525 Given that no other communications provider owns significant network infrastructure in the Hull area, and that the expected revenues from entry into the market are relatively low, Ofcom considers that these factors are likely to pose a very substantial barrier to entry in the absence of wholesale regulation.

B.526 Ofcom considers that sunk costs create significant problems in the market for high bandwidth TISBO. The barriers to entry are not as high as for the low bandwidth market, because the expected revenue from high bandwidth circuits is larger (and many of the costs are independent of bandwidth). However, Ofcom considers that the sunk costs are still relatively high and so the barriers to entry are still significant. One further reason why entry may be unattractive is due to the very small size of the high bandwidth market, which, as of 27 May 2002, amounted to only nine circuits.

Absence of potential competition

B.527 Potential competition refers to the prospect of new competitors entering the market within the timeframe considered for the market review.

B.528 In the light of the barriers to entry identified above and the relative size of the relevant markets, Ofcom believes that the scope for potential competition in markets for TISBO is limited.

Barriers to switching

B.529 Ofcom is not aware of any specific widespread competition problems caused by barriers to switching that are of comparable significance to those caused by Kingston being the only network communications provider in the Hull area.

Customers' ability to use and access information

B.530 Ofcom believes that buyers of TISBO in the Hull area are likely to be in a good position to use and access relevant information, since the players involved are a small number of relatively well informed communications providers.

Market for high bandwidth TISBO in the Hull area: intensity of competition criteria

Barriers to expansion

B.531 It is difficult to assess the extent of barriers to expansion in a small area such as Kingston upon Hull. Ofcom has therefore based its SMP assessment on other factors.

Active competition on non-price factors

B.532 Ofcom is not aware of any competition on non-price factors that takes place in the Hull area.

International benchmarking

B.533 Ofcom's analysis of markets in the Hull area has not relied on international benchmarking analysis, since Kingston is, relative to other incumbent communications providers, a relatively small communications provider, and operates in a relatively small geographic area.

Likelihood of competition developing in the future

B.534 Ofcom has considered the potential impact of external factors on this market during the period covered by this review. Ofcom's view is that there are no developments that would generate sufficient competitive pressures within the next 2-3 years to alter the current finding of SMP. However, Ofcom will keep market conditions under review.

Conclusion on assessment of market power in the market for high bandwidth TISBO in the Hull area

B.535 Ofcom concludes that Kingston has SMP in the market for high bandwidth TISBO in the Hull area.

B.536 In the absence of wholesale regulation, Ofcom believes that Kingston would be able to behave to appreciable extent independently of competitors, retail communications providers, and, ultimately, customers.

B.537 This is due to its legacy position as the incumbent communications provider in the Hull area, which means that it controls an infrastructure that it would not be economic for competitors to duplicate due to the presence of barriers to entry. The small size of the high bandwidth TISBO market is such that these barriers are likely to prove difficult for any would-be entrant to overcome (despite the higher revenues that can be earned on high bandwidth leased lines services compared to low bandwidth services).

B.538 These factors explain Kingston's market share in the market for high bandwidth TISBO, which Kingston itself estimates to be in the region of 65% by volume.

Market for very high bandwidth traditional interface symmetric broadband origination in the Hull area

B.539 Responses to the data requests made by Oftel and Ofcom to communications providers (including Kingston) during the course of this review suggest that there are currently no very high bandwidth traditional interface retail or wholesale leased lines products sold in the Hull area. Therefore, whilst the market for very high bandwidth traditional interface symmetric broadband origination is a potential future market, it does not currently exist in the Hull area. Given this consideration, Ofcom considers it premature to conduct an SMP assessment in this market.

Market for alternative interface symmetric broadband origination in the Hull area

B.540 The assessment of market power in the alternative interface symmetric broadband origination ("AISBO") market has been made in the absence of any remedy at both the wholesale and the retail level for the reasons described in Ofcom's description of the order of its market analysis in Chapter 2.

B.541 The overall size of the relevant market is small: data supplied by Kingston and other communications providers suggests that there are only something in the region of 60 AISBO circuits in the Hull area supplied by communications providers and Kingston supplies all of these circuits. Although there is likely to be some self supply of alternative interface circuits through the use of wireless, Ofcom does not consider that this will reduce Kingston's market share below 50% due to the relatively small size of the Hull area and the number of businesses within it who use alternative interface leased lines.

Market shares

B.542 As stated above, the information received by Ofcom suggests that no other communications provider supplies AISBO circuits in the Kingston upon Hull area, though some self-provision of alternative interface circuits may take place through the use of wireless technology. Ofcom does not consider that self-provision is likely to be sufficient to affect its conclusion that Kingston has SMP in this market.

B.543 Whilst specific market share figures are not available for earlier years, Ofcom considers it likely that Kingston has been the main supplier of alternative interface based services since they were introduced, a position which is consistent with a presumption of dominance.

Excess pricing and profitability

B.544 Ofcom has not relied on this criterion to inform its SMP assessment in this market, since it has not conducted an investigation into whether either BT or Kingston's retail prices for alternative interface circuits are likely to be cost orientated, and hence an analysis of Kingston's pricing is unlikely to provide any meaningful insights into the extent of Kingston's degree of market power.

Market for AISBO in the Hull area: firm related criteria

Technological advantages or superiority

B.545 Ofcom does not believe this criterion to be relevant, because the technology used to supply alternative interface circuits is relatively mature, and because suppliers to the incumbent can also supply to any other communications providers. Additionally, it seems implausible that Kingston would have advantages over potential entrants based on technological superiority, given its relatively small R&D capability.

Control of infrastructure not easily duplicated

B.546 Kingston is alone in having a substantial network coverage in the Hull area. This is analogous to the position of BT in the wider UK market. The extent to which it is profitable for other communications providers to enter wholesale markets in the Hull area is considered in Ofcom's discussion of barriers to entry below.

Economies of scale

B.547 Kingston is unlikely to be in a position to exploit economies of scale in the market for AISBO. This is because, while Ofcom believes that provision of leased line products is in general characterised by the potential for economies of scale, it is unlikely that reproducing such economies of scale would be prohibitively difficult for other communications providers.

Economies of scope

B.548 Kingston may be in a position to exploit economies of scope in markets for AISBO in the Hull area. This is the case because it is the only communications provider to offer a broad range of services on a widespread basis in this area and because it has, per service, the largest number of customers due to its historical incumbent position. Ofcom is therefore of the view that Kingston is likely to enjoy greater economies of scope than any other communications provider in this area, and that this strengthens Kingston's market position in the AISBO market.

Product/services diversification

B.549 In the absence of wholesale regulation, Kingston does not offer AISBO, i.e. the wholesale product, on its own and instead other communications providers have to buy retail leased lines at retail prices.

Vertical integration

B.550 In a manner analogous to that described in Ofcom's discussion of markets for TISBO in the UK excluding Kingston upon Hull, Kingston is likely to be able to foreclose a significant proportion of the AISBO in the Hull area because of its high market share at the retail level. This means that a large part of the wholesale market is not available to competitors.

Distribution and sales network

B.551 A well-developed distribution system for AISBO is not viewed as a potential indicator of market power, as the suppliers and buyers of AISBO in the Kingston upon Hull area are few in number and all know each other.

Access to capital markets and financial resources

B.552 Kingston's size means it does not derive any benefits relative to potential entrants from its status as an incumbent communications provider within markets in the Hull area.

Market for AISBO in the Hull area: customer-related criteria

Countervailing buying power

B.553 Ofcom does not believe that any purchaser of AISBO is in a position to counter Kingston's very strong position in the relevant markets, given that no other suppliers offer the product.

Market for AISBO in the Hull area: market related criteria

Ease of market entry

B.554 Although entry into the market through the provision of wireless-based alternative interface circuits may be relatively easy, for the reasons set out above Ofcom considers that the use of such technology is unlikely to be sufficient to provide a strong competitive constraint on the majority of Kingston's AISBO circuits due to the line-of-sight requirements and the fact that that the bandwidth available generally decreases as distance increases. The provision of fibre-based alternative interface circuits in the Hull area is, however, characterised by significant barriers to entry.

B.555 Any potential entrant needs to undertake substantial sunk investment in order to offer AISBO in competition with Kingston. The quantification provided in Ofcom's discussion of corresponding markets in the rest of the UK is equally applicable to the Hull area.

B.556 Given that no other communications provider owns significant network infrastructure in the Hull area, and that the expected revenues from entry into the market are relatively low, Ofcom considers that these factors are likely to pose a very substantial barrier to entry in the absence of wholesale regulation.

B.557 Ofcom considers that sunk costs create significant problems in the market for AISBO. The barriers to entry are likely to be of comparable significance to those in the *low bandwidth* TISBO market, because the expected revenue from retail alternative interface circuits is relatively low. As outlined in the discussion of the AISBO market in the UK, the cost structure of AISBO is such that Kingston's ownership of significant lengths of ducting and fibre in the Kingston upon Hull area will provide it with a very significant advantage over potential entrants. This problem is compounded by the fact that entry is likely to be relatively unattractive due to the small size of the AISBO market in the Kingston upon Hull area.

Absence of potential competition

B.558 Potential competition refers to the prospect of new competitors entering the market within the timeframe considered for the market review. In the light of the barriers to entry identified above and the relative size of the relevant markets, Ofcom believes that the scope for potential competition in this market is limited.

Barriers to switching

B.559 Ofcom is not aware of any specific widespread competition problems caused by barriers to switching in this market that are of comparable significance to those caused by Kingston being the only network communications provider in the Hull area.

Customers' ability to use and access information

B.560 Ofcom believes that buyers of AISBO in the Hull area are likely to be in a good position to use and access relevant information, since the players involved are a small number of relatively well informed communications providers.

Market for AISBO in the Hull area: intensity of competition criteria

Barriers to expansion

B.561 It is difficult to assess the extent of barriers to expansion in a small area such as Kingston upon Hull. Ofcom has therefore based its SMP assessment on other factors.

Active competition on non-price factors

B.562 Ofcom is not aware of any competition on non-price factors that takes place in the Hull area.

International benchmarking

B.563 Ofcom's analysis of markets in the Hull area has not relied on international benchmarking analysis, since Kingston is, relative to other incumbent communications providers, a relatively small communications provider, and operates in a relatively small geographic area.

Likelihood of competition developing in the future

B.564 Ofcom has considered the potential impact of external factors on this market during the period covered by this review. Ofcom's view is that there are no developments that would generate sufficient competitive pressures within the next 2-3 years to alter the current finding of SMP. However, Ofcom will keep market conditions under review.

Conclusion on assessment of market power in the market for AISBO in the Hull area

B.565 Ofcom concludes that Kingston has SMP in the market for AISBO in the Hull area.

B.566 In the absence of wholesale regulation, Ofcom believes that Kingston would be able to behave to an appreciable extent independently of competitors, retail communications providers, and, ultimately, customers.

B.567 This is due to its legacy position as the incumbent communications provider in the Hull area, which means that it controls an infrastructure that it would not be economic for competitors to duplicate due to the presence of barriers to entry. The small size of the AISBO market in Kingston upon Hull is such that these barriers are likely to prove insurmountable for any would-be entrant (despite the higher revenues that can be earned on high bandwidth leased lines services compared to low bandwidth services).

B.568 These factors explain Kingston’s very high market share in the AISBO market.

Annex C

Cost benefit analysis for PPC price control

Introduction

C.1 This Annex aims to inform a clearer understanding of the potential costs and benefits of imposing a price control on PPC terminating segments. A careful investigation of the possibility of reaching meaningful quantification of costs and benefits for the 2003 set of market reviews has been carried out at a more global level. The conclusion of this investigation is that quantification efforts should focus on the impact of price reductions. There are two sets of reasons behind this conclusion. First, the short timeframe of the market reviews and resource constraints make it unrealistic to quantify more than a few elements. Second, several cost and benefit elements are by nature difficult to estimate in a robust manner as they cover dynamic aspects. This is why quantification in the leased line market review concentrates on the welfare gains generated by price reductions.

C.2 However, it is also important to recognise the other benefits and costs. Therefore, Ofcom has also undertaken a qualitative analysis of the other relevant elements that are more difficult to estimate.

C.3 This Annex sets out the general approach, methodology, and conclusions of the quantitative analysis, including appropriate sensitivity analysis. It also sets out a qualitative analysis of the other cost and benefit elements that have not been quantified. The approach taken in the following sections draws from CBA work carried out in connection with previous Oftel reviews of leased lines, for example *National Leased Lines: Effective competition review and policy options*, August 2000.

Quantified cost benefit analysis

Introduction

C.4 This section explains the additional cost benefit analysis work that has been carried out by Ofcom to quantify the impacts of regulating the leased lines markets, where such impacts have been identified as quantifiable. Four different analyses have been undertaken. These are:

- No obligation to supply versus obligation to supply for 8Mbit/s and below (low bandwidth);
- No obligation to supply versus obligation to supply for over 8Mbit/s (high bandwidth);
- Obligation to supply versus Ofcom price control for 8Mbit/s and below; and
- Obligation to supply versus Ofcom price control for over 8Mbit/s.

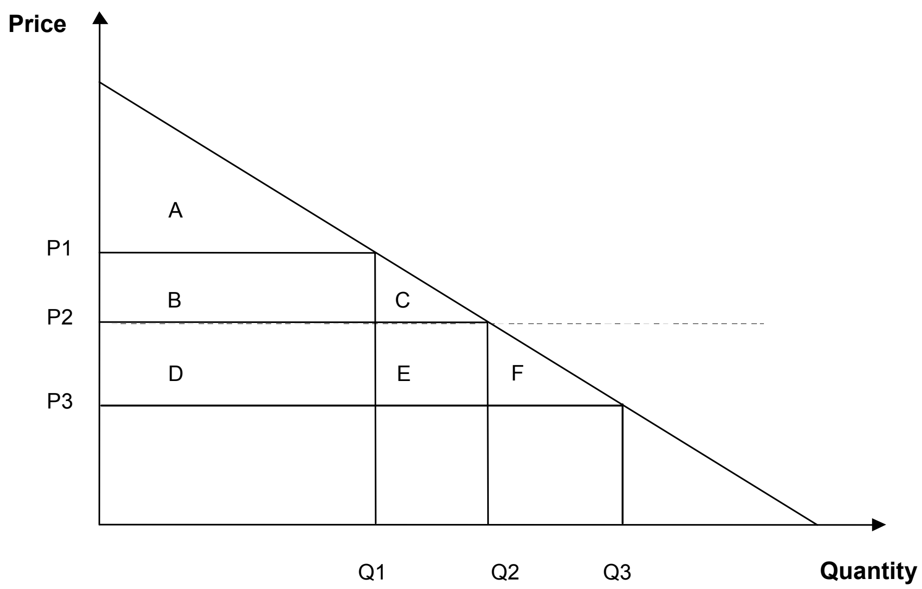
C.5 The first pair of comparisons compare traditional interface leased line retail prices prior to the introduction of PPCs in August 2001 to the retail prices of traditional interface leased lines after the introduction of PPCs. The second pair compare the retail prices of traditional interface leased lines after the introduction of PPCs with the forecast retail prices of traditional interface leased lines after the implementation of the interim price control proposals.

C.6 The analysis uses data from Q4 2000/01 for the initial retail prices and Q2 2002/03 for retail prices after the introduction of the obligation to supply. The post price control prices are calculated by reference to the PPC Phase 2 Direction charges. The analysis also allows the modelling of a number of sensitivities.

PPC CBA overview

C.7 The benefits that are going to be quantified in this Annex are those that accrue because of the reduction in the retail price of traditional interface digital leased lines (see Chapters 5 and 6). This price reduction is due to regulation in the wholesale markets: an obligation on BT to supply PPCs at the wholesale level and an interim price control on BT's provision of PPC terminating segments. There are two types of effect, welfare gains and transfer of producer surplus to consumers. These are represented in Figure C.1.

Figure C.1: Welfare gain diagram



Where:
P1 = the price that BT charges when it has no obligation to supply a wholesale product, i.e. the retail price;
P2 = the price that BT charges when it has an obligation to supply a wholesale product;
P3 = the average cost and the price that BT charges when it has an obligation to charge a cost oriented wholesale product under the conditions of Ofcom's price control;
Q1 = the quantity that corresponds to price P1;
Q2 = the quantity that corresponds to price P2; and
Q3 = the quantity that corresponds to price P3.

A = the original consumer surplus;
B+D = the original producer surplus;
C+E+F = the original dead-weight loss;
A+B+C = the consumer surplus at price P2 and quantity Q2;
D+E = the producer surplus at price P2 and quantity Q2;
F = the dead-weight loss at price P2 and quantity Q2;
A+B+C+D+E+F = the consumer surplus at price P3 and quantity Q3;

C+E = the welfare gain from moving from P1Q1 to P2Q2;
F = the welfare gain from moving from P2Q2 to P3Q3; and
C+E+F = the welfare gain from moving from P1Q1 to P3Q3.

C.8 The price when BT has an obligation to supply a wholesale product (P2) is the retail price of traditional interface leased lines after BT negotiated wholesale prices with other communications providers following Oftel's March 2001 PPC Direction. This Direction required that BT negotiate terms and conditions for the provision of PPCs, within the framework laid down by the Interconnection Directive (ICD). The ICD required that the negotiated terms and conditions be cost oriented.

C.9 To simplify the analysis, Ofcom has assumed that the price P3 is equal to cost and that there are no scale economies. This means that P3 is assumed to be equal to marginal cost. This simplifying assumption will tend to underestimate the magnitude of the benefits. However, the calculations should continue to give an accurate indication of the effects of the regulations being imposed.

C.10 The cost benefit analysis assumes that when BT has an obligation to supply a wholesale product, the price of retail traditional interface leased lines falls from P1 to P2 with consumption increasing from Q1 to Q2. This transfers area B of the original producer surplus to consumers, creates area C as new consumer surplus and creates area E as new producer surplus. The welfare gain is C+E. This welfare gain is a true benefit, rather than a transfer, representing the benefit from moving from inefficient pricing at P1 to more efficient pricing at P2.

C.11 The price reduction from P2 to P3 represents the change in retail price from the obligation to supply a wholesale PPC product to the retail price after the implementation of the interim price control proposals. This transfers areas D and E of the producer surplus to the consumer. The welfare gain, in the form of new consumer surplus, of this price reduction is area F. Again this welfare gain is a true benefit, rather than a transfer and represents the benefit from moving from inefficient pricing at P2 to efficient pricing at P3.

C.12 In summary, the shift from P1 to P3 transfers the producer surplus B+D to the consumer and creates a welfare gain of C+E+F.

No obligation to supply vs obligation to supply

C.13 To calculate the monetary benefits, Ofcom originally proposed to use data on the number of, and corresponding revenues for, the retail traditional interface leased lines BT provided in Q4 2000/01 and in Q2 2002/03, split by 8Mbit/s and below and over 8Mbit/s. Using this data, Ofcom intended to calculate total capacity in Mbit/s in each market and the average unit price by dividing the revenues in each category by the corresponding capacity figures. However, BT has only been able to provide robust data for the high bandwidth (over 8Mbit/s) market. Therefore, Ofcom has had to assume that price reduction in the low bandwidth (8Mbit/s and below) traditional interface market is of the same magnitude as shown by the data for the high bandwidth traditional interface market. The data is shown in Tables C.1 and C.2.

Table C.1: Retail traditional interface leased line provision and revenues Q4 2000/01[1]

	Capacity (Mbit/s)	Revenues (£m)	Unit price (£/Mbit/s)
<=8Mbit/s	211,086	438	2,075

>8Mbit/s	173,738	39	227

1. Numbers may not sum due to rounding

Table C.2: Retail traditional interface leased line provision and revenues Q2 2001/02[1]

	Capacity (Mbit/s)	Revenues (£m)	Unit price (£/Mbit/s)
<=8Mbit/s	Unavailable	unavailable	1756[2]
>8Mbit/s	250,196	48	192

1. Numbers may not sum due to rounding
2. Unit price calculated by reducing Q4 2000/01 unit price by 15%.

C.14 The retail price of leased lines reduced by around 15% in the high bandwidth traditional interface market.

C.15 Ofcom recognises that assuming similar proportionate price reductions in both markets from an obligation to supply may produce inaccurate results from the analysis. However, because of the data limitations, this is the best way in which the benefits can be calculated. The sensitivity analysis below calculates the benefits assuming smaller price reductions from the obligation to supply. This sensitivity analysis shows that the benefits of the obligation remain significant.

C.16 If BT had no obligation to supply wholesale TISBO products it would sell leased lines to wholesale customers at the retail price, P1 in Figure C.1. This is in fact what BT was doing before August 2001, when it was obliged to introduce a wholesale PPC product. With an obligation to supply, BT has to sell TISBO at a wholesale price selected by BT. This creates a new retail price P2 in figure C.1. P1 and P2 correspond to the unit costs in Tables C.1 and C.2 respectively.

C.17 In order to quantify the benefits of requiring BT to offer TISBO, it is necessary for Ofcom to make a number of simplifying assumptions. In addition to the evidence indicating a price reduction of around 15%, the main assumptions are:

- the price elasticity of demand;
- the form of the demand function; and
- the discount rate.

C.18 In the August 2000 document, Ofcom's central assumption for the elasticity of demand was –0.5. BT has suggested that the elasticity assumption was purely speculative but has not suggested or provided evidence for an alternative value for the elasticity. Ofcom has again assumed –0.5 as the central assumption for the elasticity of demand. In addition, Ofcom has carried out sensitivity analysis of this assumption. Some of the results of this sensitivity analysis are set out below. These results show that the benefits remain significant even if more pessimistic assumptions about the elasticity of demand are made.

C.19 Ofcom has used a varying elasticity demand function to calculate the welfare gains. This demand function is denoted by the following formula:

$$q = ae^{-bp}$$

Where: a = constant term
b = a positive constant

Point elasticity is given by = $-bp$

Consumer surplus is given by: q/b

C.20 Adopting this demand function in combination with the elasticity assumption allows the calculation of the welfare gains.

C.21 The appropriate discount rate to use to calculate the net present value of the benefits over time is the government discount rate. The government last year reassessed the level of its discount rate. The government considers its discount rate to be 3.5% in real terms (Source: *Green Book, Appraisal and Evaluation in Central Government: Treasury Guidance*, HM Treasury, January 2003). Ofcom has adopted this as the appropriate discount rate.

C.22 The central assumptions are summarised in Table C.3.

Table C.3: Ofcom's central assumptions

	Central assumption
Retail price reduction from obligation to supply	15%
Price elasticity of demand at starting price	-0.5
Form of demand function	$q = ae^{-bp}$
Discount rate	3.5%

C.23 From these assumptions, Ofcom has been able to calculate how much demand changes because of the reduction of the retail price, the corresponding welfare gain and the value of the transfer of producer surplus to consumers.

C.24 Table C.4 sets out a summary of the analysis. The figures show discounted totals over a 10 year period.

Table C.4: Benefits over 10 years from imposing an obligation to supply (£m)

	Consumer benefit	Welfare gain
<=8Mbit/s retail vs wholesale	561	113
>8Mbit/s retail vs wholesale	51	10

Obligation to supply versus terminating segments price control

C.25 Following negotiations pursuant to a Direction in March 2001, BT provided a wholesale PPC product. The March 2001 Direction required that BT provide wholesale PPCs to other communications providers on terms and conditions to be negotiated between BT and the communications providers within the framework laid down in the Interconnection Directive. The charges for PPCs were required to be cost oriented. However, after the completion of the negotiations and the introduction of a wholesale PPC product in August 2001, several of the communications providers requested that Oftel resolve disputes between themselves and BT. The conclusion of this process was the December 2002 Phase 2 Direction.

C.26 BT's regulatory obligation to supply, following the March 2001 PPC Direction, although requiring the provision of PPCs on cost oriented terms, did not result in cost oriented prices. In addition, an obligation to supply does not create incentives for BT to increase its efficiency over time. Ordinarily, competitive markets create incentives to keep prices cost oriented and to increase efficiency. However, where competition is not possible, price controls can be imposed to mimic the effect of the competitive market and introduce incentives to keep prices in line with costs and increase efficiency in the provision of a product or service.

C.27 As explained in Chapter 6, Ofcom is implementing interim price control arrangements, effective from 25 June 2004. Ofcom will replace these interim arrangements with longer-term proposals after it has undertaken a full analysis of BT's costs of providing PPCs. Ofcom expects this to come into effect on 1 October 2004.

C.28 Set out below is Ofcom's analysis of the costs and benefits of the interim price control proposals. In order to calculate the benefits from the interim price control assumptions in addition to the assumptions made above have to be made. These include:

- the cost path of PPCs;
- the effect of Oftel's PPC Phase 2 Direction on the retail price of leased lines;
- the value of X imposed by the interim price control; and
- the proportion of retail costs that are composed of the price controlled product.

C.29 Because of the various number of ways in which a PPC can be constructed it is necessary to make simplifying assumptions to carry out the analysis. The first simplifying assumption relates to the change in the costs over time of providing PPCs. The analysis of the benefits of the interim price control assumes that costs remain constant over the period in which the benefits are calculated. However, Ofcom expects that the costs of PPC provision will fall over time. This is due to economies of scale, falling equipment charges and through increased efficiency. A failure to correct for this cost reduction will allow welfare losses to grow. By assuming costs remain constant over time, the calculations set out below will tend to underestimate the benefits from the price regulation of PPCs.

C.30 Another simplifying assumption relates to the effect of the Phase 2 Direction on the price of leased lines. To ensure consistency with the conclusions of the market analysis, Ofcom has used the same assumptions about the costs of providing PPCs used in the market analysis to calculate the price of leased lines after the Phase 2 Direction to calculate the benefits of an interim price control.

C.31 To calculate the retail price of leased lines after the Phase 2 Direction, Ofcom has calculated the difference between the implied cost of providing a leased line (using BT's wholesale charges), including a margin to recover the cost of capital, against the corresponding price of a leased line as set out in BT's carrier price list. This gives a difference of around 35% in both of the relevant markets. Using these figures and assuming that the Phase 2 Direction will have the effect of reducing the price of retail leased lines to cost through effective regulation and increased levels of competition in the retail market, Ofcom then estimates revised retail leased line prices.

C.32 To calculate the benefits of the interim price control against the leased line retail price when there is an obligation to supply requires a further adjustment. This adjustment is to account for the reduction in the retail price of leased lines after the costs of terminating segments is reduced through the implementation of the interim price control.

C.33 The value of X in the interim price control is the amount by which BT will have to decrease the price of the items on its PPC carrier price list from 25 June 2004. As explained in Chapter 6, Ofcom has set the annualised value of X equal to the value of X for the interconnect specific basket (ISB) in the network charge control i.e. 7%, adjusted to reflect the fact that excess profit has already been removed (the value of X for the ISB reflects two factors - the projected rate of reduction of real unit costs and the erosion of existing excess profits. As PPC prices were set at cost, there is no excess profit to erode). This corresponds to a value of X of 20.9% for the implementation date of 25 June 2004. Revised PPC charges reflecting this are set out in Annex D. Ofcom has also inserted wording to ensure that BT does not raise its charges before implementation of these revised charges.

C.34 The general formula for calculating how the value of X is calculated is set out below and shows that if BT retrospectively implements the price control back to 1 August 2003 (when *n* becomes 0, the value of X is equal to 7%.

$$x_1 = x_0[1 + RPI - \left(\frac{366}{(366-n)} 7\% - \frac{n}{(366-n)} RPI \right)]$$

where:
x_0 = the price from Phase 2 (i.e. the price prevailing on 31 September 2003);
x_1 = the new price after the implementation of the interim price control;
n = the number of days after 1 August 2003 when the interim price control comes into effect; and
RPI = the rate of RPI inflation.

C.35 In the instance of retail leased lines, the product being price controlled is limited to the terminating segments of the wholesale PPC. Therefore Ofcom needs to estimate the proportion of the retail leased line that is composed of the cost of terminating segments. This can then be used to inform how much Ofcom can expect the price of retail leased lines to decrease because of a reduction in the price of terminating segments. Ofcom's central assumption is that 44% of leased line retail prices are composed of the costs of PPC terminating segments. This central assumption is informed by calculating the proportion of operating and capital costs from private circuits relating to connection circuit provision and local ends as reported in BT's financial statements for 2002/03.

C.36 A summary of Ofcom's central assumptions is set out in Table C.5.

Table C.5: Ofcom's central assumptions

	Central assumption
Retail price reduction from Phase 2 Direction	35%
Price elasticity of demand at starting price	-0.5
Form of demand function	$q = ae^{-bp}$
Discount rate	3.5%
Value of X	7%
Proportion of retail costs that are terminating segments	44%

C.37 From these assumptions Ofcom can work out the change in demand due to the reduction in the price of terminating segments. The discounted benefits of the price control are calculated over a period of ten years. Table C.6 sets out a summary of the conclusions of the analysis.

Table C.6: Benefits over 10 years from imposing price control on PPC terminating segments (£m)

	Consumer benefit	Welfare gain
<=8Mbit/s wholesale vs price control	1,231	121
>8Mbit/s wholesale vs price control	148	15

C.38 Figures in Tables C.4 and C.6 can be aggregated to illustrate the benefits of imposing an obligation to supply and a terminating segments price control on the two markets. This is shown in Table C.7.

Table C.7: Summary of benefits by market (£m) [1]

	Consumer benefit	Welfare gain
8Mbit/s and below	1,792	235
Above 8Mbit/s	199	25

1. Numbers may not sum due to rounding.

Conclusions of quantitative analysis

C.39 The analysis presented in Tables C.4, C.6 and C.7 shows that there are significant welfare gains to be made from imposing an obligation to supply TISBO and a price control on PPC terminating segments in both of the markets. In addition to these welfare gains, the analysis also shows that there are even greater transfer benefits to be realised from transferring the profits from high, inefficient prices from producers to consumers.

Sensitivity analysis

C.40 As explained above, to calculate the benefits of introducing an obligation to supply and a price cap on terminating segments requires Ofcom to make a number of assumptions. It is also necessary for Ofcom to make inferences from data associated with PPCs. As PPCs are a relatively new product, Ofcom cannot be confident that the results of its analysis are as robust as they could have been if they were the result of analysing data associated with more established products which had available more robust and better understood data.

C.41 In order to ensure that the conclusions of the analysis presented in this Annex are not overstated because of the assumptions and the data used Ofcom considers it appropriate to carry out sensitivity analysis of the assumptions. This sensitivity analysis is summarised below and is presented separately for the comparison of no obligation to supply versus obligation to supply and obligation to supply versus terminating segments price control.

No obligation to supply versus obligation to supply

C.42 The assumptions adopted for two sensitivity analysis are set out in Table C.8. The central assumptions are also set out for comparison.

Table C.8: Assumptions for sensitivity analysis.

	Central	Sensitivity 1	Sensitivity 2
Retail price reduction from	15%	10%	5%

wholesale obligation to supply			
Price elasticity of demand	-0.5	-0.3	-0.3
Form of demand function	$q = ae^{-bp}$	$q = ae^{-bp}$	$q = ae^{-bp}$
Discount rate	3.5%	3.5%	3.5%

C.43 The result of this sensitivity analysis is set out in Tables C.9 and C.10.

Table C.9: Benefits over 10 years from imposing an obligation to supply with alternative assumptions (£m). Sensitivity 1.

	Consumer benefit	Welfare gain
<=8Mbit/s retail vs wholesale	364	26
>8Mbit/s retail vs wholesale	33	2

Table C.10: Benefits over 10 years from imposing an obligation to supply with alternative assumptions (£m). Sensitivity 2.

	Consumer benefit	Welfare gain
<=8Mbit/s retail vs wholesale	182	7
>8Mbit/s retail vs wholesale	16	1

C.44 The summary tables above illustrate that even when alternative, more conservative assumptions are adopted the quantified benefits of introducing an obligation to supply, although diminished, remain significant, especially the benefit to consumers.

Obligation to supply versus terminating segments price control

C.45 The assumptions adopted for the sensitivity analysis when comparing the obligation to supply versus terminating segments price control for two sensitivities are set out in Table C.11. The central assumptions are also set out for comparison.

Table C.11: Assumptions for sensitivity analysis.

	Central	Sensitivity 1	Sensitivity 2
Retail price reduction from obligation to supply	15%	10%	5%
Retail price reduction from Phase II Direction	35%	20%	10%
Price elasticity of demand	-0.5	-0.3	-0.3
Form of demand function	$q = ae^{-bp}$	$q = ae^{-bp}$	$q = ae^{-bp}$
Discount rate	3.5%	3.5%	3.5%
Value of X	7%	3%	3%
Proportion of retail costs that are terminating segments	42%	20%	20%

C.46 The results of this sensitivity analysis are set out in Tables C.12 and C.13.

Table C.12: Benefits over 10 years from introducing an interim price control with alternative assumptions (£m). Sensitivity 1.

	Consumer benefit	Welfare gain
<=8Mbit/s retail vs wholesale	689	22

>8Mbit/s retail vs wholesale	87	3

Table C.13: Benefits over 10 years from introducing an interim price control with alternative assumptions (£m). Sensitivity 2.

	Consumer benefit	Welfare gain
<=8Mbit/s retail vs wholesale	367	6
>8Mbit/s retail vs wholesale	47	1

C.47 The total benefits for both sensitivity analysis of both the obligation to supply wholesale PPCs and the interim price control are set out in Tables C.14 and C.15 for both of the markets.

Table C.14: Benefits over 10 years from introducing a wholesale obligation to supply and an interim price control (£m). Sensitivity 1. [1]

	Consumer benefit	Welfare gain
<=8Mbit/s retail vs wholesale	1,053	47
>8Mbit/s retail vs wholesale	120	5

1. Numbers may not sum due to rounding

Table C.15: Benefits over 10 years from introducing a wholesale obligation to supply and an interim price control (£m). Sensitivity 2.[1]

	Consumer benefit	Welfare gain
<=8Mbit/s retail vs wholesale	549	13
>8Mbit/s retail vs wholesale	63	1

1. Numbers may not sum due to rounding

C.48 The summary tables above illustrate that for the interim price control, when alternative, more conservative assumptions are adopted the quantified benefits, although diminished, remain significant, especially the benefit to consumers.

C.49 While it is not possible to analyse the benefits of all potential assumptions, Ofcom's view is that the sensitivities outlined above cover a range of possible values. In addition to these, the results of sensitivity analysis could also be presented calculated using more optimistic assumptions. These would show that the potential benefits of regulation would be greater than that derived from the central assumption scenario.

Qualitative cost benefit analysis

C.50 As outlined at the introduction of this Annex, it is also important to recognise that there will be benefits and costs in addition to the monetary benefits of a price reduction. However, these are more difficult to quantify. A qualitative analysis of other benefits and costs are set out below.

No obligation to supply versus obligation to supply

C.51 This analysis compares a situation in which BT faces no obligation to provide PPCs, and a situation in which BT is obliged to supply PPCs at a price it chooses. The former scenario reflects the actual situation up to August 2001, when BT first provided PPCs. The second scenario prevailed from August 2001 until February

2003, until the implementation of retrospectively regulated prices as a result of the PPC Phase 2 Direction.

Sources of benefits

Price reduction inducing higher demand and output

C.52 The introduction of compulsory provision of PPCs will reduce barriers to entry in the retail leased lines markets, thereby stimulating competition. Increased competition should lead to lower prices for retail leased lines. This price reduction should lead to an increase of demand and output and hence a gain in consumer surplus. This effect has been quantified above. The price that is chosen by BT will determine the extent to which the availability of PPCs is effective at lowering entry barriers and thereby promoting competition. That is, the extent to which the post-regulation price at the retail level is lower than the pre-regulation price. BT's price choice is constrained by the Competition Act prohibition of the abuse of a dominant position, which prevents BT from charging an excessive price.

Cost efficiency

C.53 The introduction of a wholesale product (without a price control) will not provide BT with an incentive to make efficiency gains in its provision of terminating segments. However, any increase in competition in the core network is likely to provide BT with an incentive to make efficiency gains on the trunk section of its network.

Avoidance of inefficient entry

C.54 If PPCs are provided by BT at a price lower than BT's retail terminating segments then inefficient entry into the terminating segment market might be avoided. This would occur since inefficient firms would be less attracted to enter the market as a result of the reduced prices. This type of inefficient entry would occur where other communications providers' costs of providing leased lines were greater than the costs for BT to provide the equivalent leased lines.

Increased competition in data services that use leased lines as an input

C.55 The introduction of PPCs should, by reducing the prices of the inputs, allow other communications providers to compete more vigorously in the provision of data services. Indeed a range of data services use leased lines as an access circuit input. Other communications providers would be able to use PPCs to provide access to these data services. This should lead to lower prices for these services, a higher demand and a higher output, hence welfare gains.

Increased choice

C.56 The availability of PPCs at cost oriented prices should enable other communications providers the opportunity to offer more choice to end-users in terms of location, quality of service requirements, and diversity of product options.

Innovation

C.57 Increased competition arising from the introduction of PPCs may lead to increased innovation in the provision of leased line services. Other communications providers may develop a greater range of products and services, using PPCs as inputs, to meet diverse consumer needs.

Sources of costs

Compliance costs

C.58 Enforcement of the requirement on BT to supply PPCs is expected to generate compliance costs for BT and for Ofcom as compared to no control at all. However these costs are expected to be mainly of a one-off type, relating to the development and production of regulatory accounts for the PPCs.

Interconnection costs

C.59 It is expected that an increase in the demand for PPCs will be accompanied by an increase in points of connection between other communications providers' networks and BT. If this materialises, then the obligation to supply PPCs leads to additional costs, namely those of setting up these new points of connection between other the communications providers' and BT's networks.

Increase in average costs

C.60 At the retail level, the increase in demand for leased lines induced by the price reduction is likely to be accompanied by a re-distribution of the leased lines volume among the other communications providers and BT, with BT's share being eroded in favour of the other communications providers' shares. This may imply (depending on the market growth rate) that BT will enjoy lower economies of scale and hence face an increase in average costs. However there will be offsetting resource gains to the economy due to the increasing economies of scale experienced by the other communications providers. It is not clear which of the two effects will dominate. At the wholesale level, there is likely to be an overall increase in volumes and an accompanying overall increase in economies of scale.

Obligation to supply versus Ofcom price control

C.61 This analysis compares a scenario in which BT is obliged to supply PPCs (without any price cap) and a scenario in which BT is obliged to provide PPCs at prices regulated by a price cap. This CBA therefore assumes that BT must supply PPCs, and then compares the absence of price regulation policy with the price cap policy. The analysis reveals a number of sources of benefits and of costs.

Sources of benefits

Price reduction inducing higher demand and output

C.62 At both the wholesale and the retail level, a price reduction is expected with the introduction of a price cap on PPCs. However, price controls have a number of benefits over *ex-post* powers that can be used to prevent excessive pricing.

C.63 Within telecoms markets, there are frequently significant economies of scope. This means that it is more efficient for the same firm to supply a number of different services rather than for each to be provided by a different firm. It also means that there are likely to be significant common costs that cannot be causally attributed to the provision of any one service.

C.64 The existence of significant common costs complicates the assessment of excessive pricing under *ex-post* powers since it may be difficult to establish that prices in any one market are excessive without taking into account the extent of common cost recovery from other markets. A requirement for prices simply to be below stand-alone costs (the sum of incremental and common costs) could allow the firm to make excess profits since it would in effect allow multiple recovery of common costs. The corollary of these excess profits is of course the reduction in consumer welfare caused by prices being above and hence quantities below the competitive level.

C.65 A price control will include the attribution of common costs to the provision of certain services, thereby avoiding the problems outlined above.

C.66 Where there is a risk of a firm setting excessive prices due to a lack of competition, a price control with transparent, easy to monitor compliance conditions can help ensure that Ofcom achieves its goal of furthering the interests of citizens and consumers in relation to communications matters.

C.67 The expectation that the prices quoted by BT are likely to be higher than the price cap is likely to restrict the ability of other communications providers to offer lower retail prices. Hence the introduction of a price cap should lead to a larger price reduction at the retail level. This in turn will further increase demand and output at the retail level, and hence will generate a welfare gain.

Cost efficiency

C.68 Price controls can also introduce benefits in addition to ensuring that a firm with SMP does not price excessively. In particular, the RPI-X form of price control creates incentives on the price controlled firm to increase its efficiency, thereby mimicking the effect of a competitive market. If Ofcom were to rely on its *ex-post* powers to prevent excessive pricing, this efficiency benefit would be foregone.

C.69 Cost efficiency is likely to arise from two different directions. First, the increase in competition at the retail level will increase pressure on BT to make cost efficiency gains. Second, the wholesale price cap on terminating segments will also include an expected efficiency gain in the regulated price. Since the price reduction at the retail level is expected to be higher under a price cap than in its absence and since price cap regulation generates an additional source of cost efficiency via the value of X, cost efficiencies are likely to be higher under the price cap. However, as the proposal is for the interim control to have a one year duration, this effect is likely to be limited.

Avoidance of inefficient entry

C.70 Inefficient entry occurs where other communications providers' costs of building out terminating segments are greater than the costs for BT to provide the equivalent terminating segments. If the non-controlled price of terminating segments is higher than the capped price, then a certain amount of inefficient entry is expected under the non-controlled price. This is because the capped price will be set on a cost oriented basis and will not by definition be artificially high.

Increased competition in data services that use leased lines as an input

C.71 The introduction of a price control for PPCs should allow communications providers to compete more vigorously in the provision of data services. This should lead more quickly to lower prices for these services, a higher demand and a higher output, hence to welfare gains.

Increased choice

C.72 The availability of PPCs at regulated prices should enable communications providers to offer more choice to end-users in terms of location, quality of service requirements, and diversity of product options.

Innovation

C.73 Capped prices for PPCs are expected to lead to increased competition that in turn may induce increased innovation in the provision of leased line services. Other communications providers may develop a greater range of products to meet diverse consumer needs.

Sources of costs

Compliance costs

C.74 A price cap for PPCs is expected to generate increased compliance costs for BT and for Ofcom. Compared with the situation where BT is only obliged to supply PPCs, the introduction of a price cap will generate additional compliance costs, namely those linked to complying with a new price control regime. Ofcom too will bear increased compliance costs associated with developing and implementing a price control regime. However, Ofcom may also benefit from reduced licensing and competition complaints associated with the pricing of BT's leased lines.

Interconnection costs

C.75 Compared with the situation where PPCs are to be supplied without a price control, the introduction of a price cap for PPCs might lead to an even larger increase in points of connection between other communications providers' networks and BT.

Increase in average costs

C.76 The price capping of PPCs is likely to reinforce the re-distribution of the leased lines volume among other communications providers and BT, with BT's share being more greatly eroded in favour of other communications providers' shares than would be the case if there were no price control. As before, it is not clear how this reinforcement will modify the previous result where it was not known which of the two effects would dominate.

Conclusion of qualitative cost benefit analysis

C.77 The qualitative analysis above shows that in addition to the monetary benefits that have been quantified in the preceding section through analysing the effects of a reduction in prices, there is potential for significant other benefits. The qualitative analysis also highlighted that there are a number of sources of costs associated with the imposition of regulation. However, in this instance it appears to Ofcom unlikely that the costs will outweigh the benefits because the potential welfare gains from developments such as cost reductions are significant.

Overall conclusions of the cost benefit analysis

C.78 Overall, it is clear that there are potentially significant benefits of different sorts to be earned from regulating the PPC market, both in terms of requiring BT to offer a wholesale product and imposing an interim price control. These conclusions continue to hold even when more pessimistic assumptions relating to the quantitative analysis are adopted. However, under these assumptions, as would be expected, the potential benefits are reduced.

Annex D

Notification and SMP conditions

NOTIFICATION UNDER SECTIONS 48 (1) AND 79 (4) OF THE COMMUNICATIONS ACT 2003

The identification of markets, the making of market power determinations in relation to those markets and the setting of SMP services conditions in relation to BT and Kingston under section 45 of the Communications Act 2003

WHEREAS

(A) The Office of Communications ("Ofcom") issued a notification pursuant to section 48(2) and section 80 of the Communications Act 2003 (the "Act") setting out their proposals for the identification of markets, the making of market power determinations and the setting of SMP services conditions on 18th December 2003 (the 'First Notification');

(B) A copy of the First Notification was sent to the Secretary of State in accordance with section 50(1)(a) of the Act, and to the European Commission and to the regulatory authorities of every other member state in accordance with sections 50(3) and 81 of the Act;

(C) In the First Notification and the accompanying explanatory statement, Ofcom invited representations about any of the proposals set out therein by 6th February 2004;

(D) By virtue of section 80(6) of the Act, Ofcom may give effect to any proposals to identify a market for the purposes of making a market power determination or any proposals for making a market power determination set out in the First Notification, with or without modification, where-

(i) they have considered every representation about the proposals made to them within the period specified in the First Notification; and

(ii) they have had regard to every international obligation of the United Kingdom (if any) which has been notified to them for this purpose by the Secretary of State; but

(iii) Ofcom's power to give effect to such proposals is subject to sections 82 and 83 of the Act;

(E) By virtue of section 48(5) of the Act, Ofcom may give effect to any proposals to set SMP services conditions set out in the First Notification, with or without modification, where-

(i) they have considered every representation about the proposals made to them within the period specified in the First Notification; and

(ii) they have had regard to every international obligation of the United Kingdom (if any) which has been notified to them for this purpose by the Secretary of State;

(F) Ofcom received responses to the First Notification and have considered every such representation made to them in respect of the proposals set out in the First

Notification and the accompanying explanatory statement; and the Secretary of State has not notified Ofcom of any international obligation of the United Kingdom for this purpose;

(G) The European Commission has not made a notification for the purposes of Article 7(4) of the Framework Directive as referred to in section 82 of the Act and the proposals do not relate to a transnational market as referred to in section 83 of the Act;

THEREFORE

1. Ofcom in accordance with section 79 of the Act identify the following markets for the purposes of making a market power determination:

(a) the provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second within the United Kingdom but not including the Hull Area;

(b) the provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including one hundred and fifty five megabits per second within the United Kingdom but not including the Hull Area;

(c) the provision of alternative interface symmetric broadband origination at all bandwidths within the United Kingdom but not including the Hull Area;

(d) the provision of wholesale trunk segments at all bandwidths within the United Kingdom;

(e) the provision of traditional interface retail leased lines up to and including a bandwidth capacity of eight megabits per second within the United Kingdom but not including the Hull Area;

(f) the provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second within the Hull Area;

(g) the provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including one hundred and fifty five megabits per second within the Hull Area;

(h) the provision of alternative interface symmetric broadband origination at all bandwidths within the Hull Area; and

(i) the provision of traditional interface retail leased lines up to and including a bandwidth capacity of eight megabits per second within the Hull Area.

2. Ofcom in accordance with section 79 of the Act make the following market power determinations in relation to the markets referred to in paragraph 1 above-

(a) in relation to the markets set out in paragraph 1(a)-(e) above, BT; and

(b) in relation to the markets set out in paragraph 1(f)-(i) above, Kingston.

3. Ofcom in accordance with section 48(1) of the Act and section 79 of the Act hereby set pursuant to section 45 of the Act the SMP services conditions on the persons referred in paragraph 2 above as set out in Schedules 1 and 2 respectively to this Notification to take effect, unless otherwise is stated in those Schedules on the date of publication of this Notification.

4. The effect of and Ofcom's reasons for the decisions referred to in paragraphs 1 to 3 above are contained in the explanatory statement accompanying this Notification.

5. In making the decisions referred to in paragraphs 1 and 2 above, Ofcom have taken due account of all applicable guidelines and recommendations which have been issued or made by the European Commission in pursuance of a Community instrument, and relate to market identification or analysis, as required by section 79 of the Act.

6. In making the decisions referred to in paragraphs 1 to 3 above, Ofcom have considered and acted in accordance with the six Community requirements set out in section 4 of the Act and their duties in section 3 of the Act.

7. Ofcom consider that the SMP services conditions referred to in paragraph 3 above comply with the requirements of sections 45 to 50 and sections 78 to 92 of the Act, as appropriate and relevant to each such SMP services condition.

8. Copies of this Notification and the accompanying explanatory statement have been sent to the Secretary of State in accordance with section 50(1)(a) and section 81(1) of the Act and to the European Commission in accordance with sections 50(2) and 81(2) of the Act.

9. Save for the purposes of paragraph 1 of this Notification and except as otherwise defined in this Notification, words or expressions used shall have the same meaning as in the Act.

10. In this Notification:

(a) "**BT**" means British Telecommunications plc whose registered company number 1800000, and including any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 736 of the Companies Act 1985, as amended by the Companies Act 1989;

(b) "**Hull area**" means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;

(c) "**Kingston**" means Kingston Communications (Hull) plc whose registered company number 2150618, and including any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 736 of the Companies Act 1985, as amended by the Companies Act 1989; and

(d) "**United Kingdom**" has the meaning given to it in the Interpretation Act 1978.

Jim Niblett

A person authorised by Ofcom under paragraph 18 of the Schedule to the

Office of Communications Act 2002
24 June 2004

Schedule 1

The conditions imposed on British Telecommunications plc under the Communications Act 2003 as a result of the analysis of the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second in which British Telecommunications plc has been found to have significant market power

Part 1: Definitions and Interpretation of these conditions

1. These conditions shall apply to the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second within the United Kingdom but not including the Hull Area and shall also apply to Interconnection Services.

2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the markets referred to in paragraph 1 the following definitions shall apply:

   "Act" means the Communications Act 2003;

   "Access Charge Change Notice" has the meaning given to it in Condition G6;

   "Dominant Provider" means British Telecommunications plc, whose registered company number is 1800000 and any British Telecommunications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

   "the Hull Area" means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;

   "Interconnection Services" mean:
   In-Span Handover ("ISH");
   Customer-Sited Handover ("CSH");
   ISH extension circuits;
   Synchronous Transfer Mode-1/ISH handover; and
   Synchronous Transfer Mode-1/CSH handover.

   "Network Component" means to the extent they are used in the Market, or for Interconnection Services, the network components specified in a direction given by Ofcom from time to time for the purpose of these conditions;

   "Reference Offer" means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract;

   "The Market" means the market set out in paragraph 1 above;

   "Third Party" means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network;

"Transfer Charge" means the charge or price that is applied, or deemed to be applied, by the Dominant Provider to itself for the use or provision of an activity or group of activities. For the avoidance of doubt such activities or group of activities include, amongst other things, products and services provided from, to or within the Market and the use of Network Components in that Market; and

"Usage Factor" means the average usage by any Communications Provider (including the Dominant Provider itself) of each Network Component in using or providing a particular product or service or carrying out a particular activity.

3. Save for the purposes of paragraph 1, except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act.

4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.

5. Headings and titles shall be disregarded.

Part 2: The conditions

Condition G1 – Requirement to provide network access on reasonable request

G1.1 Where a Third Party reasonably requests in writing Network Access, the Dominant Provider shall provide that Network Access. The Dominant Provider shall also provide such Network Access as Ofcom may from time to time direct.

G1.2 The provision of Network Access in accordance with paragraph G1.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms, conditions and charges and on such terms, conditions and charges as Ofcom may from time to time direct.

G1.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition G2 – Requirement not to unduly discriminate

G2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with Network Access.

G2.2 In this Condition, the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

Condition G3 – Basis of charges

G3.1 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for Network Access covered by Condition G1 is reasonably derived from the costs of provision based on a forward looking long run incremental cost approach and allowing an appropriate mark up for the recovery of common costs including an appropriate return on capital employed.

G3.2 For the avoidance of any doubt, where the charge offered, payable or proposed for Network Access covered by Condition G1 is for a service which is subject to a charge control under Condition G4, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that such a charge satisfies the requirement of Condition G3.1.

G3.3 The Dominant Provider shall comply with any direction Ofcom may from time to time direct under this Condition.

Condition G4 – Charge control

G4.1 This Condition shall apply without prejudice to the generality of Condition G3.

G4.2 Paragraphs G4.3 and G4.4 of this Condition shall only apply if Ofcom gives notice to the Dominant Provider that it has breached the voluntary undertaking it gave to Ofcom concerning the pricing of the products which are the subject of this Condition.

G4.3 As from 25 June 2004, the Dominant Provider shall charge no more than the amounts set out in Annex A to this Schedule for each of the products set out in that Annex.

G4.4 The Dominant Provider shall apply the amounts set out in Annex A to this Schedule in a manner to be agreed from time to time with Ofcom.

G4.5 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition G5 – Requirement to publish a reference offer

G5.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

G5.2 Subject to paragraph G5.8 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of Network Access includes at least the following:

(a) a description of the Network Access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of Network Access);

(b) the locations of the points of Network Access;

(c) the technical standards for Network Access (including any usage restrictions and other security issues);

(d) the conditions for access to ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing);

(e) any ordering and provisioning procedures;

(f) relevant charges, terms of payment and billing procedures;

(g) details of interoperability tests;

(h) details of maintenance and quality as follows:

> (i) specific time scales for the acceptance or refusal of a request for supply and for completion, testing and hand-over or delivery of services and facilities, for provision of support services (such as fault handling and repair);
>
> (ii) service level commitments, namely the quality standards that each party must meet when performing its contractual obligations;
>
> (iii) the amount of compensation payable by one party to another for failure to perform contractual commitments;
>
> (iv) a definition and limitation of liability and indemnity; and
>
> (v) procedures in the event of alterations being proposed to the service offerings, for example, launch of new services, changes to existing services or change to prices;

(i) details of any relevant intellectual property rights;

(j) a dispute resolution procedure to be used between the parties;

(k) details of duration and renegotiation of agreements;

(l) provisions regarding confidentiality of non-public parts of the agreements;

(m) rules of allocation between the parties when supply is limited (for example, for the purpose of co-location or location of masts);

(n) the standard terms and conditions for the provision of Network Access;

(o) the amount applied to:

> (i) each Network Component used in providing Network Access with the relevant Usage Factors;
>
> (ii) the Transfer Charge for each Network Component or combination of Network Components described above;

reconciled in each case to the charge payable by a Communications Provider other than the Dominant Provider.

G5.3 To the extent that the Dominant Provider provides to itself Network Access that:

> (i) is the same, similar or equivalent to that provided to any other person; or
>
> (ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in a Reference Offer in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it publishes a Reference Offer in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs G5.2(a)-(o).

G5.4 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to any Network Access that it is providing as at the date that this Condition enters into force.

G5.5 The Dominant Provider shall update and publish the Reference Offer in relation to any amendments or in relation to any further Network Access provided after the date that this Condition enters into force.

G5.6 Publication referred to above shall be effected by:

(a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and

(b) sending a copy of the Reference Offer to Ofcom.

G5.7 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person’s written request (or such parts which have been requested).

G5.8 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

G5.9 The Dominant Provider shall provide Network Access at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly.

G5.10 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition G6 – Requirement to notify charges and terms and conditions

G6.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish charges, terms and conditions and act in the manner set out below.

G6.2 Save where otherwise provided in Condition G8, the Dominant Provider shall send to Ofcom and to every person with which it has entered into an Access Contract covered by Condition G1 a written notice of any amendment to the charges, terms and conditions on which it provides Network Access or in relation to any charges for new Network Access (an "Access Charge Change Notice") not less than 90 days before any such amendment comes into effect for existing Network Access, or not less than 28 days before any such amendment comes into effect for new Network Access.

G6.3 The Dominant Provider shall ensure that an Access Charge Change Notice includes:

(a) a description of the Network Access in question;

(b) a reference to the location in the Dominant Provider's current Reference Offer of the terms and conditions associated with the provision of that Network Access;

(c) the date on which or the period for which any amendments to charges, terms and conditions will take effect (the "effective date");

(d) the current and proposed new charge and the relevant Usage Factors applied to each Network Component comprised in that Network Access, reconciled in each case with the current or proposed new charge; and

(e) the information specified in sub paragraph (d) above with respect to that Network Access to which that paragraph applies.

G6.4 The Dominant Provider shall not apply any new charge, term and condition identified in an Access Charge Change Notice before the effective date.

G6.5 To the extent that the Dominant Provider provides to itself Network Access that:

(i) is the same, similar or equivalent to that provided to any other person; or

(ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in an Access Charge Change Notice in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it sends to Ofcom an Access Charge Change Notice in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs G6.3(a)-(e).

Condition G7 – Quality of Service

G7.1 The Dominant provider shall publish all such information for the purposes of securing transparency as to the quality of service in relation to Network Access provided by the Dominant Provider in such manner and form as Ofcom may from time to time direct.

G7.2 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition G8 – Requirement to notify technical information

G8.1 Save where Ofcom consents otherwise, where the Dominant Provider-

(a) proposes to provide Network Access covered by Condition G1, the terms and conditions for which comprise new-

(i) technical characteristics (including information on network configuration where necessary to make effective use of the Network Access);

(ii) locations of the points of Network Access; or

(iii) technical standards (including any usage restrictions and other security issues),

or

(b) proposes to amend an existing Access Contract covered by Condition G1 by modifying the terms and conditions listed in paragraph G8.1(a)(i) to (iii) on which the Network Access is provided,

the Dominant Provider shall publish a written notice (the "Notice") of the new or amended terms and conditions within a reasonable time period but not less than 90 days before either the Dominant Provider enters into an Access Contract to provide the new Network Access or the amended terms and conditions of the existing Access Contract come into effect.

G8.2 The Dominant Provider shall ensure that the Notice includes-

(a) a description of the Network Access in question;

(b) a reference to the location in the Dominant Provider's Reference Offer of the relevant terms and conditions;

(c) the date on which or the period for which the Dominant Provider may enter into an Access Contract to provide the new Network Access or any amendments to the relevant terms and conditions will take effect (the "effective date").

G8.3 The Dominant Provider shall not enter into an Access Contract containing the terms and conditions identified in the Notice or apply any new relevant terms and conditions identified in the Notice before the effective date.

G8.4 Publication referred to in paragraph G8.1 shall be effected by:

(a) placing a copy of the Notice on any relevant website operated or controlled by the Dominant Provider;

(b) sending a copy of the Notice to Ofcom; and

(c) sending a copy of the Notice to any person at that person's written request, and where the Notice identifies a modification to existing relevant terms and conditions, to every person with which the Dominant Provider has entered into an Access Contract covered by Condition G1. The provision of such a copy of the Notice may be subject to a reasonable charge.

G9 - Requests for new Network Access

G9.1 The Dominant Provider shall for the purposes of transparency publish reasonable guidelines, in relation to requests for new Network Access made to it. Such guidelines shall detail:

(a) the form in which such a request should be made;

(b) the information that the Dominant Provider requires in order to consider a request for new Network Access; and

(c) the time scales in which such requests will be handled by the Dominant Provider in accordance with this Condition.

G9.2 Such guidelines shall be published within two months of the date that this Condition enters into force following a consultation with Ofcom and Third Parties. The Dominant Provider shall keep the guidelines under review and consult with relevant Third Parties and Ofcom before making any amendments to the guidelines.

G9.3 The Dominant Provider shall, upon a reasonable request from a Third Party considering making a request for new Network Access, provide that Third Party with information so as to enable that Third Party to make a request for new Network Access. Such information shall be provided within a reasonable period.

G9.4 On receipt of a written request for new Network Access the Dominant Provider shall ensure that the requirements of this Condition are met. A modification of a request for new Network Access which has previously been submitted to the Dominant Provider, and rejected by the Dominant Provider, shall be considered as a new request.

G9.5 Within five working days of receipt of a request under paragraph G9.4, the Dominant Provider shall acknowledge that request in writing.

G9.6 Within fifteen working days of receipt of a request under paragraph G9.4 the Dominant Provider shall respond in writing to the requesting Third Party in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall confirm that the following will be prepared:

(i) the timetable for the provision of the new Network Access;
(ii) an initial offer of terms and conditions for the provision of the new Network Access; and
(iii) the timetable for the agreement of technical issues.

(b) the Dominant Provider shall confirm that a feasibility study is reasonably required in order to determine whether the request made is reasonable and the Dominant Provider shall set out its objective reasons for the need for such a study;

(c) the Dominant Provider shall confirm that the request is not sufficiently well formulated and, where it does so, the Dominant Provider shall detail all of the defects in the request which has been made; or

(d) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal.

G9.7 Where the Dominant Provider responds to a request under paragraph G9.4 in accordance with paragraph G9.6(a) it shall, within thirty five working days of receipt of a request under paragraph G9.4, respond further to the requesting Third Party in writing and:

(i) confirm the timetable for the provision of the new Network Access;
(ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and
(iii) confirm the timetable for the agreement of technical issues.

G9.8 Where the Dominant Provider responds to a request under paragraph G9.4 in accordance with paragraph G9.6(a) and determines, due to a genuine error of fact, that it reasonably needs to complete a feasibility study, it may, as soon as practicable and in any event, within thirty five working days of receipt of a request under paragraph G9.4, inform the requesting Third Party that a feasibility study is reasonably required and set out its objective reasons for such a study.

G9.9 Where G9.8 applies the Dominant Provider shall, within forty five working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required, respond further to the requesting Third party, in writing, in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall:

(i) confirm the timetable for the provision of the new Network Access;
(ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and
(iii) confirm the timetable for the agreement of technical issues; or

(b) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal. The Dominant Provider shall provide to Ofcom a copy of the feasibility study and shall provide to the requesting Third Party a non-confidential copy of the feasibility study.

G9.10 The time limit set out in paragraph G9.9 above shall be extended up to seventy working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required pursuant to paragraph G9.8, if:

- circumstances have arisen which, despite the Dominant Provider using its best endeavours, prevent it from completing the feasibility study within forty five working days of the date that the requesting Third Party was informed of the need for a feasibility study pursuant to paragraph G9.8; or

- the Third Party and the Dominant Provider agree to extend the time limit up to seventy working days.

G9.11 The time limit set out in paragraph G9.9 above shall be extended beyond seventy working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required pursuant to paragraph G9.8, if:

- Ofcom agrees; or

- the Third Party and the Dominant Provider agree to extend the time limit beyond seventy working days.

G9.12 Where the Dominant Provider responds to a request under paragraph G9.4 in accordance with paragraph G9.6(b) the Dominant Provider shall, within sixty working days of receipt of a request under paragraph G9.4, respond further to the requesting Third Party, in writing, in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall:

(i) confirm the timetable for the provision of the new Network Access;
(ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and
(iii) confirm the timetable for the agreement of technical issues; or

(b) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal. The Dominant Provider shall provide to Ofcom a copy of the feasibility study and shall provide to the requesting Third Party a non-confidential copy of the feasibility study.

G9.13 The time limit set out in paragraph G9.12 above shall be extended up to eighty five working days of receipt of a request under paragraph G9.4, if:

- circumstances have arisen which, despite the Dominant Provider using its best endeavours, prevent it from completing the feasibility study within sixty working days of receipt of a request under paragraph G9.4; or

- the Third Party and the Dominant Provider agree to extend the time limit up to eighty five working days.

G9.14 The time limit set out in paragraph G9.12 above shall be extended beyond eighty five working days of receipt of a request under paragraph G9.4, if:

- Ofcom agrees; or

- the Third Party and the Dominant Provider agree to extend the time limit beyond eighty five working days.

G9.15 Within two months of the date that this Condition enters info force the Dominant Provider shall provide Ofcom with a description of the processes it has put in place to ensure compliance with this Condition. It shall keep those processes under review to ensure that they remain adequate for that purpose.

G9.16 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Annex A

POC equipment charges – 25 June 2004 prices

	Connection charge (£)	**Rental charge (£ per annum)**
Customer Sited Handover (CSH)		
CSH Configuration SMA-16		
SMA-16 ADM with no trib interfaces (single fibre working) - existing site	96,126.12	1,728.68
SMA-16 ADM with no trib interfaces (dual fibre working 1300nm) - existing site	96,251.43	1,675.51
SMA-16 ADM with no trib interfaces (dual fibre working 1550nm) - existing site	101,945.33	1,781.84
Additional charge for new site	2,319.14	-
Standby batteries if required	522.12	9.49
STM-1 electrical trib interface (2 ports)	2,997.89	56.01
STM-1 optical (1300nm) trib interface (1 port)	3,877.89	72.15
STM-1 electrical trib card (2 ports), required for 1+1 card protection	1,498.94	27.53
STM-1 optical (1300nm) trib card (1 port), required for MSP protection	880.00	16.14
STM-4 optical (1300nm) trib interface (1 port)	9,880.31	183.21
STM-4 optical (1300nm) trib card (1 port), required for MSP protection	3,885.48	72.15
CSH Configuration SMA-4		
SMA-4 ADM with no trib interfaces (single fibre working) - existing site	62,481.03	1,104.04
SMA-4 ADM with no trib interfaces (dual fibre working 1300nm) - existing site	60,871.96	1,019.55
SMA-4 ADM with no trib interfaces (dual fibre working 1550nm) - existing site	70,033.66	1,189.47
Additional charge for new site	2,319.14	-
Standby batteries if required	522.12	9.49
STM-1 electrical trib interface (1 port)	2115	15.19
STM-1 optical (1300nm) trib interface (1 port)	2,288.76	42.72
STM-1 electrical trib card (1 port), required for 1+1 card protection	704.38	13.29
STM-1 optical (1300nm) trib card (1 port), required for MSP protection	880.00	16.14
STM-4 optical (1300nm) trib interface (1 port)	9,519.58	176.57
STM-4 optical (1300nm) trib card (1 port), required for MSP		

protection	3,885.48	72.15
CSH Configuration MSH51		
MSH51 ADM with no trib interfaces (single fibre working) - existing site	54,225.91	951.20
MSH51 ADM with no trib interfaces (dual fibre working 1300nm) - existing site	56,504.23	937.91
MSH51 ADM with no trib interfaces (dual fibre working 1550nm) - existing site	57,891.16	963.54
Additional charge for new site	2,319.14	
Per km from serving exchange to MSH node - single fibre working	2,441.60	0.95
Per km from serving exchange to MSH node - dual fibre working	4,883.20	2.85
Standby batteries if required	522.12	9.49
STM-1 electrical trib interface (4 ports)	3,447.86	63.60
STM-1 optical (1300nm) trib interface (2 ports)	3,835.17	71.20
STM-1 electrical trib card (4 ports), required for 1+1 card protection	1,149.60	20.88
STM-1 optical (1300nm) trib card (2 ports), required for MSP protection	1,536.92	28.48
STM-4 optical (1300nm) trib interface (1 port)	3,529.50	65.50
STM-4 optical (1300nm) Trib card (1 port), required for MSP protection	1,231.24	22.78
STM1 - legacy equipment	not available	445.22
16x2 - legacy equipment	not available	571.48
2M Bearer Access – required for access to DPCN	1,854.93	448.07
plus rental per km from POH serving exchange to DPCN node	-	49.36
In Span Handover (ISH)		
ISH Configuration STM-16		
SMA –16 ADM with single STM-16 handover (1300nm)	69,566.60	1,292.00
Optional STM-16 1550nm handover	2,846.95	53.16
ISH Configuration STM-4		
SMA-4 ADM with single STM-4 handover (1300nm)	32,655.92	606.60
Optional STM-4 1550nm handover	4,581.32	85.44
ISH Configuration STM-1		
SMA-4 ADM with single STM-1 handover (1300nm)	19,321.10	358.84
Additional cost for STM-1 1550nm handover	2,075.17	38.92

Additional STM-1 handovers (1300nm) – max 3	2,906.76	54.11
Additional STM-1 handovers (1550nm) – max 3	5,244.88	97.78
ISH Configuration MSH51		
MSH51 ADM with single STM-16 handover (1300nm)	29,615.31	549.64
Optional STM-16 1550nm handover	692.99	13.29
MSH51 ISH is provided at nearest MSH node to customer		
2M Bearer Access – required for access to DPCN	1,854.93	448.07
plus rental per km from POH serving exchange to DPCN node	-	49.36

Connection of a new Partial Private Circuit – 25 June 2004 prices

Provision charge per circuit	**Single charge (£)**
64 kbit/s – 960 kbit/s	440.59
1 Mbit/s (from 23/10/2001)	1521.04
2 Mbit/s	1521.04

Third Party Equipment charges – 25 June 2004 prices

	Connection charges (£)
KiloStream NTU 64k – 256k on existing copper or bearer	503.52
KiloStream NTU 64k – 256k on new copper	821.88
KiloStream NTU 320k – 960k on existing (2M) bearer	894.00
1Mb/s circuit on existing copper (from 23/10/2001)	1071.76
1Mb/s circuit on new copper (from 23/10/2001)	1488.50
2Mbit/s circuit on HDSL on existing copper	1405.91
2Mbit/s circuit on HDSL on new copper	2288.76
First 2Mbit/s circuit on 4x2 at existing site	4942.06
First 2Mbit/s circuit on 16x2 at existing site	8356.69
Additional Charge for 4x2 and 16x2 new site	2319.14
Subsequent 2Mbit/s circuit on existing PPC 4x2 or 16x2	No infrastructure charge
Third party customer sited SMA-1 ADM	
SMA-1 ADM with no trib interfaces (single fibre working) - existing site	20340.65
SMA-1 ADM with no trib interfaces (dual fibre working 1300nm) - existing site	21236.79
SMA-1 ADM with no trib interfaces (dual fibre working 1550nm) - existing site	25388.08
Additional charge for new site	2319.14
Standby batteries if required	522.12
2Mbit/s trib card (16 ports)	2310.60
Third party customer sited SMA-4 ADM	
SMA-4 ADM with no trib interfaces (single fibre working) - existing site	56415.00
SMA-4 ADM with no trib interfaces (dual fibre working 1300nm) - existing site	54804.99
SMA-4 ADM with no trib interfaces (dual fibre working 1550nm) - existing site	63967.63
Additional charge for new site	2319.14
Standby batteries if required	522.12
2Mbit/s trib cards (32 ports)	4146.54
Third party customer sited SMA-16 ADM	
SMA-16 with no trib interfaces (single fibre working) - existing site	91161.28
SMA-16 ADM with no trib interfaces (dual fibre working 1300nm) - existing site	91285.64
SMA-16 ADM with no trib interfaces (dual fibre working 1550nm) - existing site	96979.54
Additional charge for new site	2319.14
Standby batteries if required	522.12
2Mbit/s trib cards (32 ports)	4146.54

Rental and maintenance charges – 25 June 2004 prices

	Standard maintenance				Enhanced maintenance	
	local end fixed charge per annum (£)	main link fixed charge per annum (£)	main link per km charge, per annum up to SDH Tier 1 break point (£)	charge beyond SDH Tier 1 break point (per km per annum)	Fixed charge per annum (£)	Per km charge per annum, (£)
64k	253.77	55.27	1.53	4.40	35.66	0.01
128k	253.77	99.64	2.76	11.74	36.41	0.02
192k	253.77	148.68	4.13	17.61	37.34	0.02
256k	253.77	198.50	5.51	23.48	38.28	0.02
320k	253.77	248.32	6.90	29.36	39.21	0.03
384k	253.77	333.94	9.20	35.23	41.30	0.05
448k	253.77	389.21	10.73	41.10	42.42	0.05
512k	253.77	444.48	12.27	46.97	43.55	0.05
576k	253.77	500.53	13.80	52.84	44.68	0.06
640k	253.77	555.80	15.33	58.71	45.81	0.07
704k	253.77	611.84	16.87	64.58	46.94	0.08
768k	253.77	667.11	18.40	70.45	48.07	0.09
832k	253.77	723.16	19.94	76.33	49.20	0.09
896k	253.77	778.43	21.47	82.20	50.32	0.10
960k	253.77	833.69	23.00	88.06	51.45	0.11
1Mb	617.29	367.42	40.40	88.02	118.18	1.33
2Mb	617.29	367.42	40.40	88.02	118.18	1.33

The conditions imposed on British Telecommunications plc under the Communications Act 2003 as a result of the analysis of the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including one hundred and fifty five megabits per second in which British Telecommunications plc has been found to have significant market power

Part 1: Definitions and Interpretation of these conditions

1. These conditions shall apply to the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including one hundred and fifty five megabits per second, within the United Kingdom but not including the Hull Area and shall also apply to Interconnection Services.

2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the markets referred to in paragraph 1 the following definitions shall apply:

“Act” means the Communications Act 2003;

“Access Charge Change Notice” has the meaning given to it in Condition GG 6;

“Dominant Provider” means British Telecommunications plc, whose registered company number is 1800000 and any British Telecommunications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

“the Hull Area” means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;

“Interconnection Services” mean:
In-Span Handover (“ISH”);
Customer-Sited Handover (“CSH”);
ISH extension circuits;
Synchronous Transfer Mode-1/ISH handover; and
Synchronous Transfer Mode-1/CSH handover.

"Network Component” means to the extent they are used in the Market, or for Interconnection Services, the network components specified in a Direction given by Ofcom from time to time for the purpose of these conditions;

“Reference Offer” means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract;

"The Market" means the market set out in paragraph 1 above;

“Third Party” means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network;

"Transfer Charge" means the charge or price that is applied, or deemed to be applied, by the Dominant Provider to itself for the use or provision of an activity or group of activities. For the avoidance of doubt such activities or group of activities include, amongst other things, products and services provided from, to or within the Market and the use of Network Components in that Market; and

"Usage Factor" means the average usage by any Communications Provider (including the Dominant Provider itself) of each Network Component in using or providing a particular product or service or carrying out a particular activity.

3. Save for the purposes of paragraph 1, except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act.

4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.

5. Headings and titles shall be disregarded.

Part 2: The conditions

Condition GG1 – Requirement to provide network access on reasonable request

GG1.1 Where a Third Party reasonably requests in writing Network Access, the Dominant Provider shall provide that Network Access. The Dominant Provider shall also provide such Network Access as Ofcom may from time to time direct.

GG1.2 The provision of Network Access in accordance with paragraph GG1.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms, conditions and charges and on such terms, conditions and charges as Ofcom may from time to time direct.

GG1.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition GG2 – Requirement not to unduly discriminate

GG2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with Network Access.

GG2.2 In this Condition, the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

Condition GG3 – Basis of charges

GG3.1 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for Network Access covered by Condition GG1 is reasonably derived from the costs of provision based on a forward looking long run incremental cost approach and allowing an appropriate mark up for the recovery of common costs including an appropriate return on capital employed.

GG3.2 For the avoidance of any doubt, where the charge offered, payable or proposed for Network Access covered by Condition GG1 is for a service which is subject to a charge control under Condition GG4, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that such a charge satisfies the requirement of Condition GG3.1.

GG3.3 The Dominant Provider shall comply with any direction Ofcom may from time to time direct under this Condition.

Condition GG4 – Charge control

GG4.1 This Condition shall apply without prejudice to the generality of Condition GG3.

GG4.2 Paragraphs GG4.3 and GG4.4 of this Condition shall only apply if Ofcom gives notice to the Dominant Provider that it has breached the voluntary undertaking it gave to Ofcom concerning the pricing of the products which are the subject of this Condition.

GG4.3 As from 25 June 2004, the Dominant Provider shall charge no more than the amounts set out in Annex A to this Schedule for each of the products set out in that Annex.

GG4.4 The Dominant Provider shall apply the amounts set out in Annex A to this Schedule in a manner to be agreed from time to time with Ofcom.

GG4.5 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition GG5 – Requirement to publish a reference offer

GG5.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

GG5.2 Subject to paragraph GG5.8 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of Network Access includes at least the following:

(a) a description of the Network Access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of Network Access);

(b) the locations of the points of Network Access;

(c) the technical standards for Network Access (including any usage restrictions and other security issues);

(d) the conditions for access to ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing);

(e) any ordering and provisioning procedures;

(f) relevant charges, terms of payment and billing procedures;

(g) details of interoperability tests;

(h) details of maintenance and quality as follows:

> (i) specific time scales for the acceptance or refusal of a request for supply and for completion, testing and hand-over or delivery of services and facilities, for provision of support services (such as fault handling and repair);
>
> (ii) service level commitments, namely the quality standards that each party must meet when performing its contractual obligations;
>
> (iii) the amount of compensation payable by one party to another for failure to perform contractual commitments;
>
> (iv) a definition and limitation of liability and indemnity; and
>
> (v) procedures in the event of alterations being proposed to the service offerings, for example, launch of new services, changes to existing services or change to prices;

(i) details of any relevant intellectual property rights;

(j) a dispute resolution procedure to be used between the parties;

(k) details of duration and renegotiation of agreements;

(l) provisions regarding confidentiality of non-public parts of the agreements;

(m) rules of allocation between the parties when supply is limited (for example, for the purpose of co-location or location of masts);

(n) the standard terms and conditions for the provision of Network Access;

(o) the amount applied to:

> (i) each Network Component used in providing Network Access with the relevant Usage Factors;
>
> (ii) the Transfer Charge for each Network Component or combination of Network Components described above;

reconciled in each case to the charge payable by a Communications Provider other than the Dominant Provider.

GG5.3 To the extent that the Dominant Provider provides to itself Network Access that:

(i) is the same, similar or equivalent to that provided to any other person; or

(ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in a Reference Offer in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it publishes a Reference Offer in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs GG5.2(a)-(o).

GG5.4 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to any Network Access that it is providing as at the date that this Condition enters into force.

GG5.5 The Dominant Provider shall update and publish the Reference Offer in relation to any amendments or in relation to any further Network Access provided after the date that this Condition enters into force.

GG5.6 Publication referred to above shall be effected by:

(a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and

(b) sending a copy of the Reference Offer to Ofcom.

GG5.7 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person’s written request (or such parts which have been requested).

GG5.8 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

GG5.9 The Dominant Provider shall provide Network Access at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly.

GG5.10 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition GG6 – Requirement to notify charges and terms and conditions

GG6.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish charges, terms and conditions and act in the manner set out below.

GG6.2 Save where otherwise provided in Condition GG8, the Dominant Provider shall send to Ofcom and to every person with which it has entered into an Access Contract covered by Condition GG1, a written notice of any amendment to the charges, terms and conditions on which it provides Network Access or in relation to any charges for new Network Access (an "Access Charge Change Notice") not less than 90 days before any such amendment comes into effect for existing Network Access, or not less than 28 days before any such amendment comes into effect for new Network Access.

GG6.3 The Dominant Provider shall ensure that an Access Charge Change Notice includes:

(a) a description of the Network Access in question;

(b) a reference to the location in the Dominant Provider's current Reference Offer of the terms and conditions associated with the provision of that Network Access;

(c) the date on which or the period for which any amendments to charges, terms and conditions will take effect (the "effective date");

(d) the current and proposed new charge and the relevant Usage Factors applied to each Network Component comprised in that Network Access, reconciled in each case with the current or proposed new charge; and

(e) the information specified in sub paragraph (d) above with respect to that Network Access to which that paragraph applies.

GG6.4 The Dominant Provider shall not apply any new charge, term and condition identified in an Access Charge Change Notice before the effective date.

GG6.5 To the extent that the Dominant Provider provides to itself Network Access that:

(i) is the same, similar or equivalent to that provided to any other person; or

(ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in an Access Charge Change Notice in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it sends to Ofcom an Access Charge Change Notice in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs GG6.3(a)-(e).

Condition GG7 – Quality of Service

GG7.1 The Dominant provider shall publish all such information for the purposes of securing transparency as to the quality of service in relation to Network Access provided by the Dominant Provider in such manner and form as Ofcom may from time to time direct.

GG7.2 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition GG8 – Requirement to notify technical information

GG8.1 Save where Ofcom consents otherwise, where the Dominant Provider-

(a) proposes to provide Network Access covered by Condition GG1, the terms and conditions for which comprise new-

(i) technical characteristics (including information on network configuration where necessary to make effective use of the Network Access);

(ii) locations of the points of Network Access; or

(iii) technical standards (including any usage restrictions and other security issues),

or

(b) proposes to amend an existing Access Contract covered by Condition GG1 by modifying the terms and conditions listed in paragraph GG8.1(a)(i) to (iii) on which the Network Access is provided,

the Dominant Provider shall publish a written notice (the “Notice”) of the new or amended terms and conditions within a reasonable time period but not less than 90 days before either the Dominant Provider enters into an Access Contract to provide the new Network Access or the amended terms and conditions of the existing Access Contract come into effect.

GG8.2 The Dominant Provider shall ensure that the Notice includes-

(a) a description of the Network Access in question;

(b) a reference to the location in the Dominant Provider’s Reference Offer of the relevant terms and conditions;

(c) the date on which or the period for which the Dominant Provider may enter into an Access Contract to provide the new Network Access or any amendments to the relevant terms and conditions will take effect (the “effective date”).

GG8.3 The Dominant Provider shall not enter into an Access Contract containing the terms and conditions identified in the Notice or apply any new relevant terms and conditions identified in the Notice before the effective date.

GG8.4 Publication referred to in paragraph GG8.1 shall be effected by:

(a) placing a copy of the Notice on any relevant website operated or controlled by the Dominant Provider;

(b) sending a copy of the Notice to Ofcom; and

(c) sending a copy of the Notice to any person at that person’s written request, and where the Notice identifies a modification to existing relevant terms and conditions, to every person with which the Dominant Provider has entered into an Access Contract covered by Condition GG1. The provision of such a copy of the Notice may be subject to a reasonable charge.

GG9 - Requests for new Network Access

GG9.1 The Dominant Provider shall for the purposes of transparency publish reasonable guidelines, in relation to requests for new Network Access made to it. Such guidelines shall detail:

(a) the form in which such a request should be made;

(b) the information that the Dominant Provider requires in order to consider a request for new Network Access; and

(c) the time scales in which such requests will be handled by the Dominant Provider in accordance with this Condition.

GG9.2 Such guidelines shall be published within two months of the date that this Condition enters into force following a consultation with Ofcom and Third Parties. The Dominant Provider shall keep the guidelines under review and consult with relevant Third Parties and Ofcom before making any amendments to the guidelines.

GG9.3 The Dominant Provider shall, upon a reasonable request from a Third Party considering making a request for new Network Access, provide that Third Party with information so as to enable that Third Party to make a request for new Network Access. Such information shall be provided within a reasonable period.

GG9.4 On receipt of a written request for new Network Access the Dominant Provider shall ensure that the requirements of this Condition are met. A modification of a request for new Network Access which has previously been submitted to the Dominant Provider, and rejected by the Dominant Provider, shall be considered as a new request.

GG9.5 Within five working days of receipt of a request under paragraph GG9.4, the Dominant Provider shall acknowledge that request in writing.

GG9.6 Within fifteen working days of receipt of a request under paragraph GG9.4 the Dominant Provider shall respond in writing to the requesting Third Party in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall confirm that the following will be prepared:

(i) the timetable for the provision of the new Network Access;
(ii) an initial offer of terms and conditions for the provision of the new Network Access; and
(iii) the timetable for the agreement of technical issues.

(b) the Dominant Provider shall confirm that a feasibility study is reasonably required in order to determine whether the request made is reasonable and the Dominant Provider shall set out its objective reasons for the need for such a study;

(c) the Dominant Provider shall confirm that the request is not sufficiently well formulated and, where it does so, the Dominant Provider shall detail all of the defects in the request which has been made; or

(d) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal.

GG9.7 Where the Dominant Provider responds to a request under paragraph GG9.4 in accordance with paragraph GG9.6(a) it shall, within thirty five working days of receipt of a request under paragraph GG9.4, respond further to the requesting Third Party in writing and:

(i) confirm the timetable for the provision of the new Network Access;
(ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and
(iii) confirm the timetable for the agreement of technical issues.

GG9.8 Where the Dominant Provider responds to a request under paragraph GG9.4 in accordance with paragraph GG9.6(a) and determines, due to a genuine error of fact, that it reasonably needs to complete a feasibility study, it may, as soon as practicable and in any event, within thirty five working days of receipt of a request under paragraph GG9.4, inform the requesting Third Party that a feasibility study is reasonably required and set out its objective reasons for such a study.

GG9.9 Where GG9.8 applies the Dominant Provider shall, within forty five working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required, respond further to the requesting Third party, in writing, in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall:

(i) confirm the timetable for the provision of the new Network Access;
(ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and
(iii) confirm the timetable for the agreement of technical issues; or

(b) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal. The Dominant Provider shall provide to Ofcom a copy of the feasibility study and shall provide to the requesting Third Party a non-confidential copy of the feasibility study.

GG9.10 The time limit set out in paragraph GG9.9 above shall be extended up to seventy working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required pursuant to paragraph GG9.8, if:

- circumstances have arisen which, despite the Dominant Provider using its best endeavours, prevent it from completing the feasibility study within forty five working days of the date that the requesting Third Party was informed of the need for a feasibility study pursuant to paragraph GG9.8; or

- the Third Party and the Dominant Provider agree to extend the time limit up to seventy working days.

GG9.11 The time limit set out in paragraph GG9.9 above shall be extended beyond seventy working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required pursuant to paragraph GG9.8, if:

- Ofcom agrees; or

- the Third Party and the Dominant Provider agree to extend the time limit beyond seventy working days.

GG9.12 Where the Dominant Provider responds to a request under paragraph GG9.4 in accordance with paragraph GG9.6(b) the Dominant Provider shall, within sixty working days of receipt of a request under paragraph GG9.4, respond further to the requesting Third Party, in writing, in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall:

(i) confirm the timetable for the provision of the new Network Access;
(ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and
(iii) confirm the timetable for the agreement of technical issues; or

(b) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal. The Dominant Provider shall provide to Ofcom a copy of the feasibility study and shall provide to the requesting Third Party a non-confidential copy of the feasibility study.

GG9.13 The time limit set out in paragraph GG9.12 above shall be extended up to eighty five working days of receipt of a request under paragraph GG9.4, if:

- circumstances have arisen which, despite the Dominant Provider using its best endeavours, prevent it from completing the feasibility study within sixty working days of receipt of a request under paragraph GG9.4; or

- the Third Party and the Dominant Provider agree to extend the time limit up to eighty five working days.

GG9.14 The time limit set out in paragraph GG9.12 above shall be extended beyond eighty five working days of receipt of a request under paragraph GG9.4, if:

- Ofcom agrees; or

- the Third Party and the Dominant Provider agree to extend the time limit beyond eighty five working days.

GG9.15 Within two months of the date that this Condition enters info force the Dominant Provider shall provide Ofcom with a description of the processes it has put in place to ensure compliance with this Condition. It shall keep those processes under review to ensure that they remain adequate for that purpose.

GG9.16 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Annex A

POC equipment charges – 25 June 2004 prices

	Connection charge (£)	Rental charge (£ per annum)
Customer Sited Handover (CSH)		
CSH Configuration SMA-16		
SMA-16 ADM with no trib interfaces (single fibre working) - existing site	96,126.12	1,728.68
SMA-16 ADM with no trib interfaces (dual fibre working 1300nm) - existing site	96,251.43	1,675.51
SMA-16 ADM with no trib interfaces (dual fibre working 1550nm) - existing site	101,945.33	1,781.84
Additional charge for new site	2,319.14	-
Standby batteries if required	522.12	9.49
STM-1 electrical trib interface (2 ports)	2,997.89	56.01
STM-1 optical (1300nm) trib interface (1 port)	3,877.89	72.15
STM-1 electrical trib card (2 ports), required for 1+1 card protection	1,498.94	27.53
STM-1 optical (1300nm) trib card (1 port), required for MSP protection	880.00	16.14
STM-4 optical (1300nm) trib interface (1 port)	9,880.31	183.21
STM-4 optical (1300nm) trib card (1 port), required for MSP protection	3,885.48	72.15
CSH Configuration SMA-4		
SMA-4 ADM with no trib interfaces (single fibre working) - existing site	62,481.03	1,104.04
SMA-4 ADM with no trib interfaces (dual fibre working 1300nm) - existing site	60,871.96	1,019.55
SMA-4 ADM with no trib interfaces (dual fibre working 1550nm) - existing site	70,033.66	1,189.47
Additional charge for new site	2,319.14	-
Standby batteries if required	522.12	9.49
STM-1 electrical trib interface (1 port)	2115	15.19
STM-1 optical (1300nm) trib interface (1 port)	2,288.76	42.72
STM-1 electrical trib card (1 port), required for 1+1 card protection	704.38	13.29
STM-1 optical (1300nm) trib card (1 port), required for MSP protection	880.00	16.14
STM-4 optical (1300nm) trib interface (1 port)	9,519.58	176.57
STM-4 optical (1300nm) trib card (1 port), required for MSP		

protection	3,885.48	72.15
CSH Configuration MSH51		
MSH51 ADM with no trib interfaces (single fibre working) - existing site	54,225.91	951.20
MSH51 ADM with no trib interfaces (dual fibre working 1300nm) - existing site	56,504.23	937.91
MSH51 ADM with no trib interfaces (dual fibre working 1550nm) - existing site	57,891.16	963.54
Additional charge for new site	2,319.14	
Per km from serving exchange to MSH node - single fibre working	2,441.60	0.95
Per km from serving exchange to MSH node - dual fibre working	4,883.20	2.85
Standby batteries if required	522.12	9.49
STM-1 electrical trib interface (4 ports)	3,447.86	63.60
STM-1 optical (1300nm) trib interface (2 ports)	3,835.17	71.20
STM-1 electrical trib card (4 ports), required for 1+1 card protection	1,149.60	20.88
STM-1 optical (1300nm) trib card (2 ports), required for MSP protection	1,536.92	28.48
STM-4 optical (1300nm) trib interface (1 port)	3,529.50	65.50
STM-4 optical (1300nm) Trib card (1 port), required for MSP protection	1,231.24	22.78
STM1 - legacy equipment	not available	445.22
16x2 - legacy equipment	not available	571.48
In Span Handover (ISH)		
ISH Configuration STM-16		
SMA –16 ADM with single STM-16 handover (1300nm)	69,566.60	1,292.00
Optional STM-16 1550nm handover	2,846.95	53.16
ISH Configuration STM-4		
SMA-4 ADM with single STM-4 handover (1300nm)	32,655.92	606.60
Optional STM-4 1550nm handover	4,581.32	85.44
ISH Configuration STM-1		
SMA-4 ADM with single STM-1 handover (1300nm)	19,321.10	358.84
Additional cost for STM-1 1550nm handover	2,075.17	38.92
Additional STM-1 handovers (1300nm) – max 3	2,906.76	54.11
Additional STM-1 handovers (1550nm) – max 3	5,244.88	97.78

ISH Configuration MSH51		
MSH51 ADM with single STM-16 handover (1300nm)	29,615.31	549.64
Optional STM-16 1550nm handover	692.99	13.29
MSH51 ISH is provided at nearest MSH node to customer		

Connection of a new Partial Private Circuit – 25 June 2004 prices

Provision charge per circuit	Single charge (£)
34 Mbit/s – 45 Mbit/s	1597.33
140 Mbit/s and above	1672.84

Third Party Equipment charges – 25 June 2004 prices

	Connection charges (£)
Third party customer sited SMA-1 ADM	
SMA-1 ADM with no trib interfaces (single fibre working) - existing site	20340.65
SMA-1 ADM with no trib interfaces (dual fibre working 1300nm) - existing site	21236.79
SMA-1 ADM with no trib interfaces (dual fibre working 1550nm) - existing site	25388.08
Additional charge for new site	2319.14
Standby batteries if required	522.12
34Mbit/s trib card (3 ports)	1191.37
45Mbit/s trib card (3 ports)	1191.37
STM-1 electrical trib card (1 port)	704.38
STM-1 optical (1300nm) trib card (1 port)	880.00
140Mbit/s electrical trib card (1 port)	950.25
Third party customer sited SMA-4 ADM	
SMA-4 ADM with no trib interfaces (single fibre working) - existing site	56415.00
SMA-4 ADM with no trib interfaces (dual fibre working 1300nm) - existing site	54804.99
SMA-4 ADM with no trib interfaces (dual fibre working 1550nm) - existing site	63967.63
Additional charge for new site	2319.14
Standby batteries if required	522.12
34Mbit/s trib card (3 ports)	1191.37
45Mbit/s trib card (3 ports)	1191.37
STM-1 electrical trib card (1 port)	704.38
STM-1 optical (1300nm) trib card (1 port)	880.00
140Mbit/s electrical trib card (1 port)	950.25
Third party customer sited SMA-16 ADM	
SMA-16 with no trib interfaces (single fibre working) - existing site	91161.28
SMA-16 ADM with no trib interfaces (dual fibre working 1300nm) - existing site	91285.64
SMA-16 ADM with no trib interfaces (dual fibre working 1550nm) - existing site	96979.54
Additional charge for new site	2319.14
Standby batteries if required	522.12
2Mbit/s trib cards (32 ports)	4146.54
34Mbit/s trib card (3 ports)	1191.37
45Mbit/s trib card (3 ports)	1191.37
STM-1 electrical trib card (2 ports)	1498.94
STM-1 optical (1300nm) trib card (1 port)	880.00
140Mbit/s electrical trib card (1 port)	950.25
Third party customer sited MSH-51C ADM	
MSH51 with no trib interfaces (single fibre working) - existing site	61285.86
MSH51 with no trib interfaces (dual fibre working 1300nm) - existing site	59675.85
MSH51 with no trib interfaces (dual fibre working 1550nm) - existing site	68838.49

Additional charge for new site	2319.14
Per km from serving exchange to MSH node - single fibre working	2441.60
Per km from serving exchange to MSH node - dual fibre working	4883.20
Standby batteries if required	522.12
STM-1 electrical trib card (4 ports)	1149.60
STM-1 optical (1300nm) trib card (2 ports)	880.00
140Mbit/s electrical trib card (1 port)	1149.60

Rental and maintenance charges – 25 June 2004 prices

	Standard maintenance				Enhanced maintenance	
	local end fixed charge per annum (£)	main link fixed charge per annum (£)	main link per km charge, per annum up to SDH Tier 1 break point (£)	charge beyond SDH Tier 1 break point (per km per annum)	Fixed charge per annum (£)	Per km charge per annum, (£)
34/45Mb	3,173.64	2,849.82	447.40	478.62	195.04	2.20
140/155Mb	14,267.77	9,632.24	1,126.05	1,013.99	351.09	5.01

The conditions imposed on British Telecommunications plc under the Communications Act 2003 as a result of the analysis of the market for the provision of wholesale trunk segments at all bandwidths in which British Telecommunications plc has been found to have significant market power

Part 1: Definitions and Interpretation of these conditions

1. These conditions shall apply to the market for the provision of wholesale trunk segments at all bandwidths within the United Kingdom and shall also apply to Interconnection Services.

2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the markets referred to in paragraph 1 the following definitions shall apply:

   “Act” means the Communications Act 2003;

   “Access Charge Change Notice” has the meaning given to it in Condition H5;

   “Dominant Provider” means British Telecommunications plc, whose registered company number is 1800000 and any British Telecommunications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

   “Interconnection Services” mean:
   In-Span Handover (“ISH”);
   Customer-Sited Handover (“CSH”);
   ISH extension circuits;
   Synchronous Transfer Mode-1/ISH handover; and
   Synchronous Transfer Mode-1/CSH handover.

   "Network Component” means to the extent they are used in the Market, or for Interconnection Services, the network components specified in a Direction given by Ofcom from time to time for the purpose of these conditions;

   “Reference Offer” means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract;

   "The Market" means the market set out in paragraph 1 above;

   “Third Party” means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network;

   "Transfer Charge” means the charge or price that is applied, or deemed to be applied, by the Dominant Provider to itself for the use or provision of an activity or group of activities. For the avoidance of doubt such activities or group of activities include, amongst other things, products and services provided from, to or within the Market and the use of Network Components in that Market; and

"Usage Factor" means the average usage by any Communications Provider (including the Dominant Provider itself) of each Network Component in using or providing a particular product or service or carrying out a particular activity.

3. Save for the purposes of paragraph 1, except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act.

4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.

5. Headings and titles shall be disregarded.

Part 2: The conditions

Condition H1 – Requirement to provide network access on reasonable request

H1.1 Where a Third Party reasonably requests in writing Network Access, the Dominant Provider shall provide that Network Access. The Dominant Provider shall also provide such Network Access as Ofcom may from time to time direct.

H1.2 The provision of Network Access in accordance with paragraph H1.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms, conditions and charges and on such terms, conditions and charges as Ofcom may from time to time direct.

H1.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition H2 – Requirement not to unduly discriminate

H2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with Network Access.

H2.2 In this Condition, the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

Condition H3 – Basis of charges

H3.1 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for Network Access covered by Condition H1 is reasonably derived from the costs of provision based on a forward looking long run incremental cost approach and allowing an appropriate mark up for the recovery of common costs and an appropriate return on capital employed.

H3.2 The Dominant Provider shall comply with any direction Ofcom may from time to time direct under this Condition.

Condition H4 – Requirement to publish a reference offer

H4.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

H4.2 Subject to paragraph H4.8 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of Network Access includes at least the following:

(a) a description of the Network Access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of Network Access);

(b) the locations of the points of Network Access;

(c) the technical standards for Network Access (including any usage restrictions and other security issues);

(d) the conditions for access to ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing);

(e) any ordering and provisioning procedures;

(f) relevant charges, terms of payment and billing procedures;

(g) details of interoperability tests;

(h) details of maintenance and quality as follows:

> (i) specific time scales for the acceptance or refusal of a request for supply and for completion, testing and hand-over or delivery of services and facilities, for provision of support services (such as fault handling and repair);
>
> (ii) service level commitments, namely the quality standards that each party must meet when performing its contractual obligations;
>
> (iii) the amount of compensation payable by one party to another for failure to perform contractual commitments;
>
> (iv) a definition and limitation of liability and indemnity; and
>
> (v) procedures in the event of alterations being proposed to the service offerings, for example, launch of new services, changes to existing services or change to prices;

(i) details of any relevant intellectual property rights;

(j) a dispute resolution procedure to be used between the parties;

(k) details of duration and renegotiation of agreements;

(l) provisions regarding confidentiality of non-public parts of the agreements;

(m) rules of allocation between the parties when supply is limited (for example, for the purpose of co-location or location of masts);

(n) the standard terms and conditions for the provision of Network Access;

(o) the amount applied to:

(i) each Network Component used in providing Network Access with the relevant Usage Factors;

(ii) the Transfer Charge for each Network Component or combination of Network Components described above;

reconciled in each case to the charge payable by a Communications Provider other than the Dominant Provider.

H4.3 To the extent that the Dominant Provider provides to itself Network Access that:

(i) is the same, similar or equivalent to that provided to any other person; or

(ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in a Reference Offer in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it publishes a Reference Offer in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs H4.2(a)-(o).

H4.4 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to any Network Access that it is providing as at the date that this Condition enters into force.

H4.5 The Dominant Provider shall update and publish the Reference Offer in relation to any amendments or in relation to any further Network Access provided after the date that this Condition enters into force.

H4.6 Publication referred to above shall be effected by:

(a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and

(b) sending a copy of the Reference Offer to Ofcom.

H4.7 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person's written request (or such parts which have been requested).

H4.8 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

H4.9 The Dominant Provider shall provide Network Access at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly.

H4.10 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition H5 – Requirement to notify charges and terms and conditions

H5.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish charges, terms and conditions and act in the manner set out below.

H5.2 Save where otherwise provided in Condition H7, the Dominant Provider shall send to Ofcom and to every person with which it has entered into an Access Contract covered by Condition H1 a written notice of any amendment to the charges, terms and conditions on which it provides Network Access or in relation to any charges for new Network Access (an “Access Charge Change Notice”) on the same day as any such amendment comes into effect.

H5.3 The Dominant Provider shall ensure that an Access Charge Change Notice includes:

(a) a description of the Network Access in question;

(b) a reference to the location in the Dominant Provider’s current Reference Offer of the terms and conditions associated with the provision of that Network Access;

(c) the date on which or the period for which any amendments to charges, terms and conditions will take effect (the “effective date”);

(d) the current and proposed new charge and the relevant Usage Factors applied to each Network Component comprised in that Network Access, reconciled in each case with the current or proposed new charge; and

(e) the information specified in sub paragraph (d) above with respect to that Network Access to which that paragraph applies.

H5.4 The Dominant Provider shall not apply any new charge, term and condition identified in an Access Charge Change Notice before the effective date.

H5.5 To the extent that the Dominant Provider provides to itself Network Access that:

(i) is the same, similar or equivalent to that provided to any other person; or

(ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in an Access Charge Change Notice in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it sends to Ofcom an Access Charge Change Notice in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs H5.3(a)-(e).

Condition H6 – Quality of Service

H6.1 The Dominant provider shall publish all such information for the purposes of securing transparency as to the quality of service in relation to Network Access provided by the Dominant Provider in such manner and form as Ofcom may from time to time direct.

H6.2 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition H7 – Requirement to notify technical information

H7.1 Save where Ofcom consents otherwise, where the Dominant Provider-

(a) proposes to provide Network Access covered by Condition H1, the terms and conditions for which comprise new-

(i) technical characteristics (including information on network configuration where necessary to make effective use of the Network Access);

(iii) locations of the points of Network Access; or

(iii) technical standards (including any usage restrictions and other security issues),

or

(b) proposes to amend an existing Access Contract covered by Condition H1 by modifying the terms and conditions listed in paragraph H7.1(a)(i) to (iii) on which the Network Access is provided,

the Dominant Provider shall publish a written notice (the "Notice") of the new or amended terms and conditions within a reasonable time period but not less than 90 days before either the Dominant Provider enters into an Access Contract to provide the new Network Access or the amended terms and conditions of the existing Access Contract come into effect.

H7.2 The Dominant Provider shall ensure that the Notice includes-

(a) a description of the Network Access in question;

(b) a reference to the location in the Dominant Provider's Reference Offer of the relevant terms and conditions;

(c) the date on which or the period for which the Dominant Provider may enter into an Access Contract to provide the new Network Access or any amendments to the relevant terms and conditions will take effect (the "effective date").

H7.3 The Dominant Provider shall not enter into an Access Contract containing the terms and conditions identified in the Notice or apply any new relevant terms and conditions identified in the Notice before the effective date.

H7.4 Publication referred to in paragraph H7.1 shall be effected by:

(a) placing a copy of the Notice on any relevant website operated or controlled by the Dominant Provider;

(b) sending a copy of the Notice to Ofcom; and

(c) sending a copy of the Notice to any person at that person's written request, and where the Notice identifies a modification to existing relevant terms and conditions, to every person with which the Dominant Provider has entered into an Access Contract covered by Condition H1. The provision of such a copy of the Notice may be subject to a reasonable charge.

H8 - Requests for new Network Access

H8.1 The Dominant Provider shall for the purposes of transparency publish reasonable guidelines, in relation to requests for new Network Access made to it. Such guidelines shall detail:

(a) the form in which such a request should be made;

(b) the information that the Dominant Provider requires in order to consider a request for new Network Access; and

(c) the time scales in which such requests will be handled by the Dominant Provider in accordance with this Condition.

H8.2 Such guidelines shall be published within two months of the date that this Condition enters into force following a consultation with Ofcom and Third Parties. The Dominant Provider shall keep the guidelines under review and consult with relevant Third Parties and Ofcom before making any amendments to the guidelines.

H8.3 The Dominant Provider shall, upon a reasonable request from a Third Party considering making a request for new Network Access, provide that Third Party with information so as to enable that Third Party to make a request for new Network Access. Such information shall be provided within a reasonable period.

H8.4 On receipt of a written request for new Network Access the Dominant Provider shall ensure that the requirements of this Condition are met. A modification of a request for new Network Access which has previously been submitted to the Dominant Provider, and rejected by the Dominant Provider, shall be considered as a new request.

H8.5 Within five working days of receipt of a request under paragraph H8.4, the Dominant Provider shall acknowledge that request in writing.

H8.6 Within fifteen working days of receipt of a request under paragraph H8.4 the Dominant Provider shall respond in writing to the requesting Third Party in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall confirm that the following will be prepared:

(i) the timetable for the provision of the new Network Access;
(ii) an initial offer of terms and conditions for the provision of the new Network Access; and
(iii) the timetable for the agreement of technical issues.

(b) the Dominant Provider shall confirm that a feasibility study is reasonably required in order to determine whether the request made is reasonable and the Dominant Provider shall set out its objective reasons for the need for such a study;

(c) the Dominant Provider shall confirm that the request is not sufficiently well formulated and, where it does so, the Dominant Provider shall detail all of the defects in the request which has been made; or

(d) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal.

H8.7 Where the Dominant Provider responds to a request under paragraph H8.4 in accordance with paragraph H8.6(a) it shall, within thirty five working days of receipt of a request under paragraph H8.4, respond further to the requesting Third Party in writing and:

(i) confirm the timetable for the provision of the new Network Access;
(ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and
(iii) confirm the timetable for the agreement of technical issues.

H8.8 Where the Dominant Provider responds to a request under paragraph H8.4 in accordance with paragraph H8.6(a) and determines, due to a genuine error of fact, that it reasonably needs to complete a feasibility study, it may, as soon as practicable and in any event, within thirty five working days of receipt of a request under paragraph H8.4, inform the requesting Third Party that a feasibility study is reasonably required and set out its objective reasons for such a study.

H8.9 Where H8.8 applies the Dominant Provider shall, within forty five working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required, respond further to the requesting Third party, in writing, in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall:

(i) confirm the timetable for the provision of the new Network Access;
(ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and
(iii) confirm the timetable for the agreement of technical issues; or

(b) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal. The Dominant Provider shall provide to Ofcom a copy of the feasibility study and shall provide to the requesting Third Party a non-confidential copy of the feasibility study.

H8.10 The time limit set out in paragraph H8.9 above shall be extended up to seventy working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required pursuant to paragraph H8.8, if:

- circumstances have arisen which, despite the Dominant Provider using its best endeavours, prevent it from completing the feasibility study within forty five working days of the date that the requesting Third Party was informed of the need for a feasibility study pursuant to paragraph H8.8; or

- the Third Party and the Dominant Provider agree to extend the time limit up to seventy working days.

H8.11 The time limit set out in paragraph H8.9 above shall be extended beyond seventy working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required pursuant to paragraph H8.8, if:

- Ofcom agrees; or

- the Third Party and the Dominant Provider agree to extend the time limit beyond seventy working days.

H8.12 Where the Dominant Provider responds to a request under paragraph H8.4 in accordance with paragraph H8.6(b) the Dominant Provider shall, within sixty working days of receipt of a request under paragraph H8.4, respond further to the requesting Third Party, in writing, in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall:

(i) confirm the timetable for the provision of the new Network Access;
(ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and
(iii) confirm the timetable for the agreement of technical issues; or

(b) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal. The Dominant Provider shall provide to Ofcom a copy of the feasibility study and shall provide to the requesting Third Party a non-confidential copy of the feasibility study.

H8.13 The time limit set out in paragraph H8.12 above shall be extended up to eighty five working days of receipt of a request under paragraph H8.4, if:

- circumstances have arisen which, despite the Dominant Provider using its best endeavours, prevent it from completing the feasibility study within sixty working days of receipt of a request under paragraph H8.4; or

- the Third Party and the Dominant Provider agree to extend the time limit up to eighty five working days.

H8.14 The time limit set out in paragraph H8.12 above shall be extended beyond eighty five working days of receipt of a request under paragraph H8.4, if:

- Ofcom agrees; or

- the Third Party and the Dominant Provider agree to extend the time limit beyond eighty five working days.

H8.15 Within two months of the date that this Condition enters info force the Dominant Provider shall provide Ofcom with a description of the processes it has put in place to ensure compliance with this Condition. It shall keep those processes under review to ensure that they remain adequate for that purpose.

H8.16 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

The conditions imposed on British Telecommunications plc under the Communications Act 2003 as a result of the analysis of the market for the provision of alternative interface symmetric broadband origination at all bandwidths in which British Telecommunications plc has been found to have significant market power

Part 1: Definitions and Interpretation of these conditions

1. These conditions shall apply to the market for the provision of alternative interface symmetric broadband origination at all bandwidths within the United Kingdom but not including the Hull Area.

2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the markets referred to in paragraph 1 the following definitions shall apply:

“Act” means the Communications Act 2003;

“Access Charge Change Notice” has the meaning given to it in Condition HH5;

“Dominant Provider” means British Telecommunications plc, whose registered company number is 1800000 and any British Telecommunications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

“the Hull Area” means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;

"Network Component” means to the extent they are used in the Market the network components specified in a Direction given by Ofcom from time to time for the purpose of these conditions;

“Reference Offer” means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract;

"The Market" means the market set out in paragraph 1 above;

“Third Party” means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network;

"Transfer Charge” means the charge or price that is applied, or deemed to be applied, by the Dominant Provider to itself for the use or provision of an activity or group of activities. For the avoidance of doubt such activities or group of activities include, amongst other things, products and services provided from, to or within the Market and the use of Network Components in that Market; and

"Usage Factor" means the average usage by any Communications Provider (including the Dominant Provider itself) of each Network Component in using or providing a particular product or service or carrying out a particular activity.

3. Save for the purposes of paragraph 1, except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act.

4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.

5. Headings and titles shall be disregarded.

Part 2: The conditions

Condition HH1 – Requirement to provide network access on reasonable request

HH1.1 Where a Third Party reasonably requests in writing Network Access, the Dominant Provider shall provide that Network Access. The Dominant Provider shall also provide such Network Access as Ofcom may from time to time direct.

HH1.2 The provision of Network Access in accordance with paragraph HH1.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms, conditions and charges and on such terms, conditions and charges as Ofcom may from time to time direct.

HH1.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition HH2 – Requirement not to unduly discriminate

HH2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with Network Access.

HH2.2 In this Condition, the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

Condition HH3 – Basis of charges

HH3.1 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for Network Access covered by Condition HH1 is reasonably derived from the costs of provision based on a forward looking long run incremental cost approach and allowing an appropriate mark up for the recovery of common costs including an appropriate return on capital employed.

HH3.2 The Dominant Provider shall comply with any direction Ofcom may from time to time direct under this Condition.

Condition HH4 – Requirement to publish a reference offer

HH4.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

HH4.2 Subject to paragraph HH4.8 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of Network Access includes at least the following:

(a) a description of the Network Access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of Network Access);

(b) the locations of the points of Network Access;

(c) the technical standards for Network Access (including any usage restrictions and other security issues);

(d) the conditions for access to ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing);

(e) any ordering and provisioning procedures;

(f) relevant charges, terms of payment and billing procedures;

(g) details of interoperability tests;

(h) details of maintenance and quality as follows:

> (i) specific time scales for the acceptance or refusal of a request for supply and for completion, testing and hand-over or delivery of services and facilities, for provision of support services (such as fault handling and repair);
>
> (ii) service level commitments, namely the quality standards that each party must meet when performing its contractual obligations;
>
> (iii) the amount of compensation payable by one party to another for failure to perform contractual commitments;
>
> (iv) a definition and limitation of liability and indemnity; and
>
> (v) procedures in the event of alterations being proposed to the service offerings, for example, launch of new services, changes to existing services or change to prices;

(i) details of any relevant intellectual property rights;

(j) a dispute resolution procedure to be used between the parties;

(k) details of duration and renegotiation of agreements;

(l) provisions regarding confidentiality of non-public parts of the agreements;

(m) rules of allocation between the parties when supply is limited (for example, for the purpose of co-location or location of masts);

(n) the standard terms and conditions for the provision of Network Access;

(o) the amount applied to:

(i) each Network Component used in providing Network Access with the relevant Usage Factors;

(ii) the Transfer Charge for each Network Component or combination of Network Components described above;

reconciled in each case to the charge payable by a Communications Provider other than the Dominant Provider.

HH4.3 To the extent that the Dominant Provider provides to itself Network Access that:

(i) is the same, similar or equivalent to that provided to any other person; or

(ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in a Reference Offer in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it publishes a Reference Offer in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs HH4.2(a)-(o).

HH4.4 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to any Network Access that it is providing as at the date that this Condition enters into force.

HH4.5 The Dominant Provider shall update and publish the Reference Offer in relation to any amendments or in relation to any further Network Access provided after the date that this Condition enters into force.

HH4.6 Publication referred to above shall be effected by:

(a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and

(b) sending a copy of the Reference Offer to Ofcom.

HH4.7 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person’s written request (or such parts which have been requested).

HH4.8 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

HH4.9 The Dominant Provider shall provide Network Access at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly.

HH4.10 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition HH5 – Requirement to notify charges and terms and conditions

HH5.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish charges, terms and conditions and act in the manner set out below.

HH5.2 Save where otherwise provided in Condition HH7, the Dominant Provider shall send to Ofcom and to every person with which it has entered into an Access Contract covered by Condition HH1, a written notice of any amendment to the charges, terms and conditions on which it provides Network Access or in relation to any charges for new Network Access (an "Access Charge Change Notice") not less than 90 days before any such amendment comes into effect for existing Network Access, or not less than 28 days before any such amendment comes into effect for new Network Access.

HH5.3 The Dominant Provider shall ensure that an Access Charge Change Notice includes:

(a) a description of the Network Access in question;

(b) a reference to the location in the Dominant Provider's current Reference Offer of the terms and conditions associated with the provision of that Network Access;

(c) the date on which or the period for which any amendments to charges, terms and conditions will take effect (the "effective date");

(d) the current and proposed new charge and the relevant Usage Factors applied to each Network Component comprised in that Network Access, reconciled in each case with the current or proposed new charge; and

(e) the information specified in sub paragraph (d) above with respect to that Network Access to which that paragraph applies.

HH5.4 The Dominant Provider shall not apply any new charge, term and condition identified in an Access Charge Change Notice before the effective date.

HH5.5 To the extent that the Dominant Provider provides to itself Network Access that:

(i) is the same, similar or equivalent to that provided to any other person; or

(ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in an Access Charge Change Notice in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it sends to Ofcom an Access Charge Change Notice in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs HH5.3(a)-(e).

Condition HH6 – Quality of Service

HH6.1 The Dominant provider shall publish all such information for the purposes of securing transparency as to the quality of service in relation to Network Access provided by the Dominant Provider in such manner and form as Ofcom may from time to time direct.

HH6.2 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition HH7 – Requirement to notify technical information

HH7.1 Save where Ofcom consents otherwise, where the Dominant Provider-

(a) proposes to provide Network Access covered by Condition HH1, the terms and conditions for which comprise new-

(i) technical characteristics (including information on network configuration where necessary to make effective use of the Network Access);

(ii) locations of the points of Network Access; or

(iii) technical standards (including any usage restrictions and other security issues),

or

(b) proposes to amend an existing Access Contract covered by Condition HH1 by modifying the terms and conditions listed in paragraph HH7.1(a)(i) to (iii) on which the Network Access is provided,

the Dominant Provider shall publish a written notice (the "Notice") of the new or amended terms and conditions within a reasonable time period but not less than 90 days before either the Dominant Provider enters into an Access Contract to provide the new Network Access or the amended terms and conditions of the existing Access Contract come into effect.

HH7.2 The Dominant Provider shall ensure that the Notice includes-

(a) a description of the Network Access in question;

(b) a reference to the location in the Dominant Provider's Reference Offer of the relevant terms and conditions;

(c) the date on which or the period for which the Dominant Provider may enter into an Access Contract to provide the new Network Access or any amendments to the relevant terms and conditions will take effect (the "effective date").

HH7.3 The Dominant Provider shall not enter into an Access Contract containing the terms and conditions identified in the Notice or apply any new relevant terms and conditions identified in the Notice before the effective date.

HH7.4 Publication referred to in paragraph HH7.1 shall be effected by:

(a) placing a copy of the Notice on any relevant website operated or controlled by the Dominant Provider;

(b) sending a copy of the Notice to Ofcom; and

(c) sending a copy of the Notice to any person at that person's written request, and where the Notice identifies a modification to existing relevant terms and conditions, to every person with which the Dominant Provider has entered into an Access Contract covered by Condition HH1. The provision of such a copy of the Notice may be subject to a reasonable charge.

HH8 - Requests for new Network Access

HH8.1 The Dominant Provider shall for the purposes of transparency publish reasonable guidelines, in relation to requests for new Network Access made to it. Such guidelines shall detail:

(a) the form in which such a request should be made;

(b) the information that the Dominant Provider requires in order to consider a request for new Network Access; and

(c) the time scales in which such requests will be handled by the Dominant Provider in accordance with this Condition.

HH8.2 Such guidelines shall be published within two months of the date that this Condition enters into force following a consultation with Ofcom and Third Parties. The Dominant Provider shall keep the guidelines under review and consult with relevant Third Parties and Ofcom before making any amendments to the guidelines.

HH8.3 The Dominant Provider shall, upon a reasonable request from a Third Party considering making a request for new Network Access, provide that Third Party with information so as to enable that Third Party to make a request for new Network Access. Such information shall be provided within a reasonable period.

HH8.4 On receipt of a written request for new Network Access the Dominant Provider shall ensure that the requirements of this Condition are met. A modification of a request for new Network Access which has previously been submitted to the Dominant Provider, and rejected by the Dominant Provider, shall be considered as a new request.

HH8.5 Within five working days of receipt of a request under paragraph HH8.4, the Dominant Provider shall acknowledge that request in writing.

HH8.6 Within fifteen working days of receipt of a request under paragraph HH8.4 the Dominant Provider shall respond in writing to the requesting Third Party in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall confirm that the following will be prepared:

(i) the timetable for the provision of the new Network Access;
(ii) an initial offer of terms and conditions for the provision of the new Network Access; and
(iii) the timetable for the agreement of technical issues.

(b) the Dominant Provider shall confirm that a feasibility study is reasonably required in order to determine whether the request made is reasonable and the Dominant Provider shall set out its objective reasons for the need for such a study;

(c) the Dominant Provider shall confirm that the request is not sufficiently well formulated and, where it does so, the Dominant Provider shall detail all of the defects in the request which has been made; or

(d) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal.

HH8.7 Where the Dominant Provider responds to a request under paragraph HH8.4 in accordance with paragraph HH8.6(a) it shall, within thirty five working days of receipt of a request under paragraph HH8.4, respond further to the requesting Third Party in writing and:

(i) confirm the timetable for the provision of the new Network Access;
(ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and
(iii) confirm the timetable for the agreement of technical issues.

HH8.8 Where the Dominant Provider responds to a request under paragraph HH8.4 in accordance with paragraph HH8.6(a) and determines, due to a genuine error of fact, that it reasonably needs to complete a feasibility study, it may, as soon as practicable and in any event, within thirty five working days of receipt of a request under paragraph HH8.4, inform the requesting Third Party that a feasibility study is reasonably required and set out its objective reasons for such a study.

HH8.9 Where HH8.8 applies the Dominant Provider shall, within forty five working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required, respond further to the requesting Third party, in writing, in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall:

(i) confirm the timetable for the provision of the new Network Access;
(ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and
(iii) confirm the timetable for the agreement of technical issues; or

(b) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal. The Dominant Provider shall provide to Ofcom a copy of the feasibility study and shall provide to the requesting Third Party a non-confidential copy of the feasibility study.

HH8.10 The time limit set out in paragraph HH8.9 above shall be extended up to seventy working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required pursuant to paragraph HH8.8, if:

- circumstances have arisen which, despite the Dominant Provider using its best endeavours, prevent it from completing the feasibility study within forty five working days of the date that the requesting Third Party was informed of the need for a feasibility study pursuant to paragraph HH8.8; or

- the Third Party and the Dominant Provider agree to extend the time limit up to seventy working days.

HH8.11 The time limit set out in paragraph HH8.9 above shall be extended beyond seventy working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required pursuant to paragraph HH8.8, if:

- Ofcom agrees; or

- the Third Party and the Dominant Provider agree to extend the time limit beyond seventy working days.

HH8.12 Where the Dominant Provider responds to a request under paragraph HH8.4 in accordance with paragraph HH8.6(b) the Dominant Provider shall, within sixty working days of receipt of a request under paragraph HH8.4, respond further to the requesting Third Party, in writing, in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall:

(i) confirm the timetable for the provision of the new Network Access;
(ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and
(iii) confirm the timetable for the agreement of technical issues; or

(b) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal. The Dominant Provider shall provide to Ofcom a copy of the feasibility study and shall provide to the requesting Third Party a non-confidential copy of the feasibility study.

HH8.13 The time limit set out in paragraph HH8.12 above shall be extended up to eighty five working days of receipt of a request under paragraph HH8.4, if:

- circumstances have arisen which, despite the Dominant Provider using its best endeavours, prevent it from completing the feasibility study within sixty working days of receipt of a request under paragraph HH8.4; or

- the Third Party and the Dominant Provider agree to extend the time limit up to eighty five working days.

HH8.14 The time limit set out in paragraph HH8.12 above shall be extended beyond eighty five working days of receipt of a request under paragraph HH8.4, if:

- Ofcom agrees; or

- the Third Party and the Dominant Provider agree to extend the time limit beyond eighty five working days.

HH8.15 Within two months of the date that this Condition enters info force the Dominant Provider shall provide Ofcom with a description of the processes it has put in place to ensure compliance with this Condition. It shall keep those processes under review to ensure that they remain adequate for that purpose.

HH8.16 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

The conditions imposed on British Telecommunications plc under the Communications Act 2003 as a result of the analysis of the market for the provision of traditional interface retail leased lines up to and including a bandwidth capacity of eight megabits per second in which British Telecommunications plc has been found to have significant market power

Part 1: Definitions and Interpretation of these conditions

1. These conditions shall apply to the market for the provision of traditional interface retail leased lines up to and including a bandwidth capacity of eight megabits per second within the United Kingdom but not including the Hull Area.

2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the market referred to in paragraph 1 the following definitions shall apply:

   “Act” means the Communications Act 2003;

   “Dominant Provider” means British Telecommunications plc, whose registered company number is 1800000 and any British Telecommunications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

   “the Hull Area” means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;

   “The Minimum Set” means all traditional interface retail leased lines up to and including a bandwidth capacity of two megabits per second.

   “Reference Offer” means the terms and conditions on which the Dominant Provider is willing to enter into an agreement for the provision of a retail leased line;

   "The Market" means the market set out in paragraph 1 above; and

   “Third Party” means person.

3. Save for the purposes of paragraph 1, except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act.

4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.

5. Headings and titles shall be disregarded.

Part 2: The conditions

Condition I1 – Requirement to provide retail leased lines

I1.1 The Dominant Provider shall provide a retail leased line falling within the Minimum Set to every Third Party who reasonably requests in writing such a leased line.

I1.2 The provision of retail leased lines in accordance with paragraph I1.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms, conditions and charges and on such terms, conditions and charges as Ofcom may from time to time direct.

I1.3 The Dominant Provider shall not be required to provide a retail leased line of eight megabits per second bandwidth capacity to a Third Party unless it was supplying that leased line to the Third Party on the date that this Condition enters into force.

I1.4 The provision of retail leased lines in accordance with paragraph I1.3 shall be provided on fair and reasonable terms, conditions and charges and on such terms, conditions and charges as Ofcom may from time to time direct.

I1.5 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition I2 – Requirement not to unduly discriminate

I2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with the supply of retail leased lines up to and including a bandwidth capacity of eight megabits per second.

I2.2 In this Condition, the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

Condition I3 – Basis of charges

I3.1 This Condition shall only apply if Ofcom gives notice to the Dominant Provider that it has breached the voluntary undertaking it gave to Ofcom concerning the pricing of the leased lines which are the subject of this Condition and as set out in a letter from the Dominant Provider to Ofcom dated 24 September 2003.

I3.2 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for retail leased lines of a bandwidth capacity of eight megabits per second or for analogue retail leased lines, is reasonably derived from the costs of provision based on a forward looking long run incremental cost approach and allowing an appropriate mark up for the recovery of common costs and an appropriate return on capital employed.

I3.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time.

Condition I4 – Requirement to publish a reference offer

I4.1 Except in so far as Ofcom may otherwise consent in writing the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

I4.2 Subject to paragraph I4.7 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of retail leased lines of up to and including eight megabits per second bandwidth capacity includes at least the following:

(a) the technical characteristics, including the physical and electrical characteristics as well as the detailed technical and performance specifications which apply at the network termination point;

(b) charges, including the initial connection charges, the periodic rental charges and other charges. Where charges are differentiated, this must be indicated;

(c) information concerning the ordering procedure;

(d) the contractual period, which includes the period which is in general laid down in the contract and the minimum contractual period which the user is obliged to accept;

(e) any refund procedure.

I4.3 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to retail leased lines of up to and including eight megabits per second bandwidth capacity that it is providing as at the date that this Condition enters into force.

I4.4 The Dominant Provider shall update and publish the Reference Offer, in relation to any amendments, or in relation to any further retail leased lines of up to and including eight megabits per second bandwidth capacity provided after the date that this Condition enters into force, on the same day as such amendments take effect or further retail leased lines are offered.

I4.5 Publication referred to above shall be effected by:

(a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and

(b) sending a copy of the Reference Offer to Ofcom.

I4.6 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person's written request (or such parts which have been requested).

I4.7 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

I4.8 The Dominant Provider shall provide retail leased lines of up to and including eight megabits per second bandwidth capacity at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly, unless Ofcom otherwise directs. In addition, where, in response to a particular request, the Dominant Provider considers it unreasonable to provide a retail leased line of up to and including eight megabits per second bandwidth capacity at the charges, terms and conditions set out in the relevant Reference Offer, it may only depart from its Reference Offer with the consent of Ofcom.

I4.9 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition I5 – Requirement to publish information concerning delivery and repair times

I5.1 The Dominant Provider shall publish the following information in relation to traditional interface retail leased lines up to and including a bandwidth capacity of eight megabits per second:

(a) the typical delivery period, which is the period, counted from the date when the user has made a firm request for a leased line, in which 95% of all leased lines of the same type have been put through to the customers. Such period to be established on the basis of the actual delivery periods of leased lines during a recent time interval of reasonable duration. The calculation must not include cases where late delivery periods were requested by users; and

(b) the typical repair time, which is the period, counted from the time when a failure message has been given to the responsible unit within the Dominant Provider up to the moment in which 80% of all leased lines of the same type have been re-established and in appropriate cases notified back in operation to the users. Where different classes of quality of repair are offered for the same type of leased lines, the different typical repair times shall be published.

I5.2 Publication referred to above shall be effected by:

(a) placing a copy of the information referred to in Condition I5.1 on any relevant website operated or controlled by the Dominant Provider; and

(b) sending a copy of the information referred to in Condition I5.1 to Ofcom.

Schedule 2

The conditions imposed on Kingston Communications (Hull) plc under the Communications Act 2003 as a result of the analysis of the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second in which Kingston Communications (Hull) plc has been found to have significant market power

Part 1: Definitions and Interpretation of these conditions

1. These conditions shall apply to the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second within the Hull Area.

2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the markets referred to in paragraph 1 the following definitions shall apply:

   "Act" means the Communications Act 2003;

   "Dominant Provider" means Kingston Communications (Hull) plc whose registered company number is 2150618 and any Kingston Communications (Hull) plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

   "the Hull Area" means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;

   "Network Component" means to the extent they are used in the Market the network components specified in a Direction given by Ofcom from time to time for the purpose of these conditions;

   "Reference Offer" means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract;

   "The Market" means the market set out in paragraph 1 above;

   "Third Party" means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network;

   "Transfer Charge" means the charge or price that is applied, or deemed to be applied, by the Dominant Provider to itself for the use or provision of an activity or group of activities. For the avoidance of doubt such activities or group of activities include, amongst other things, products and services provided from, to or within the Market and the use of Network Components in that Market; and

"Usage Factor" means the average usage by any Communications Provider (including the Dominant Provider itself) of each Network Component in using or providing a particular product or service or carrying out a particular activity.

3. Save for the purposes of paragraph 1, except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act.

4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.

5. Headings and titles shall be disregarded.

Part 2: The conditions

Condition GA1 – Requirement to provide network access on reasonable request

GA1.1 Where a Third Party reasonably requests in writing Network Access, the Dominant Provider shall provide that Network Access. The Dominant Provider shall also provide such Network Access as Ofcom may from time to time direct.

GA1.2 The provision of Network Access in accordance with paragraph GA1.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms, conditions and charges and on such terms, conditions and charges as Ofcom may from time to time direct.

GA1.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition GA2 – Requirement not to unduly discriminate

GA2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with Network Access.

GA2.2 In this Condition, the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

Condition GA3 – Basis of charges

GA3.1 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for Network Access covered by Condition GA1 is reasonably derived from the costs of provision based on a forward looking long run incremental cost approach and allowing an appropriate mark up for the recovery of common costs including an appropriate return on capital employed.

GA3.2 The Dominant Provider shall comply with any direction Ofcom may from time to time direct under this Condition.

Condition GA4 – Requirement to publish a reference offer

GA4.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

GA4.2 Subject to paragraph GA4.8 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of Network Access includes at least the following:

(a) a description of the Network Access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of Network Access);

(b) the locations of the points of Network Access;

(c) the technical standards for Network Access (including any usage restrictions and other security issues);

(d) the conditions for access to ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing);

(e) any ordering and provisioning procedures;

(f) relevant charges, terms of payment and billing procedures;

(g) details of interoperability tests;

(h) details of maintenance and quality as follows:

> (i) specific time scales for the acceptance or refusal of a request for supply and for completion, testing and hand-over or delivery of services and facilities, for provision of support services (such as fault handling and repair);
>
> (ii) service level commitments, namely the quality standards that each party must meet when performing its contractual obligations;
>
> (iii) the amount of compensation payable by one party to another for failure to perform contractual commitments;
>
> (iv) a definition and limitation of liability and indemnity; and
>
> (v) procedures in the event of alterations being proposed to the service offerings, for example, launch of new services, changes to existing services or change to prices;

(i) details of any relevant intellectual property rights;

(j) a dispute resolution procedure to be used between the parties;

(k) details of duration and renegotiation of agreements;

(l) provisions regarding confidentiality of non-public parts of the agreements;

(m) rules of allocation between the parties when supply is limited (for example, for the purpose of co-location or location of masts);

(n) the standard terms and conditions for the provision of Network Access;

(o) the amount applied to:

(i) each Network Component used in providing Network Access with the relevant Usage Factors;

(ii) the Transfer Charge for each Network Component or combination of Network Components described above;

reconciled in each case to the charge payable by a Communications Provider other than the Dominant Provider.

GA4.3 To the extent that the Dominant Provider provides to itself Network Access that:

(i) is the same, similar or equivalent to that provided to any other person; or

(ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in a Reference Offer in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it publishes a Reference Offer in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs GA4.2(a)-(o).

GA4.4 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to any Network Access that it is providing as at the date that this Condition enters into force.

GA4.5 The Dominant Provider shall update and publish the Reference Offer in relation to any amendments or in relation to any further Network Access provided after the date that this Condition enters into force.

GA4.6 Publication referred to above shall be effected by:

(a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and

(b) sending a copy of the Reference Offer to Ofcom.

GA4.7 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person’s written request (or such parts which have been requested).

GA4.8 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

GA4.9 The Dominant Provider shall provide Network Access at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly.

GA4.10 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition GA5 – Requirement to notify technical information

GA5.1 Save where Ofcom consents otherwise, where the Dominant Provider-

(a) proposes to provide Network Access covered by Condition GA1, the terms and conditions for which comprise new-

(i) technical characteristics (including information on network configuration where necessary to make effective use of the Network Access);

(ii) locations of the points of Network Access; or

(iii) technical standards (including any usage restrictions and other security issues),

or

(b) proposes to amend an existing Access Contract covered by Condition GA1 by modifying the terms and conditions listed in paragraph GA5.1(a)(i) to (iii) on which the Network Access is provided,

the Dominant Provider shall publish a written notice (the "Notice") of the new or amended terms and conditions within a reasonable time period but not less than 90 days before either the Dominant Provider enters into an Access Contract to provide the new Network Access or the amended terms and conditions of the existing Access Contract come into effect.

GA5.2 The Dominant Provider shall ensure that the Notice includes-

(a) a description of the Network Access in question;

(b) a reference to the location in the Dominant Provider's Reference Offer of the relevant terms and conditions;

(c) the date on which or the period for which the Dominant Provider may enter into an Access Contract to provide the new Network Access or any amendments to the relevant terms and conditions will take effect (the "effective date").

GA5.3 The Dominant Provider shall not enter into an Access Contract containing the terms and conditions identified in the Notice or apply any new relevant terms and conditions identified in the Notice before the effective date.

GA5.4 Publication referred to in paragraph GA5.1 shall be effected by:

(a) placing a copy of the Notice on any relevant website operated or controlled by the Dominant Provider;

(b) sending a copy of the Notice to Ofcom; and

(c) sending a copy of the Notice to any person at that person's written request, and where the Notice identifies a modification to existing relevant terms and conditions, to every person with which the Dominant Provider has entered into an Access Contract covered by Condition GA1. The provision of such a copy of the Notice may be subject to a reasonable charge.

The conditions imposed on Kingston Communications (Hull) plc under the Communications Act 2003 as a result of the analysis of the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including one hundred and fifty five megabits per second in which Kingston Communications (Hull) plc has been found to have significant market power

Part 1: Definitions and Interpretation of these conditions

1. These conditions shall apply to the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including one hundred and fifty five megabits per second within the Hull Area.

2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the markets referred to in paragraph 1 the following definitions shall apply:

   "Act" means the Communications Act 2003;

   "Dominant Provider" means Kingston Communications (Hull) plc whose registered company number is 2150618 and any Kingston Communications (Hull) plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

   "the Hull Area" means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;

   "Network Component" means to the extent they are used in the Market the network components specified in a Direction given by Ofcom from time to time for the purpose of these conditions;

   "Reference Offer" means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract;

   "The Market" means the market set out in paragraph 1 above;

   "Third Party" means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network;

   "Transfer Charge" means the charge or price that is applied, or deemed to be applied, by the Dominant Provider to itself for the use or provision of an activity or group of activities. For the avoidance of doubt such activities or group of activities include, amongst other things, products and services provided from, to or within the Market and the use of Network Components in that Market; and

"Usage Factor" means the average usage by any Communications Provider (including the Dominant Provider itself) of each Network Component in using or providing a particular product or service or carrying out a particular activity.

3. Save for the purposes of paragraph 1, except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act.

4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.

5. Headings and titles shall be disregarded.

Part 2: The conditions

Condition GGA1 – Requirement to provide network access on reasonable request

GGA1.1 Where a Third Party reasonably requests in writing Network Access, the Dominant Provider shall provide that Network Access. The Dominant Provider shall also provide such Network Access as Ofcom may from time to time direct.

GGA1.2 The provision of Network Access in accordance with paragraph GGA1.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms, conditions and charges and on such terms, conditions and charges as Ofcom may from time to time direct.

GGA1.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition GGA2 – Requirement not to unduly discriminate

GGA2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with Network Access.

GGA2.2 In this Condition, the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

Condition GGA3 – Basis of charges

GGA3.1 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for Network Access covered by Condition GGA1 is reasonably derived from the costs of provision based on a forward looking long run incremental cost approach and allowing an appropriate mark up for the recovery of common costs including an appropriate return on capital employed.

GGA3.2 The Dominant Provider shall comply with any direction Ofcom may from time to time direct under this Condition.

Condition GGA4 – Requirement to publish a reference offer

GGA4.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

GGA4.2 Subject to paragraph GGA4.8 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of Network Access includes at least the following:

(a) a description of the Network Access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of Network Access);

(b) the locations of the points of Network Access;

(c) the technical standards for Network Access (including any usage restrictions and other security issues);

(d) the conditions for access to ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing);

(e) any ordering and provisioning procedures;

(f) relevant charges, terms of payment and billing procedures;

(g) details of interoperability tests;

(h) details of maintenance and quality as follows:

> (i) specific time scales for the acceptance or refusal of a request for supply and for completion, testing and hand-over or delivery of services and facilities, for provision of support services (such as fault handling and repair);
>
> (ii) service level commitments, namely the quality standards that each party must meet when performing its contractual obligations;
>
> (iii) the amount of compensation payable by one party to another for failure to perform contractual commitments;
>
> (iv) a definition and limitation of liability and indemnity; and
>
> (v) procedures in the event of alterations being proposed to the service offerings, for example, launch of new services, changes to existing services or change to prices;

(i) details of any relevant intellectual property rights;

(j) a dispute resolution procedure to be used between the parties;

(k) details of duration and renegotiation of agreements;

(l) provisions regarding confidentiality of non-public parts of the agreements;

(m) rules of allocation between the parties when supply is limited (for example, for the purpose of co-location or location of masts);

(n) the standard terms and conditions for the provision of Network Access;

(o) the amount applied to:

(i) each Network Component used in providing Network Access with the relevant Usage Factors;

(ii) the Transfer Charge for each Network Component or combination of Network Components described above;

reconciled in each case to the charge payable by a Communications Provider other than the Dominant Provider.

GGA4.3 To the extent that the Dominant Provider provides to itself Network Access that:

(i) is the same, similar or equivalent to that provided to any other person; or

(ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in a Reference Offer in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it publishes a Reference Offer in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs GGA4.2(a)-(o).

GGA4.4 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to any Network Access that it is providing as at the date that this Condition enters into force.

GGA4.5 The Dominant Provider shall update and publish the Reference Offer in relation to any amendments or in relation to any further Network Access provided after the date that this Condition enters into force.

GGA4.6 Publication referred to above shall be effected by:

(a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and

(b) sending a copy of the Reference Offer to Ofcom.

GGA4.7 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person’s written request (or such parts which have been requested).

GGA4.8 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

GGA4.9 The Dominant Provider shall provide Network Access at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly.

GGA4.10 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition GGA5 – Requirement to notify technical information

GGA5.1 Save where Ofcom consents otherwise, where the Dominant Provider-

(a) proposes to provide Network Access covered by Condition GGA1, the terms and conditions for which comprise new-

> (i) technical characteristics (including information on network configuration where necessary to make effective use of the Network Access);
>
> (ii) locations of the points of Network Access; or
>
> (iii) technical standards (including any usage restrictions and other security issues),

or

(b) proposes to amend an existing Access Contract covered by Condition GGA1 by modifying the terms and conditions listed in paragraph GGA5.1(a)(i) to (iii) on which the Network Access is provided,

the Dominant Provider shall publish a written notice (the "Notice") of the new or amended terms and conditions within a reasonable time period but not less than 90 days before either the Dominant Provider enters into an Access Contract to provide the new Network Access or the amended terms and conditions of the existing Access Contract come into effect.

GGA5.2 The Dominant Provider shall ensure that the Notice includes-

(a) a description of the Network Access in question;

(b) a reference to the location in the Dominant Provider's Reference Offer of the relevant terms and conditions;

(c) the date on which or the period for which the Dominant Provider may enter into an Access Contract to provide the new Network Access or any amendments to the relevant terms and conditions will take effect (the "effective date").

GGA5.3 The Dominant Provider shall not enter into an Access Contract containing the terms and conditions identified in the Notice or apply any new relevant terms and conditions identified in the Notice before the effective date.

GGA5.4 Publication referred to in paragraph GGA5.1 shall be effected by:

(a) placing a copy of the Notice on any relevant website operated or controlled by the Dominant Provider;

(b) sending a copy of the Notice to Ofcom; and

(c) sending a copy of the Notice to any person at that person's written request, and where the Notice identifies a modification to existing relevant terms and conditions, to every person with which the Dominant Provider has entered into an Access Contract covered by Condition GGA1. The provision of such a copy of the Notice may be subject to a reasonable charge.

The conditions imposed on Kingston Communications (Hull) plc under the Communications Act 2003 as a result of the analysis of the market for the provision of alternative interface symmetric broadband origination at all bandwidths in which Kingston Communications (Hull) plc has been found to have significant market power

Part 1: Definitions and Interpretation of these conditions

1. These conditions shall apply to the market for the provision of alternative interface symmetric broadband origination at all bandwidths within the Hull Area.

2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the markets referred to in paragraph 1 the following definitions shall apply:

   "Act" means the Communications Act 2003;

   "Dominant Provider" means Kingston Communications (Hull) plc whose registered company number is 2150618 and any Kingston Communications (Hull) plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

   "the Hull Area" means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;

   "Network Component" means to the extent they are used in the Market the network components specified in a Direction given by Ofcom from time to time for the purpose of these conditions;

   "Reference Offer" means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract;

   "The Market" means the market set out in paragraph 1 above;

   "Third Party" means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network;

   "Transfer Charge" means the charge or price that is applied, or deemed to be applied, by the Dominant Provider to itself for the use or provision of an activity or group of activities. For the avoidance of doubt such activities or group of activities include, amongst other things, products and services provided from, to or within the Market and the use of Network Components in that Market; and

   "Usage Factor" means the average usage by any Communications Provider (including the Dominant Provider itself) of each Network Component in using or providing a particular product or service or carrying out a particular activity.

3. Save for the purposes of paragraph 1, except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act.

4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.

5. Headings and titles shall be disregarded.

Part 2: The conditions

Condition HA1 – Requirement to provide network access on reasonable request

HA1.1 Where a Third Party reasonably requests in writing Network Access, the Dominant Provider shall provide that Network Access. The Dominant Provider shall also provide such Network Access as Ofcom may from time to time direct.

HA1.2 The provision of Network Access in accordance with paragraph HA1.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms, conditions and charges and on such terms, conditions and charges as Ofcom may from time to time direct.

HA1.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition HA2 – Requirement not to unduly discriminate

HA2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with Network Access.

HA2.2 In this Condition, the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

Condition HA3 – Basis of charges

HA3.1 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for Network Access covered by Condition HA1 is reasonably derived from the costs of provision based on a forward looking long run incremental cost approach and allowing an appropriate mark up for the recovery of common costs including an appropriate return on capital employed.

HA3.2 The Dominant Provider shall comply with any direction Ofcom may from time to time direct under this Condition.

Condition HA4 – Requirement to publish a reference offer

HA4.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

HA4.2 Subject to paragraph HA4.8 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of Network Access includes at least the following:

(a) a description of the Network Access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of Network Access);

(b) the locations of the points of Network Access;

(c) the technical standards for Network Access (including any usage restrictions and other security issues);

(d) the conditions for access to ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing);

(e) any ordering and provisioning procedures;

(f) relevant charges, terms of payment and billing procedures;

(g) details of interoperability tests;

(h) details of maintenance and quality as follows:

> (i) specific time scales for the acceptance or refusal of a request for supply and for completion, testing and hand-over or delivery of services and facilities, for provision of support services (such as fault handling and repair);
>
> (ii) service level commitments, namely the quality standards that each party must meet when performing its contractual obligations;
>
> (iii) the amount of compensation payable by one party to another for failure to perform contractual commitments;
>
> (iv) a definition and limitation of liability and indemnity; and
>
> (v) procedures in the event of alterations being proposed to the service offerings, for example, launch of new services, changes to existing services or change to prices;

(i) details of any relevant intellectual property rights;

(j) a dispute resolution procedure to be used between the parties;

(k) details of duration and renegotiation of agreements;

(l) provisions regarding confidentiality of non-public parts of the agreements;

(m) rules of allocation between the parties when supply is limited (for example, for the purpose of co-location or location of masts);

(n) the standard terms and conditions for the provision of Network Access;

(o) the amount applied to:

(i) each Network Component used in providing Network Access with the relevant Usage Factors;

(ii) the Transfer Charge for each Network Component or combination of Network Components described above;

reconciled in each case to the charge payable by a Communications Provider other than the Dominant Provider.

HA4.3 to the extent that the Dominant Provider provides to itself Network Access that:

(i) is the same, similar or equivalent to that provided to any other person; or

(ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in a Reference Offer in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it publishes a Reference Offer in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs HA4.2(a)-(o).

HA4.4 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to any Network Access that it is providing as at the date that this Condition enters into force.

HA4.5 The Dominant Provider shall update and publish the Reference Offer in relation to any amendments or in relation to any further Network Access provided after the date that this Condition enters into force.

HA4.6 Publication referred to above shall be effected by:

(a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and

(b) sending a copy of the Reference Offer to Ofcom.

HA4.7 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person’s written request (or such parts which have been requested).

HA4.8 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

HA4.9 The Dominant Provider shall provide Network Access at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly.

HA4.10 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition HA5 – Requirement to notify technical information

HA5.1 Save where Ofcom consents otherwise, where the Dominant Provider-

(a) proposes to provide Network Access covered by Condition HA1, the terms and conditions for which comprise new-

(i) technical characteristics (including information on network configuration where necessary to make effective use of the Network Access);

(ii) locations of the points of Network Access; or

(iii) technical standards (including any usage restrictions and other security issues),

or

(b) proposes to amend an existing Access Contract covered by Condition HA1 by modifying the terms and conditions listed in paragraph HA5.1(a)(i) to (iii) on which the Network Access is provided,

the Dominant Provider shall publish a written notice (the “Notice”) of the new or amended terms and conditions within a reasonable time period but not less than 90 days before either the Dominant Provider enters into an Access Contract to provide the new Network Access or the amended terms and conditions of the existing Access Contract come into effect.

HA5.2 The Dominant Provider shall ensure that the Notice includes-

(a) a description of the Network Access in question;

(b) a reference to the location in the Dominant Provider’s Reference Offer of the relevant terms and conditions;

(c) the date on which or the period for which the Dominant Provider may enter into an Access Contract to provide the new Network Access or any amendments to the relevant terms and conditions will take effect (the “effective date”).

HA5.3 The Dominant Provider shall not enter into an Access Contract containing the terms and conditions identified in the Notice or apply any new relevant terms and conditions identified in the Notice before the effective date.

HA5.4 Publication referred to in paragraph HA5.1 shall be effected by:

(a) placing a copy of the Notice on any relevant website operated or controlled by the Dominant Provider;

(b) sending a copy of the Notice to Ofcom; and

(c) sending a copy of the Notice to any person at that person’s written request, and where the Notice identifies a modification to existing relevant terms and conditions, to every person with which the Dominant Provider has entered into an Access Contract covered by Condition HA1. The provision of such a copy of the Notice may be subject to a reasonable charge.

The conditions imposed on Kingston Communications (Hull) plc under the Communications Act 2003 as a result of the analysis of the market for the provision of traditional interface retail leased lines up to and including a bandwidth capacity of eight megabits per second in which Kingston Communications (Hull) plc has been found to have significant market power

Part 1: Definitions and Interpretation of these conditions

1. These conditions shall apply to the market for the provision of traditional interface retail leased lines up to and including a bandwidth capacity of eight megabits per second within the Hull Area.

2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the market referred to in paragraph 1 the following definitions shall apply:

   "Act" means the Communications Act 2003;

   "Dominant Provider" means Kingston Communications (Hull) plc whose registered company number is 2150618 and any Kingston Communications (Hull) plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

   "the Hull Area" means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;

   "Reference Offer" means the terms and conditions on which the Dominant Provider is willing to enter into an agreement for the provision of a retail leased line.

   "The Market" means the market set out in paragraph 1 above;

   "The Minimum Set" means all traditional interface retail leased lines up to and including a bandwidth capacity of two megabits per second; and

   "Third Party" means person.

3. Save for the purposes of paragraph 1, except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act.

4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.

5. Headings and titles shall be disregarded.

Part 2: The conditions

Condition IA1 – Requirement to provide retail leased lines

IA1.1 The Dominant Provider shall provide a retail leased line falling within the Minimum Set to every Third Party who reasonably requests in writing such a leased line.

IA1.2 The provision of retail leased lines in accordance with paragraph IA.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms, conditions and charges and on such terms, conditions and charges as Ofcom may from time to time direct.

IA1.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition IA2 – Requirement not to unduly discriminate

IA2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with the supply of a retail leased line falling within the Minimum Set.

IA2.2 In this Condition, the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

Condition IA3 – Basis of charges

IA3.1 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for a retail leased line falling within the Minimum Set is reasonably derived from the costs of provision based on a forward looking long run incremental cost approach and allowing an appropriate mark up for the recovery of common costs including an appropriate return on capital employed.

IA3.2 The Dominant Provider shall comply with any direction Ofcom may from time to time direct under this Condition.

Condition IA4 – Requirement to publish a reference offer

IA4.1 Except in so far as Ofcom may otherwise consent in writing the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

IA4.2 Subject to paragraph IA4.7 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of a retail leased line falling within the Minimum Set includes at least the following:

(a) the technical characteristics, including the physical and electrical characteristics as well as the detailed technical and performance specifications which apply at the network termination point;

(b) charges, including the initial connection charges, the periodic rental charges and other charges. Where charges are differentiated, this must be indicated;

(c) information concerning the ordering procedure;

(d) the contractual period, which includes the period which is in general laid down in the contract and the minimum contractual period which the user is obliged to accept;

(e) any refund procedure.

IA4.3 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to retail leased lines falling within the Minimum Set that it is providing as at the date that this Condition enters into force.

IA4.4 The Dominant Provider shall update and publish the Reference Offer, in relation to any amendments, or in relation to any further retail leased lines falling within the Minimum Set provided after the date that this Condition enters into force, on the same day as such amendments take effect or further retail leased lines are offered.

IA4.5 Publication referred to above shall be effected by placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider.

IA4.6 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person's written request (or such parts which have been requested).

IA4.7 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

IA4.8 The Dominant Provider shall provide retail leased lines falling within the Minimum Set at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly, unless Ofcom otherwise directs. In addition, where, in response to a particular request, the Dominant Provider considers it unreasonable to provide a retail leased line falling within the Minimum Set at the charges, terms and conditions set out in the relevant Reference Offer, it may only depart from its Reference Offer with the consent of Ofcom.

IA4.9 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition IA5 – Requirement to publish information concerning delivery and repair times

IA5.1 The Dominant Provider shall publish the following information in relation to traditional interface retail leased falling within the Minimum Set:

(a) the typical delivery period, which is the period, counted from the date when the user has made a firm request for a leased line, in which 95% of all leased lines of the same type have been put through to the customers. Such period to be established on the basis of the actual delivery periods of leased lines during a recent time interval of reasonable duration. The calculation must not include cases where late delivery periods were requested by users; and

(b) the typical repair time, which is the period, counted from the time when a failure message has been given to the responsible unit within the Dominant Provider up to the moment in which 80% of all leased lines of the same type have been re-established and in appropriate cases notified back in operation to the users. Where different classes of quality of repair are offered for the same type of leased lines, the different typical repair times shall be published.

IA5.2 Publication referred to above shall be effected by placing a copy of the information referred to in Condition IA5.1 on any relevant website operated or controlled by the Dominant Provider.

Annex E

Directions

Direction under Condition G1 imposed on British Telecommunications plc as a result of the analysis of the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second in which British Telecommunications plc has been found to have significant market power

WHEREAS:

(A) Ofcom having considered every representation duly made, and thereafter pursuant to sections 48(1) and 79 of the Act by way of publication of a notification identified the relevant services markets, has designated British Telecommunications plc as having significant market power in the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second within the United Kingdom but not including the Hull Area;

(B) this Direction concerns matters to which Condition G1 relates;

(C) for the reasons set out in the explanatory statement accompanying this Direction, Ofcom is satisfied that, in accordance with section 49(2) of the Act, this Direction is:

(i) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;
(ii) not such as to discriminate unduly against particular persons or against a particular description of persons;
(iii) proportionate to what it is intended to achieve; and
(iv) in relation to what it is intended to achieve, transparent;

(D) for the reasons set out in the explanatory statement accompanying this Direction, Ofcom is satisfied that he has acted in accordance with the relevant duties set out in sections 3 and 4 of the Act;

(E) Ofcom has published a notification of the proposed Direction in accordance with section 49 of the Act;

(F) Ofcom has considered every representation about the proposed Direction duly made to him; and

NOW, therefore, pursuant to Condition G1 Ofcom makes the following Direction:

For the purpose of interpreting this Direction the following definitions shall apply:

“Act” means the Communications Act 2003;

“The Directions” means the Directions made under Conditions G1, G3 and G7 and published on the same day as this Direction;

“Dominant Provider” means British Telecommunications plc, whose registered company number is 1800000 and any British Telecommunications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by Section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

“Hull Area” means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;

“Point of Connection” means a point at which the Dominant Provider’s Electronic Communications Network and another person’s Electronic Communications Network are connected;

“Third Party” means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network.

For the purpose of this Direction the following terms shall have the meaning as set out in the Dominant Provider’s Standard PPC Handover Agreement, as at the date of publication of this Direction, but with the necessary changes in order to ensure compliance with the Directions.

Advance Capacity Order

Advance Order Commitment

BT Retail Private Circuit

BT Serving Node

Capacity Order

Capacity Profile

Customer Sited Handover (“CSH”)

Forecast Profile

In-Span Handover (“ISH”)

Re-Designation

Qualifying BT Retail Private Circuit

The following definitions shall also apply for the purpose of this Direction:

Term	**Definition**
Acceptance of Terms	Date on which a Third Party confirms acceptance of delivery conditions and is committed to the order.
Civil Works	Works that necessitate the digging up of a street for the installation of ducts.

Committed Delivery Date	The date confirmed by the Dominant Provider as the delivery date.
Firm Offer Confirmation ("FOC")	Confirmation by the Dominant Provider in writing (by fax or e-mail) to a Third Party of the delivery conditions including price and Committed Delivery Date, after acknowledging receipt of an order for a Partial Private Circuit or Network Infrastructure from a Third Party.
FOC Acceptance Interval	The number of working days from the FOC Date until the Acceptance of Terms.
FOC Date	The date on which the Dominant Provider makes a Firm Offer Confirmation.
FOC Receipt Interval	The number of working days from the Order Request Date until the FOC Date.
Installation Date	Date of installation of a Partial Private Circuit or Network Infrastructure.
Network Infrastructure	The categories of products listed in the table contained in paragraph 49 of this Direction.
Order Request Date	Date on which a Third Party dispatches a valid Partial Private Circuit order, or Network Infrastructure order, to the Dominant Provider.
Partial Private Circuit ("PPC")	A circuit provided pursuant to the PPC Contract and in accordance with the Directions.
PPC Contract	The Dominant Provider's Standard PPC Handover Agreement as at the date of publication of this Direction.
Provisioning Interval	The number of working days from the Order Request Date until the Installation Date.
Requisite Period	The period commencing on the Order Request Date and ending on the applicable working day as set out in the tables in paragraphs 39 and 49 of this Direction.
Reduced Requisite Period	The period commencing on the Order Request Date and ending on the applicable working day as set out in the tables in paragraphs 42 and 52 of this Direction.
Subsequent Partial Private Circuit	A Partial Private Circuit which can be delivered on dedicated pre-provided Network

Infrastructure where spare capacity exists.

Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them.

The Interpretation Act 1978 shall apply as if this Direction was an Act of Parliament.

Headings and titles shall be disregarded.

The Dominant Provider shall provide Partial Private Circuits and shall do so in accordance with this Direction.

Migration

1. The 12 month contractual minimum term placed upon a Third Party, for the provision of a Partial Private Circuit which has been migrated pursuant to the PPC Contract, shall be measured from the date that the original BT Retail Private Circuit was brought into service.

2. The Dominant Provider shall not impose any deadline before which a Third Party must inform the Dominant Provider that it requires a BT Retail Private Circuit to be migrated to an equivalent Partial Private Circuit status under the PPC Contract.

3. The Dominant Provider shall allow a BT Retail Private Circuit, which fell within paragraph 1.3 of the Phase 1 PPC Direction published on 14 June 2002, to be considered under the PPC Contract as a Qualifying BT Retail Private Circuit.

4. A circuit deemed to be a Qualifying BT Retail Private Circuit under paragraphs 20 or 21 of the Phase 2 PPC Direction published on 23 December 2002 shall continue to be a Qualifying BT Retail Private Circuit.

5. Where a Third Party was not previously eligible to migrate a BT Retail Private Circuit to a Qualifying BT Retail Private Circuit, but subsequently becomes eligible to do so, the Dominant Provider shall, for 60 working days following the date on which the Third Party's circuits become eligible for migration, allow migration without the Third Party incurring any penalty (including any default or early termination charge) under its agreement with the Dominant Provider for the provision of BT Retail Private Circuits.

6. Where, at the date of publication of this Direction, the Dominant Provider offers a BT Retail Private Circuit product and does not offer an equivalent Partial Private Circuit product, but subsequently offers to provide an equivalent Partial Private Circuit product, it shall allow a Third Party to migrate to the equivalent Partial Private Circuit product without it incurring any penalty (including any default or early termination charge) under its agreement with the Dominant Provider for the provision of BT Retail Private Circuits, for a period of 60 working days following the date on which the equivalent Partial Private Circuit product is first offered by the Dominant Provider.

7. Where the Dominant Provider has taken, or will take, longer than five working days from receiving a request from a Third Party to migrate a Qualifying BT Retail Private Circuit to a Partial Private Circuit, it shall give to the Third Party a refund as set out in paragraphs 8 and 9 of this Direction.

8. Where paragraph 7 of this Direction applies, the Dominant Provider shall refund to the Third Party a sum of money equal to the difference between:
– the charge levied by the Dominant Provider for the BT Retail Private Circuit to which the request for migration relates; and
– the charge levied by the Dominant Provider for the Partial Private Circuit to which the request for migration relates.

9. The refund set out in paragraph 8 of this Direction shall cover the period from the date the Dominant Provider receives the request to migrate until the date the Dominant Provider completes the migration.

10. The Dominant Provider shall, upon a Third Party's written request, provide to the Third Party a map of its network within the United Kingdom which clearly illustrates and labels the geographic location of each Dominant Provider tier 1, tier 1.5, tier 2, and tier 3 node.

Forecasts

11. The Dominant Provider shall only require a Third Party to provide a profile of future Partial Private Circuit capacity ordering intentions over a 12 month period, on a national aggregate basis for groupings of bandwidths no narrower than the following:

- less than 1 Mbit/s; and
- 1 Mbit/s through to 2 Mbit/s.

12. The Dominant Provider shall allow a Third Party to set its Advance Capacity Order and Advance Order Commitment without any penalty by up to, 10% (by volume) below, or 20% (by volume) above, the amount stated in the Third Party's previous Capacity Profile or Forecast Profile for the period covered by the Advance Capacity Order or Advance Order Commitment.

13. The Dominant Provider shall allow a Third Party to revise periods covered by its previously stated Capacity Profile and Forecast Profile without any penalty by up to, 30% (by volume) below, or 30% (by volume) above, the amount stated in the Third Party's previous Capacity Profile or Forecast Profile, provided that paragraph 12 of this Direction does not apply.

14. In calculating any increase to an Advance Capacity Order, Advance Order Commitment, Capacity Profile or Forecast Profile pursuant to paragraphs 12 and 13 of this Direction, the outcome of the revision shall, if not an integer, be rounded up to the nearest integer.

15. In calculating any decrease to an Advance Capacity Order, Advance Order Commitment, Capacity Profile or Forecast Profile pursuant to paragraphs 12 and 13 of this Direction, the outcome of the revision shall, if not an integer, be rounded down to the nearest integer.

16. Where a Third Party places a Capacity Order at a Point of Connection for the period corresponding to that of the Advance Capacity Order, which total less than its Advance Capacity Order for the Point of Connection, the Dominant Provider may levy a charge no more than a sum equal to:

[(80% of B) – C] x £2,490

Where B is the total capacity provision by number of VC4-equivalent units specified in the relevant Advance Capacity Order in respect of each Point of Connection; and

Where C is the number of VC4-equivalents ordered during the period to which the relevant Advance Capacity Order relates in respect of each Point of Connection, but does not include cancellations of Capacity Orders made during or after the relevant Advanced Capacity Order period, but does include any Capacity Order cancelled as a result of the inability of the Dominant Provider to secure consents for CSH links.

17. Where a Third Party places orders for Partial Private Circuits below 1 Mbit for the period corresponding to that of the Advanced Order Commitment, which total less than its Advance Order Commitment for the Partial Private Circuits below 1 Mbit, the Dominant Provider may levy a charge no more than a sum equal to:

[(80% of B) – C] x £52

Where B is the total Advance Order Commitment for Private Partial Circuits below 1 Mbit; and

Where C is the number of Partial Private Circuits below 1 Mbit ordered during the period to which the Advance Order Commitment relates, but does not include cancellations of orders for Partial Private Circuits made during or after the relevant Advanced Order Commitment period, but does include any order for a Partial Private Circuit cancelled as a result of the inability of the Dominant Provider to secure consents for Partial Private Circuits.

18. Where a Third Party places orders for Partial Private Circuits from 1 Mbit through to 2 Mbit/s for the period corresponding to that of the Advanced Order Commitment, which total less than its Advance Order Commitment for Partial Private Circuits from 1 Mbit through to 2 Mbit/s, the Dominant Provider may levy a charge no more than a sum equal to:

[(80% of B) – C] x £143

Where B is the total Advance Order Commitment for Private Partial Circuits from 1 Mbit through to 2 Mbit/s; and

Where C is the number of Partial Private Circuits from 1 Mbit through to 2 Mbit/s ordered during the period to which the Advance Order Commitment relates, but does not include cancellations of orders for Partial Private Circuits made during or after the relevant Advanced Order Commitment period, but does include any order for a Partial Private Circuit cancelled as a result of the inability of Dominant Provider to secure consents for Partial Private Circuits.

19. [Paragraph not used].

20. In calculating (80% of B) in paragraphs 16 to 18 inclusive of this Direction the outcome shall, if not an integer, be rounded down to the nearest integer.

Service level agreements

General

21. The Dominant Provider shall set a Committed Delivery Date for each Partial Private Circuit or Network Infrastructure ordered from it by a Third Party.

22. For each Partial Private Circuit or Network Infrastructure ordered from the Dominant Provider by a Third Party, the Dominant Provider shall provide to a Third Party Firm Offer Confirmation in the manner set out in the definition section of this Direction.

23. The time scales and levels of fixed individual compensation payments to be payable under the service level agreement shall be those set out in the Directions, unless otherwise agreed between the Dominant Provider and a Third Party, or except to the extent that Ofcom otherwise consents.

24. Unless otherwise agreed between the Dominant Provider and a Third Party, any fixed individual compensation payment, or reimbursement pursuant to paragraph 28 of this Direction, payable by the Dominant Provider to a Third Party pursuant to the Directions shall be offset by the Dominant Provider against the money owed to it by the Third Party, on a quarterly basis. The Dominant Provider shall keep complete and accurate records of the amounts it has offset in accordance with this paragraph. Such records shall be made available by the Dominant Provider following a request by a Third Party.

25. The Dominant Provider shall not be liable to pay fixed individual compensation payments pursuant to the Directions for periods of delay which arise due to circumstances beyond its reasonable control. The Dominant Provider shall notify a Third Party as soon as reasonably practicable when such circumstances arise. All contractors or sub-contractors of whatever level, and their respective employees, servants and agents, shall for the purpose of this paragraph be treated as employees of the Dominant Provider. Major construction works shall not be considered circumstances beyond the Dominant Provider's reasonable control.

26. The Dominant Provider shall ensure that any time limits set out in this Direction shall not apply to a Third Party to the extent that periods of delay arise due to circumstances beyond its reasonable control. The Third Party shall notify the Dominant Provider as soon as reasonably practicable when such circumstances arise. All contractors or sub-contractors of whatever level, and their respective employees, servants and agents, shall for the purpose of this paragraph be treated as employees of the relevant Third Party.

27. The Dominant Provider shall, at the reasonable request of a Third Party, postpone the Committed Delivery Date of a Partial Private Circuit or Network Infrastructure if such postponement is technically and organisationally reasonable. In agreeing to such a postponement the Dominant Provider shall only charge for reasonable additional expenses it has directly incurred as a result of the postponement.

28. The Dominant Provider shall only postpone the Committed Delivery Date of a Partial Private Circuit or Network Infrastructure with the written agreement of the Third Party. The Dominant Provider shall inform the Third Party as soon as reasonably possible of any proposed postponement of the Committed Delivery Date. Where such a postponement takes place the Dominant Provider shall reimburse the Third Party for any reasonable additional cost incurred by the Third Party as a direct result of the postponement.

29. The FOC Receipt Interval shall be a maximum of:

– five working days for Partial Private Circuits of less than 2 Mbit/s; and

– eight working days for Partial Private Circuits of 2 Mbit/s and Network Infrastructure;

regardless of how many Partial Private Circuits are, or the amount of Network Infrastructure is, ordered at a particular site.

30. The Dominant Provider shall ensure that the FOC Acceptance Interval is a maximum of one working day for Partial Private Circuits of 2 Mbit/s or below and two working days for Network Infrastructure. Where a Third Party has not informed the Dominant Provider of its Acceptance of Terms or rejection of the order within five working days of the FOC Date, the Dominant Provider may cancel the Third Party's order.

31. The Dominant Provider shall keep complete and accurate records of the ordering, provision and repair of Partial Private Circuits and Network Infrastructure it provides to a Third Party.

32. Where any Partial Private Circuit or Network Infrastructure which is ordered by a Third Party is in excess of 110% (by volume), rounded up to the nearest integer where necessary, of its Advance Order Commitment or Advance Capacity Order, the applicable Requisite Period set out in the tables in paragraphs 39 and 49 of this Direction shall be extended by 50% and rounded up to the nearest working day, where necessary, for the purposes of calculating fixed individual compensation payments.

Unliquidated damages

33. Nothing in the PPC Contract, as amended by the Directions, shall prevent a Third Party from bringing a claim against the Dominant Provider for unliquidated damages over and above the fixed individual compensation payments set out in the Directions.

Partial Private Circuits

Quick quote and high bandwidth quote on line

34. The Dominant Provider shall provide to a Third Party, upon written request, the necessary wholesale network and pricing information to enable the Third Party to obtain the same information for Partial Private Circuits that is available to the Dominant Provider's retail arm, for its "Quick Quote" quote facilities.

Concurrency of Partial Private Circuit and ISH link and CSH link delivery times

35. Where a Third Party has ordered a Partial Private Circuit, and the operation of the circuit requires the provision of an ISH link or CSH link, the Dominant Provider shall ensure that the delivery dates of the Partial Private Circuit and the CSH link or ISH link are the same.

Expedited orders

36. Upon a Third Party's written request, the Dominant Provider shall make reasonable endeavours to set a Committed Delivery Date for Partial Private Circuits within 50% of the relevant Requisite Period set out in the table in paragraph 39 of this Direction, rounded up to the nearest working day where necessary, for at least 15% (by volume) of a Third Party's previous month's order. The Third Party shall inform the Dominant Provider which particular Partial Private Circuits it shall endeavour to

be expedited pursuant to this paragraph. This paragraph shall only apply to the delivery of Partial Private Circuits of 2 Mbit/s or less. This paragraph shall not apply to Partial Private Circuits which exceed 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Order Commitment.

37. Paragraph 46 of this Direction does not apply to orders of Partial Private Circuits made pursuant to paragraph 36 of this Direction.

Time scales for fixed individual compensation

38. Where the Committed Delivery Date for Partial Private Circuits is set by the Dominant Provider later than the relevant Requisite Period (as set out in the table in paragraph 39 of this Direction) without the agreement of a Third Party, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 5% of the monthly rental for the Private Partial Circuit delayed, per working day or part of a working day in respect of the period commencing immediately on the expiry of the relevant Requisite Period and expiring on the Installation Date.

39. Where the Committed Delivery Date for Partial Private Circuits is set by the Dominant Provider either, later than the relevant Requisite Period (as set out in the table below) but with the agreement of a Third Party, or within the Requisite Period, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 5% of the monthly rental for the Private Partial Circuit delayed, per working day or part of a working day in respect of the period commencing immediately on the working day following the Committed Delivery Date and expiring on the Installation Date.

Bandwidth of Partial Private Circuit	**Requisite Period**
64 kbit/s	10 working days
128 kbit/s to 256 kbit/s delivered over copper	10 working days
128 kbit/s to 256 kbit/s delivered over fibre	30 working days
320 kbit/s to 960 kbit/s	30 working days
1 Mbit/s	30 working days
2 Mbit/s	30 working days
Subsequent Partial Private Circuit of 2 Mbit/s	10 working days

Third Party's ability to cancel order

40. Where the Provisioning Interval exceeds the relevant Requisite Period set out in the table in paragraph 39 of this Direction, a Third Party shall be allowed to cancel its order for a Partial Private Circuit after the Cancellation Threshold (as set out in the table below) has expired. The Cancellation Threshold shall commence upon the expiry of the relevant Requisite Period set out in the table in paragraph 39 of this Direction. The Requisite Periods in the table in paragraph 39 shall apply, for the purposes of this paragraph, regardless of whether there is a delay in delivery of a

Partial Private Circuit which is due to circumstances beyond the Dominant Provider's reasonable control but not including delay by a Third Party.

Requisite Period set out in the table in paragraph 39 of this Direction	Cancellation Threshold
10 working days	10 working days
30 working days	20 working days

41. Where a Third Party cancels a Partial Private Circuit pursuant to paragraph 40 of this Direction, the Dominant Provider shall not charge the Third Party for the circuit and shall not charge for cancelling the circuit. The Dominant Provider shall also be liable to pay the Third Party any fixed individual compensation payments accumulated pursuant to the PPC Contract as amended by the Directions.

Reduced Requisite Periods for Partial Private Circuits

42. The Dominant Provider shall ensure that for at least 70% (by volume) of Partial Private Circuits of a particular bandwidth delivered by the Dominant Party to a Third Party within a three month period (such period not to be calculated on a rolling basis) the Committed Delivery Date is set within the relevant Reduced Requisite Period (as set out in the table below).

Bandwidth of Partial Private Circuit	**Reduced Requisite Period**
128 kbit/s to 256 kbit/s delivered over fibre	20 working days
320 kbit/s to 960 kbit/s	20 working days
1 Mbit/s	20 working days
2 Mbit/s	20 working days

43. In calculating the 70% (by volume) of Partial Private Circuits to which paragraph 42 of this Direction applies the following shall not be included:

- Partial Private Circuits of 64 kbit/s;

- Partial Private Circuits of 128 kbit/s to 256 kbit/s delivered over copper;

- Subsequent Private Partial Circuits of 2Mbit/s;

- Partial Private Circuit orders to which paragraph 36 of this Direction applies; and

- Partial Private Circuits which exceed 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Order Commitment.

44. The Reduced Requisite Periods set out in the table in paragraph 42 of this Direction apply only if, in the previous three month reporting period (such period not to be calculated on a rolling basis), a Third Party has ordered from the Dominant Provider at least ten Partial Private Circuits of the same bandwidth where such Partial Private Circuits are 2 Mbit/s or less.

45. For the purposes of this Direction, in determining whether 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Order Commitment has been exceeded, the calculation shall be at a national level for each

individual Partial Private Circuit bandwidth category and applied in the order in which the Partial Private Circuits were ordered by the Third Party.

Multiple orders

46. Where the Dominant Provider receives an order for more than 10 Partial Private Circuits at one site from a Third Party, the relevant Requisite Period applicable to determine whether the Dominant Provider shall pay fixed individual compensation as set out in paragraphs 38 and 39 of this Direction, shall be the relevant Requisite Period set out in the table in paragraph 39 of this Direction increased by a maximum of 50%. The Dominant Provider shall inform the Third Party of the revised time scales as soon as reasonably practicable.

Availability of service

47. When total loss of service (i.e. total loss of service for one minute or longer) occurs three or more times, within a 12 month period, to a Partial Private Circuit, the Third Party shall not be liable to the Dominant Provider for the monthly rental in any subsequent month where total loss of failure occurs to the Partial Private Circuit, until such time as 12 months have passed and the Partial Private Circuit has not suffered total loss of service. Occurrences of total loss of service which result in the Dominant Provider being liable to pay fixed individual compensation pursuant to paragraphs 58, 59 and 61 of this Direction, shall not be considered as an occurrence of a total loss of service for the purposes of this paragraph.

Network Infrastructure

Time scales for fixed individual compensation

48. Where the Committed Delivery Date for Network Infrastructure is set by the Dominant Provider later than the relevant Requisite Period (as set out in the table in paragraph 49 of this Direction) without the agreement of a Third Party, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 0.3% of the connection fee for the Network Infrastructure, per working day, or part of a working day, in respect of the period commencing immediately on the expiry of the relevant Requisite Period and expiring on the Installation Date,

49. Where the Committed Delivery Date for Network Infrastructure is set by the Dominant Provider either, later than the relevant Requisite Period (as set out in the table below) but with the agreement of a Third Party, or within the Requisite Period, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 0.3% of the connection fee for the Network Infrastructure, in respect of the period commencing immediately on the working day following the Committed Delivery Date and expiring on the Installation Date.

Network Infrastructure	**Requisite Period (where the Dominant Provider needs to carry out Civil Works)**	**Requisite Period (where the Dominant Provider does not need to carry out Civil Works)**
ISH links	110 working days	85 working days
CSH links	110 working days	85 working days

ISH links – provision of new multiplexor on an existing Point of Connection	Not applicable	60 working days
ISH links - provision of extra STM-1 interface on existing STM-1 ISH SMA4 multiplexor	Not applicable	60 working Days
CSH links - provision of new multiplexor on existing Point of Connection	Not applicable	60 working Days
CSH links requiring only provision of new tributary card on existing multiplexor	Not applicable	25 working Days

Third Party's ability to cancel order

50. Where the Provisioning Interval exceeds the relevant Requisite Period set out in the table in paragraph 49 of this Direction, a Third Party shall be allowed to cancel its order for Network Infrastructure after the Cancellation Threshold (as set out in the table below) has expired. The Cancellation Threshold shall commence upon the expiry of the relevant Requisite Period set out in the table in paragraph 49 of this Direction. The Requisite periods in the table in paragraph 49 shall apply, for the purposes of this paragraph, regardless of whether there is a delay in delivery of Network Infrastructure which is due to circumstances beyond the Dominant Provider's reasonable control but not including delay by a Third Party.

Requisite Period set out in the table in paragraph 49 of this Direction	**Cancellation Threshold**
21 to 40 working days	20 working days
41 to 60 working days	25 working days
61 to 90 working days	30 working days
Over 90 working days	40 working days

51. Where a Third Party cancels Network Infrastructure pursuant to paragraph 50 of this Direction, the Dominant Provider shall not charge the Third Party for the Network Infrastructure and shall not charge for cancelling the Network Infrastructure. The Dominant Provider shall also be liable to pay the Third Party any fixed compensation payments accumulated pursuant to the PPC Contract as amended by the Directions.

Reduced Requisite periods for Network Infrastructure

52. The Dominant Provider shall ensure that for at least 70% (by volume) of the total VC4-equivalents of Network Infrastructure delivered by it to a Third Party during a three month period (such period not to be calculated on a rolling basis) the Committed Delivery Date is set within the relevant Reduced Requisite Period (as set out in the table below).

Network Infrastructure	Reduced Requisite Period (where the Dominant Provider needs to carry out Civil Works)	Reduced Requisite Period where the Dominant Provider does not need to carry out Civil Works)
ISH lnks	75 working days	60 working days
CSH links	75 working days	60 working days
ISH links - provision of new multiplexor on an existing Point of Connection	Not applicable	40 working days
ISH links - provision of extra STM-1 interface on existing STM-1 ISH SMA4 multiplexor	Not applicable	40 working days
CSH links - provision of new multiplexor on existing Point of Connection	Not applicable	40 working days
CSH links requiring only provision of new tributary card on existing multiplexor	Not applicable	20 working days

53. In calculating the 70% (by volume) of the total VC4-equivalents of Network Infrastructure to which paragraph 52 of this Direction applies the following shall not be included:

- Network Infrastructure which exceeds 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Capacity Order.

54. The Reduced Requisite Periods set out in the table in paragraph 52 of this Direction only apply if, in the previous three month reporting period (such period not to be calculated on a rolling basis) a Third Party has ordered from the Dominant Provider at least 2 VC4-equivalents of Network Infrastructure. For the purposes of this paragraph the first reporting period of three months shall be the first such reporting period falling after 30 working days following the date of publication of this Direction.

55. For the purposes of this Direction, in determining whether 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Capacity Order has been exceeded, the calculation shall be made using VC4-equivalents at each Point of Connection applied in the order in which the Network Infrastructure was ordered by the Third Party.

Repair of Partial Private Circuits and Network Infrastructure

56. Where the Dominant Provider offers to a Third Party Regular Care and Enhanced Care for Partial Private Circuits and Network Infrastructure it shall do so at a cost orientated price and as set out in the table below:

	Operational hours	**Repair/response time**	**Extras**
Regular Care	Normal working hours	Response within one working day of receipt of a fault report by a Third Party. Repair within two working days of receipt of a fault report by a Third Party.	If a fault is not remedied within two working days of receipt of a fault report by a Third Party, the Dominant Provider shall call the Third Party to report progress being made to remedy the fault.
Enhanced Care	24 hours per day, 7 days per week (including public and bank holidays).	Response within four hours of receipt of a fault report from a Third Party. Repair within five hours of receipt of a fault report by a Third Party.	If a fault is not remedied within five hours of receipt of a fault report by a Third Party, the Dominant Provider shall contact the Third Party to report progress being made to remedy the fault.

57. Receipt by the Dominant Provider from a Third Party of a report of a fault concerning a Partial Private Circuit or Network Infrastructure, shall be acknowledged by the Dominant Provider to the Third Party within one hour.

58. Where the Dominant Provider fails to repair a Partial Private Circuit within the time limits set out in the table in paragraph 56 of this Direction it shall pay to the Third Party a fixed individual compensation payment as set out in paragraphs 59 to 63 inclusive of this Direction in respect of the period commencing on the expiry of the applicable repair time set out in the table in paragraph 56 and expiring at the time the Partial Private Circuit or Network Infrastructure is repaired.

59. Where the Third Party has ordered the Dominant Provider's Regular Care for Partial Private Circuits, the Dominant Provider shall pay the Third Party an amount equal to 100% of the monthly rental payable for the type of Partial Private Circuit being repaired per working day, or part of a working day, of delay is repair.

60. Where the Third Party has ordered the Dominant Provider's Regular Care for Network Infrastructure, the Dominant Provider shall pay the Third Party an amount equal to 1% of the connection fee for the type of Network Infrastructure being repaired per working day, or part of a working day, of delay in repair.

61. Where the Third Party has ordered the Dominant Provider's Enhanced Care for Partial Private Circuits, the Dominant Provider shall pay the Third Party an amount equal to 15% of the monthly rental payable for the type of Partial Private Circuit being repaired per hour, or part of an hour, of delay in repair.

62. Where the Third Party has ordered the Dominant Provider's Enhanced Care for Network Infrastructure, the Dominant Provider shall pay the Third Party an amount equal to 0.15% of the connection fee for the type of Network Infrastructure being repaired per hour, or part of an hour, of delay in repair.

63. The Dominant Provider shall not be liable to pay fixed individual compensation pursuant to paragraphs 60 and 62 of this Direction where it is also liable for fixed individual compensation pursuant to paragraphs 59 and 61 of this Direction where the Partial Private Circuit is being provided using the Network Infrastructure which is being repaired.

64. The Dominant Provider shall attend, and invite Third Parties to regular meetings to review the level of service provided by it in relation to Partial Private Circuits and related Network Infrastructure.

Change of speed or interface

65. The Dominant Provider shall offer to provide within a reasonable period of a Third Party's written request, the ability to alter the speed or interface of a Partial Private Circuit.

66. The Dominant Provider shall ensure that it provides to a Third Party a Partial Private Circuit variant for the services to which paragraph 65 of this Direction applies, which are equivalent to the services it currently provides on a retail basis for retail leased lines.

STM-1, ISH and CSH handover

67. The Dominant Provider shall offer to provide within a reasonable period of a Third Party's written request for a Synchronous Transfer Mode–1 ("STM-1"), an interface using an ISH link or CSH link; and handover pursuant to paragraph 68 of this Direction. Such link or handover shall be provided by way of network connecting apparatus capable of providing no more than the STM-1 capacity ordered by the Third Party.

68. The Dominant Provider shall within a reasonable period of a Third Party's written request, handover in a footway jointing chamber for Partial Private Circuits at a reasonable point nominated by the Third Party. The footway jointing chamber shall be located in the same Dominant Provider local serving exchange area as the Dominant Provider Serving Node to which the Partial Private Circuits being handed over are connected.

Equipment re-use

69. Paragraph 70 of this Direction shall only apply to the re-use of Plesiochronous Digital Hierarchy ("PDH") and Synchronous Digital Hierarchy ("SDH") equipment situated at a third party site ("Equipment").

70. The Dominant Provider may reject a request by a Third Party for re-use of PDH Equipment if such re-use would be incompatible with its network. Any such rejection by the Dominant Provider shall be made within 10 working days of a request by the Third Party and fully justified in writing to the requesting Third Party at the same time as the request is rejected.

Other Circuits

71. Unless Ofcom otherwise agrees, the Dominant Provider shall, offer to provide Partial Private Circuit with no single point of failure, within a reasonable period of a Third Party's request.

72. The Dominant Provider shall offer to provide, within a reasonable period of a Third Party's written request, a Partial Private Circuit which is dual pathed and diversely routed from a third party customer's premises to a Third Party's single Point of Connection.

73. The Dominant Provider shall offer to provide to a Third Party, within a reasonable period of the Third Party's written request, transparent transmission capacity at all bandwidths up to and including a bandwidth capacity of two megabits per second between a radio base station and a Point of Connection with a Third Party's electronic communications network connected to the nearest appropriate digital cross connection node.

74. The Dominant Provider shall provide to the Third Party the product set out in paragraph 73 of this Direction on terms and conditions which, where appropriate, are comparable to the provisions relating to service level agreements, forecasting penalties and migration set out in paragraphs 1 to 64 of this Direction and the Direction made under Condition G3 and published on the same day as this Direction.

LLU Backhaul

75. The Dominant Provider shall offer to enter into an agreement with any Third Party, within a reasonable period of the Third Party's written request, LLU Backhaul Services (as set out in the Annex to this Direction) on reasonable terms. Without prejudice to the generality of this requirement, terms will not be considered reasonable if they fail to include a Service Level Agreement ("SLA") such as could be expected to be negotiated in a competitive market.

76. The agreement for the supply of LLU Backhaul Services by the Dominant Provider shall include an SLA relating to the supply of such a product. This SLA shall include provision for the reasonable payment of fixed compensation by the Dominant Provider to a Third Party in cases where the Dominant Provider fails to fulfill its obligations under the SLA relating to the supply of LLU Backhaul Services.

77. The Dominant Provider shall implement this Direction within 10 working days of its publication.

78. The Annex to this Direction shall form part of the Direction.

79. This Direction shall take effect on the day it is published.

Jim Niblett

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002
24 June 2004

Annex

(A) The provision of transparent transmission capacity by the Dominant Provider, at all bandwidths between two megabits per second and eight megabits per second (inclusive) between a Local Loop Unbundling Third Party's ('LLUTP's') equipment at a Main Distribution Frame ('MDF') site of the Dominant Provider's and a Point of Connection with a Third Party's electronic communications network connected to the nearest appropriate Dominant Provider Synchronous Digital Hierarchy ('SDH') node to the customer. Such node could be a Tier 3, Tier 2, Tier 1.5 or Tier 1 node.

(B) The provision of transparent transmission capacity by the Dominant Provider, at all bandwidths between two megabits per second and eight megabits per second (inclusive) between a LLUTP's equipment at an MDF site of the Dominant Provider and a Point of Connection with a Third Party's electronic communications network connected to the nearest appropriate Dominant Provider SDH node to the customer which is superior in the hierarchy to the node defined in (A) above, where such node exists. Such node could be a Tier 2, Tier 1.5 or Tier 1 node.

(C) The provision of transparent transmission capacity by the Dominant Provider, at all bandwidths between two megabits per second and eight megabits per second (inclusive) between a LLUTP's equipment at an MDF site of the Dominant Provider and a Point of Connection with a Third Party's electronic communications network connected to the nearest appropriate Dominant Provider SDH node to the customer which is superior in the hierarchy to the node defined in (B) above, where such node exists, and which could be a Tier 1.5 or Tier 1 node.

(D) The provision of transparent transmission capacity by the Dominant Provider, at all bandwidths between two megabits per second and eight megabits per second (inclusive) between a LLUTP's equipment at an MDF site of the Dominant Provider and a Point of Connection with a Third Party's electronic communications network connected to the nearest appropriate Dominant Provider SDH node to the customer which is superior in the hierarchy to the node defined in (C) above, where such node exists, and which is a Tier 1 node.

(E) The provision of transparent transmission capacity by the Dominant Provider, at all bandwidths between two megabits per second and eight megabits per second (inclusive) between a LLUTP's equipment at a MDF site of the Dominant Provider and a Point of Connection with a Third Party's electronic communications network connected to any Dominant Provider SDH Tier 1 node.

Direction under Condition G3 imposed on British Telecommunications plc as a result of the analysis of the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second in which British Telecommunications plc has been found to have significant market power

WHEREAS:

(A) Ofcom having considered every representation duly made, and thereafter pursuant to sections 48(1) and 79 of the Act by way of publication of a notification identified the relevant services markets, has designated British Telecommunications plc as having significant market power in the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second within the United Kingdom but not including the Hull Area;

(B) this Direction concerns matters to which Condition G3 relates;

(C) for the reasons set out in the explanatory statement accompanying this Direction, Ofcom is satisfied that, in accordance with section 49(2) of the Act, this Direction is:

(i) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;
(ii) not such as to discriminate unduly against particular persons or against a particular description of persons;
(iii) proportionate to what it is intended to achieve; and
(iv) in relation to what it is intended to achieve, transparent;

(D) for the reasons set out in the explanatory statement accompanying this Direction, Ofcom is satisfied that he has acted in accordance with the relevant duties set out in sections 3 and 4 of the Act;

(E) Ofcom has published a notification of the proposed Direction in accordance with section 49 of the Act;

(F) Ofcom has considered every representation about the proposed Direction duly made to him; and

NOW, therefore, pursuant to Condition G3 Ofcom makes the following Direction:

For the purpose of interpreting this Direction the definitions set out in the Direction made under Condition G1 and published on the same day as this Direction shall apply.

Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them.

The Interpretation Act 1978 shall apply as if this Direction was an Act of Parliament.

Headings and titles shall be disregarded.

The Dominant Provider shall provide Partial Private Circuits in accordance with this Direction.

Charges for capacity on third party customer infrastructure

1. Where a Third Party already has a Partial Private Circuit connected to third party customer infrastructure which was in situ before 1 August 2001, and has a Subsequent Partial Private Circuit connected to the same third party customer infrastructure the Dominant Provider shall charge no more than the amount set out in the table below for such a connection.

Bandwidth	Charge (£)
2 Mbit/s	2,275

Charge for change of speed or interface

2. The Dominant Provider shall charge no more than £94 for changing the speed or interface of a 1 Mbit Partial Private Circuit.

Charges for reclassification of BT Retail Private Circuits

3. Where a BT Retail Private Circuit is migrated to a Partial Private Circuit in accordance with the PPC Contract, as amended by the Directions, it shall charge the Third Party no more than £37 per migrated circuit as a reclassification charge.

Charges for failed migration orders

4. Where the Dominant Provider informs a Third Party that a request for migration of a BT Retail Private Circuit to a Partial Private Circuit is invalid in accordance with the PPC Contract, as amended by the Directions, it shall charge the Third Party no more than £36 per request rejected.

Infrastructure tariff conversion charges

5. The Dominant Provider's infrastructure tariff conversion charges to a Third Party shall be no more than the amounts set out in the Annex of this Direction and calculated in accordance with the Annex of this Direction.

6. The Dominant Provider may also levy an infrastructure tariff conversion charge, in accordance with the Annex of this Direction, on a BT Retail Private Circuit which was in situ on the date that this Direction enters into force and being provided to a Third Party which at the time was a non-schedule 2 public operator which was running a telecommunications system under a telecommunications licence, but which is subsequently provided to a Third Party after the date of publication of this Direction. This paragraph shall apply whether or not the non-schedule 2 public operator which was running a telecommunications system under a telecommunications licence, and the Third Party, are the same person.

Equipment re-use

7. Paragraphs 8 to 12 inclusive of this Direction shall only apply to the re-use of Plesiochronous Digital Hierarchy ("PDH") and Synchronous Digital Hierarchy ("SDH") equipment situated at a third party site ("Equipment").

8. Where a Third Party requests the Dominant Provider to provide Equipment at a specific site, and the Third Party has already used the Equipment at the site, the Dominant Provider shall allow the Third Party to re-use the Equipment at that site, subject to paragraph 70 of the Direction made under Condition G1 and published on the same day as this Direction, without charge, subject to paragraph 11 of this Direction, or at any other third party site without charge, subject to paragraphs 10 and 11 of this Direction, for as long as the Equipment remains available for use.

9. Where a Third Party requests the Dominant Provider to provide Equipment at a specific site, and the Third Party has not used the Equipment at the site, the Dominant Provider shall allow the Third Party to re-use the Equipment at the site, subject to paragraph 70 of the Direction made under Condition G1 and published on the same day as this Direction, and shall charge the Third Party a discounted charge equivalent to its remaining value. Such discounted charge shall be cost orientated and shall be passed on to the Third Party which had previously used the Equipment at that site, less any reasonable costs incurred by the Dominant Provider in administrating a system necessary to implement paragraphs 7 to 12 inclusive of this Direction and paragraph 70 of the Direction made under Condition G1 and published on the same day as this Direction.

10. The Dominant Provider shall only charge a Third Party for testing SDH Equipment before such equipment is re-used, where such infrastructure is to be re-located. Such charge shall be cost orientated. In addition the Dominant Provider may levy a cost orientated charge for re-locating SDH Equipment.

11. The Dominant Provider may levy a cost orientated charge for testing PDH Partial Private Circuit Equipment before such infrastructure is re-used. In addition The Dominant Provider may levy a cost orientated charge for re-locating PDH Equipment.

12. The charge contained in paragraph 9 of this Direction shall:
- reflect all the incremental costs necessarily and efficiently incurred;
- reflect the value of the Equipment being re-used; and
- be non-discriminatory.

Cost orientation of LLU Backhaul prices

13. The Licensee shall ensure that its charges for LLU Backhaul Services (as set out in the Annex to the Direction made under Condition G1 and published on the same day as this Direction) are consistent with its charges for those elements which are common to LLU Backhaul Services and Partial Private circuits.

14. The Dominant Provider shall implement this Direction within 10 working days of its publication.

15. This Direction shall take effect on the day it is published.

16. The Annex to this Direction shall form part of the Direction.

Jim Niblett

A person authorised by Ofcom under paragraph 18 of the Schedule to the

Office of Communications Act 2002
24 June 2004

Annex – Infrastructure tariff conversion charges

Charges for BT Retail Private Circuits below 1 Mbit circuits which were installed up to and including 31 December 2001

Time between the date that the BT Retail Private Circuit was installed, and an Operator requested such circuit to be migrated to a Partial Private Circuit.	Charge (£)
Up to 1 month	189
2 months or more	0

Charges for 1 Mbit BT Retail Private Circuits which were installed up to and including 31 December 2001

Time between the date that the BT Retail Private Circuit was installed, and an Operator requested such circuit to be migrated to a Partial Private Circuit.	Charge (£)
Up to 1 month	2621
2 months	2369
3 months	2113
4 months	1855
5 months	1594
6 months	1330
7 months	1064
8 months	795
9 months	522
10 months	247
11 months or more	0

Charges for 2 Mbit/s for BT Retail Private Circuits which were installed up to and including 31 December 2001

Time between the date that the BT Retail Private Circuit was installed, and an Operator requested such circuit to be migrated to a Partial Private Circuit.	Charge (£)
Up to 1 month, or more	0

Charges for BT Retail Private Circuits below 1 Mbit installed after 31 December 2001

Time between the date that the BT Retail Private Circuit was installed, and an Operator requested such circuit to be migrated to a Partial Private Circuit.	Charge (£)
Up to 1 month	270
2 months	45
3 months or more	0

Charges for 1 Mbit for BT Retail Private Circuits installed after 31 December 2001

Time between the date that the BT Retail Private Circuit was installed, and an Operator requested such circuit to be migrated to a Partial Private Circuit.	Charge (£)
Up to 1 month, or more	0

Charges for 2 Mbit/s for BT Retail Private Circuits installed after 31 December 2001

Time between the date that the BT Retail Private Circuit was installed, and an Operator requested such circuit to be migrated to a Partial Private Circuit.	Charge (£)
Up to 1 month, or more	0

Direction under Condition G7 imposed on British Telecommunications plc as a result of the analysis of the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second in which British Telecommunications plc has been found to have significant market power

WHEREAS:

(A) Ofcom having considered every representation duly made, and thereafter pursuant to sections 48(1) and 79 of the Act by way of publication of a notification identified the relevant services markets, has designated British Telecommunications plc as having significant market power in the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second within the United Kingdom but not including the Hull Area;

(B) this Direction concerns matters to which Condition G7 relates;

(C) for the reasons set out in the explanatory statement accompanying this Direction, Ofcom is satisfied that, in accordance with section 49(2) of the Act, this Direction is:

(i) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;
(ii) not such as to discriminate unduly against particular persons or against a particular description of persons;
(iii) proportionate to what it is intended to achieve; and
(iv) in relation to what it is intended to achieve, transparent;

(D) for the reasons set out in the explanatory statement accompanying this Direction, Ofcom is satisfied that he has acted in accordance with the relevant duties set out in sections 3 and 4 of the Act;

(E) Ofcom has published a notification of the proposed Direction in accordance with section 49 of the Act;

(F) Ofcom has considered every representation about the proposed Direction duly made to him; and

NOW, therefore, pursuant to Condition G7 Ofcom makes the following Direction:

For the purpose of interpreting this Direction the definitions set out in the Direction made under Condition G1 and published on the same day as this Direction shall apply.

Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them.

The Interpretation Act 1978 shall apply as if this Direction was an Act of Parliament.

Headings and titles shall be disregarded.

1. The Dominant Provider shall, on a quarterly basis, publish the following information for each Third Party to whom it provides Partial Private Circuits on an individual and anonymous basis; and on an aggregated basis with respect to all such Third Parties on an anonymous basis:

- its performance with respect to Committed Delivery Dates, Requisite Periods, Reduced Requisite Periods, FOC Receipt Intervals, repair and availability of service;

- a list of incidences of circumstances beyond the reasonable control of the Dominant Provider, split by reason;

- the percentage of each Third Party’s previous month's orders having Committed Delivery Dates quoted within 50% of the Requisite Periods set out in the table in paragraph 39 of the Direction made under Condition G1 and published on the same day as this Direction;

- the number and percentage of instances where each Third Party exceeds the applicable FOC Acceptance Interval, set out by bandwidth, for Partial Private Circuits;

- the number and percentage of instances where each Third Party exceeds the applicable FOC Acceptance Interval for Network Infrastructure;

- the average amount by which each Third Party exceeds the applicable FOC Acceptance Interval, set out by bandwidth, for Partial Private Circuits;

- the average amount by which each Third Party exceeds the applicable FOC Acceptance Interval for Network Infrastructure;

- the number and percentage of orders for Partial Private Circuits rejected by the Dominant Provider;

- the number and percentage of orders for Network Infrastructure rejected by the Dominant Provider;

- the mean response time to fault reports relating to Partial Private Circuits and Network Infrastructure sent to the Dominant Provider by Third Party; and

- new installation fault report rate relating to Partial Private Circuits.

The aggregated reports shall include the Dominant Provider's performance in respect of provision to its retail arm.

2. The Dominant Provider shall ensure that its monitoring systems are sufficient to enable it, at all times, to be capable, following a written request by Ofcom, to publish the following information for each Third Party to whom it provides Partial Private Circuits on an individual and anonymous basis; and on an aggregated basis with respect to all such Third Parties on an anonymous basis:

- list of reasons for rejections of orders;

- list of reasons for faults; and

- list of reasons for any Committed Delivery Dates beginning 10 working days later than the relevant Requisite Period.

The aggregated reports shall include the Dominant Provider's performance in respect of provision to its retail arm.

3. Nothing in this Direction shall require the Dominant Provider to publish confidential information relating to its business or that of a Third Party.

4. The information set out in paragraph 1 above shall be first published within three months of this Direction taking effect and every three months thereafter.

5. Publication referred to in paragraph 1 above shall be effected by:

(a) for information on an aggregated basis, by placing a copy of the information on any relevant website operated or controlled by the Dominant Provider;

(b) for information on an individual basis, by electronic mailing the information to the relevant Third Party; and

(c) sending a copy of the information to Ofcom.

6. This Direction shall take effect on the day it is published.

Jim Niblett

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002
24 June 2004

Direction under Condition GG1 imposed on British Telecommunications plc as a result of the analysis of the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including one hundred and fifty five megabits per second in which British Telecommunications plc has been found to have significant market power

WHEREAS:

(A) Ofcom having considered every representation duly made, and thereafter pursuant to sections 48(1) and 79 of the Act by way of publication of a notification identified the relevant services markets, has designated British Telecommunications plc as having significant market power in the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including one hundred and fifty five megabits per second within the United Kingdom but not including the Hull Area;

(B) this Direction concerns matters to which Condition GG1 relates;

(C) for the reasons set out in the explanatory statement accompanying this Direction, Ofcom is satisfied that, in accordance with section 49(2) of the Act, this Direction is:

(i) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;
(ii) not such as to discriminate unduly against particular persons or against a particular description of persons;
(iii) proportionate to what it is intended to achieve; and
(iv) in relation to what it is intended to achieve, transparent;

(D) for the reasons set out in the explanatory statement accompanying this Direction, Ofcom is satisfied that he has acted in accordance with the relevant duties set out in sections 3 and 4 of the Act;

(E) Ofcom has published a notification of the proposed Direction in accordance with section 49 of the Act;

(F) Ofcom has considered every representation about the proposed Direction duly made to him; and

NOW, therefore, pursuant to Condition GG1 Ofcom makes the following Direction:

For the purpose of interpreting this Direction the following definitions shall apply:

“Act” means the Communications Act 2003;

“The Directions” means the Directions made under Conditions GG1, GG3 and GG7 and published on the same day as this Direction;

"Dominant Provider" means British Telecommunications plc, whose registered company number is 1800000 and any British Telecommunications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by Section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

"Hull Area" means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;

"Point of Connection" means a point at which the Dominant Provider's Electronic Communications Network and another person's Electronic Communications Network are connected; and

"Third Party" means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network.

For the purpose of this Direction the following terms shall have the meaning as set out in the Dominant Provider's Standard PPC Handover Agreement, as at the date of publication of this Direction, but with the necessary changes in order to ensure compliance with the Directions.

Advance Capacity Order

Advance Order Commitment

BT Retail Private Circuit

BT Serving Node

Capacity Order

Capacity Profile

Customer Sited Handover ("CSH")

Forecast Profile

In-Span Handover ("ISH")

Re-Designation

Qualifying BT Retail Private Circuit

The following definitions shall also apply for the purpose of this Direction:

Term	**Definition**
Acceptance of Terms	Date on which a Third Party confirms acceptance of delivery conditions and is committed to the order.
Civil Works	Works that necessitate the digging up of a street for the installation of ducts.

Committed Delivery Date	The date confirmed by the Dominant Provider as the delivery date.
Firm Offer Confirmation (“FOC”)	Confirmation by the Dominant Provider in writing (by fax or e-mail) to a Third Party of the delivery conditions including price and Committed Delivery Date, after acknowledging receipt of an order for a Partial Private Circuit or Network Infrastructure from a Third Party.
FOC Acceptance Interval	The number of working days from the FOC Date until the Acceptance of Terms.
FOC Date	The date on which the Dominant Provider makes a Firm Offer Confirmation.
FOC Receipt Interval	The number of working days from the Order Request Date until the FOC Date.
Installation Date	Date of installation of a Partial Private Circuit or Network Infrastructure.
Network Infrastructure	The categories of products listed in the table contained in paragraph 49 of this Direction.
Order Request Date	Date on which a Third Party dispatches a valid Partial Private Circuit order, or Network Infrastructure order, to the Dominant Provider.
Partial Private Circuit (“PPC”)	A circuit provided pursuant to the PPC Contract and in accordance with the Directions.
PPC Contract	The Dominant Provider's Standard PPC Handover Agreement as at the date of publication of this Direction.
Provisioning Interval	The number of working days from the Order Request Date until the Installation Date.
Requisite Period	The period commencing on the Order Request Date and ending on the applicable working day as set out in the tables in paragraphs 39 and 49 of this Direction.
Reduced Requisite Period	The period commencing on the Order Request Date and ending on the applicable working day as set out in the tables in paragraphs 42 and 52 of this Direction.

Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them.

The Interpretation Act 1978 shall apply as if this Direction was an Act of Parliament.

Headings and titles shall be disregarded.

The Dominant Provider shall provide Partial Private Circuits and shall do so in accordance with this Direction.

Migration

1. The 12 month contractual minimum term placed upon a Third Party, for the provision of a Partial Private Circuit which has been migrated pursuant to the PPC Contract, shall be measured from the date that the original BT Retail Private Circuit was brought into service.

2. The Dominant Provider shall not impose any deadline before which a Third Party must inform the Dominant Provider that it requires a BT Retail Private Circuit to be migrated to an equivalent Partial Private Circuit status under the PPC Contract.

3. The Dominant Provider shall allow a BT Retail Private Circuit, which fell within paragraph 1.3 of the Phase 1 PPC Direction published on 14 June 2002, to be considered under the PPC Contract as a Qualifying BT Retail Private Circuit.

4. A circuit deemed to be a Qualifying BT Retail Private Circuit under paragraphs 20 or 21 of the Phase 2 PPC Direction published on 23 December 2002 shall continue to be a Qualifying BT Retail Private Circuit.

5. Where a Third Party was not previously eligible to migrate a BT Retail Private Circuit to a Qualifying BT Retail Private Circuit, but subsequently becomes eligible to do so, the Dominant Provider shall, for 60 working days following the date on which the Third Party's circuits become eligible for migration, allow migration without the Third Party incurring any penalty (including any default or early termination charge) under its agreement with the Dominant Provider for the provision of BT Retail Private Circuits.

6. Where, at the date of publication of this Direction, the Dominant Provider offers a BT Retail Private Circuit product and does not offer an equivalent Partial Private Circuit product, but subsequently offers to provide an equivalent Partial Private Circuit product, it shall allow a Third Party to migrate to the equivalent Partial Private Circuit product without it incurring any penalty (including any default or early termination charge) under its agreement with the Dominant Provider for the provision of BT Retail Private Circuits, for a period of 60 working days following the date on which the equivalent Partial Private Circuit product is first offered by the Dominant Provider.

7. Where the Dominant Provider has taken, or will take, longer than five working days from receiving a request from a Third Party to migrate a Qualifying BT Retail Private Circuit to a Partial Private Circuit, it shall give to the Third Party a refund as set out in paragraphs 8 and 9 of this Direction.

8. Where paragraph 7 of this Direction applies, the Dominant Provider shall refund to the Third Party a sum of money equal to the difference between:
– the charge levied by the Dominant Provider for the BT Retail Private Circuit to which the request for migration relates; and
– the charge levied by the Dominant Provider for the Partial Private Circuit to which the request for migration relates.

9. The refund set out in paragraph 8 of this Direction shall cover the period from the date the Dominant Provider receives the request to migrate until the date the Dominant Provider completes the migration.

10. The Dominant Provider shall, upon a Third Party's written request, provide to the Third Party a map of its network within the United Kingdom which clearly illustrates and labels the geographic location of each Dominant Provider tier 1, tier 1.5, tier 2, and tier 3 node.

Forecasts

11. The Dominant Provider shall only require a Third Party to provide a profile of future Partial Private Circuit capacity ordering intentions over a 12 month period, on a national aggregate basis for groupings of bandwidths no narrower than the following:

- above 8 Mbit/s through to 45 Mbit/s; and
- 155 Mbit/s.

12. The Dominant Provider shall allow a Third Party to set its Advance Capacity Order and Advance Order Commitment without any penalty by up to, 10% (by volume) below, or 20% (by volume) above, the amount stated in the Third Party's previous Capacity Profile or Forecast Profile for the period covered by the Advance Capacity Order or Advance Order Commitment.

13. The Dominant Provider shall allow a Third Party to revise periods covered by its previously stated Capacity Profile and Forecast Profile without any penalty by up to, 30% (by volume) below, or 30% (by volume) above, the amount stated in the Third Party's previous Capacity Profile or Forecast Profile, provided that paragraph 12 of this Direction does not apply.

14. In calculating any increase to an Advance Capacity Order, Advance Order Commitment, Capacity Profile or Forecast Profile pursuant to paragraphs 12 and 13 of this Direction, the outcome of the revision shall, if not an integer, be rounded up to the nearest integer.

15. In calculating any decrease to an Advance Capacity Order, Advance Order Commitment, Capacity Profile or Forecast Profile pursuant to paragraphs 12 and 13 of this Direction, the outcome of the revision shall, if not an integer, be rounded down to the nearest integer.

16. Where a Third Party places a Capacity Order at a Point of Connection for the period corresponding to that of the Advance Capacity Order, which total less than its Advance Capacity Order for the Point of Connection, the Dominant Provider may levy a charge no more than a sum equal to:

[(80% of B) – C] x £2,490

Where B is the total capacity provision by number of VC4-equivalent units specified in the relevant Advance Capacity Order in respect of each Point of Connection; and

Where C is the number of VC4-equivalents ordered during the period to which the relevant Advance Capacity Order relates in respect of each Point of Connection, but does not include cancellations of Capacity Orders made during or after the relevant

Advanced Capacity Order period, but does include any Capacity Order cancelled as a result of the inability of the Dominant Provider to secure consents for CSH links.

17. [paragraph not used].

18. Where a Third Party places orders for Partial Private Circuits from above 8 Mbit/s through to 45 Mbit/s for the period corresponding to that of the Advanced Order Commitment, which total less than its Advance Order Commitment for Partial Private Circuits from above 8 Mbit/s through to 45 Mbit/s, the Dominant Provider may levy a charge no more than a sum equal to:

[(80% of B) – C] x £143

Where B is the total Advance Order Commitment for Private Partial Circuits from above 8 Mbit/s through to 45 Mbit/s; and

Where C is the number of Partial Private Circuits from above 8 Mbit/s through to 45 Mbit/s ordered during the period to which the Advance Order Commitment relates, but does not include cancellations of orders for Partial Private Circuits made during or after the relevant Advanced Order Commitment period, but does include any order for a Partial Private Circuit cancelled as a result of the inability of Dominant Provider to secure consents for Partial Private Circuits.

19. Where a Third Party places orders for Partial Private Circuits of 155 Mbit/s for the period corresponding to that of the Advanced Order Commitment, which total less than its Advance Order Commitment for Partial Private Circuits for 155 Mbit/s, the Dominant Provider may levy a charge no more than a sum equal to:

[(80% of B) – C] x £3,788

Where B is the total Advance Order Commitment for Private Partial Circuits of 155 Mbit/s; and

Where C is the number of Partial Private Circuits of 155 Mbit/s ordered during the period to which the Advance Order Commitment relates, but does not include cancellations of orders for Partial Private Circuits made during or after the relevant Advanced Order Commitment period, but does include any order for a Partial Private Circuit cancelled as a result of the inability of the Dominant Provider to secure consents for Partial Private Circuits.

20. In calculating (80% of B) in paragraphs 16 to 19 inclusive of this Direction the outcome shall, if not an integer, be rounded down to the nearest integer.

Service level agreements

General

21. The Dominant Provider shall set a Committed Delivery Date for each Partial Private Circuit or Network Infrastructure ordered from it by a Third Party.

22. For each Partial Private Circuit or Network Infrastructure ordered from the Dominant Provider by a Third Party, the Dominant Provider shall provide to a Third Party Firm Offer Confirmation in the manner set out in the definition section of this Direction.

23. The time scales and levels of fixed individual compensation payments to be payable under the service level agreement shall be those set out in the Directions, unless otherwise agreed between the Dominant Provider and a Third Party, or except to the extent that Ofcom otherwise consents.

24. Unless otherwise agreed between the Dominant Provider and a Third Party, any fixed individual compensation payment, or reimbursement pursuant to paragraph 28 of this Direction, payable by the Dominant Provider to a Third Party pursuant to the Directions shall be offset by the Dominant Provider against the money owed to it by the Third Party, on a quarterly basis. The Dominant Provider shall keep complete and accurate records of the amounts it has offset in accordance with this paragraph. Such records shall be made available by the Dominant Provider following a request by a Third Party.

25. The Dominant Provider shall not be liable to pay fixed individual compensation payments pursuant to the Directions for periods of delay which arise due to circumstances beyond its reasonable control. The Dominant Provider shall notify a Third Party as soon as reasonably practicable when such circumstances arise. All contractors or sub-contractors of whatever level, and their respective employees, servants and agents, shall for the purpose of this paragraph be treated as employees of the Dominant Provider. Major construction works shall not be considered circumstances beyond the Dominant Provider's reasonable control.

26. The Dominant Provider shall ensure that any time limits set out in this Direction shall not apply to a Third Party to the extent that periods of delay arise due to circumstances beyond its reasonable control. The Third Party shall notify the Dominant Provider as soon as reasonably practicable when such circumstances arise. All contractors or sub-contractors of whatever level, and their respective employees, servants and agents, shall for the purpose of this paragraph be treated as employees of the relevant Third Party.

27. The Dominant Provider shall, at the reasonable request of a Third Party, postpone the Committed Delivery Date of a Partial Private Circuit or Network Infrastructure if such postponement is technically and organisationally reasonable. In agreeing to such a postponement the Dominant Provider shall only charge for reasonable additional expenses it has directly incurred as a result of the postponement.

28. The Dominant Provider shall only postpone the Committed Delivery Date of a Partial Private Circuit or Network Infrastructure with the written agreement of the Third Party. The Dominant Provider shall inform the Third Party as soon as reasonably possible of any proposed postponement of the Committed Delivery Date. Where such a postponement takes place the Dominant Provider shall reimburse the Third Party for any reasonable additional cost incurred by the Third Party as a direct result of the postponement.

29. The FOC Receipt Interval shall be a maximum of eight working days for Partial Private Circuits of above 8 Mbit/s and up to and including 155 Mbit/s and Network Infrastructure, regardless of how many Partial Private Circuits are, or the amount of Network Infrastructure is, ordered at a particular site.

30. The Dominant Provider shall ensure that the FOC Acceptance Interval is a maximum of one two working days for Partial Private Circuits of above 8 Mbit/s and up to and including 155 Mbit/s and Network Infrastructure. Where a Third Party has not informed the Dominant Provider of its Acceptance of Terms or rejection of the

order within five working days of the FOC Date, the Dominant Provider may cancel the Third Party's order.

31. The Dominant Provider shall keep complete and accurate records of the ordering, provision and repair of Partial Private Circuits and Network Infrastructure it provides to a Third Party.

32. Where any Partial Private Circuit or Network Infrastructure which is ordered by a Third Party is in excess of 110% (by volume), rounded up to the nearest integer where necessary, of its Advance Order Commitment or Advance Capacity Order, the applicable Requisite Period set out in the tables in paragraphs 39 and 49 of this Direction shall be extended by 50% and rounded up to the nearest working day, where necessary, for the purposes of calculating fixed individual compensation payments.

Unliquidated damages

33. Nothing in the PPC Contract, as amended by the Directions, shall prevent a Third Party from bringing a claim against the Dominant Provider for unliquidated damages over and above the fixed individual compensation payments set out in the Directions.

Partial Private Circuits

Quick quote and high bandwidth quote on line

34. The Dominant Provider shall provide to a Third Party, upon written request, the necessary wholesale network and pricing information to enable the Third Party to obtain the same information for Partial Private Circuits that is available to the Dominant Provider's retail arm, for its "Quick Quote" and "High Bandwidth Quote On Line" quote facilities.

Concurrency of Partial Private Circuit and ISH link and CSH link delivery times

35. Where a Third Party has ordered a Partial Private Circuit, and the operation of the circuit requires the provision of an ISH link or CSH link, the Dominant Provider shall ensure that the delivery dates of the Partial Private Circuit and the CSH link or ISH link are the same.

36. [Paragraph not used].

37. [Paragraph not used].

Time scales for fixed individual compensation

38. Where the Committed Delivery Date for Partial Private Circuits is set by the Dominant Provider later than the relevant Requisite Period (as set out in the table in paragraph 39 of this Direction) without the agreement of a Third Party, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 5% of the monthly rental for the Private Partial Circuit delayed, per working day or part of a working day in respect of the period commencing immediately on the expiry of the relevant Requisite Period and expiring on the Installation Date.

39. Where the Committed Delivery Date for Partial Private Circuits is set by the Dominant Provider either, later than the relevant Requisite Period (as set out in the

table below) but with the agreement of a Third Party, or within the Requisite Period, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 5% of the monthly rental for the Private Partial Circuit delayed, per working day or part of a working day in respect of the period commencing immediately on the working day following the Committed Delivery Date and expiring on the Installation Date.

Bandwidth of Partial Private Circuit	Requisite Period
34 Mbit/s to 155 Mbit/s	57 working days

Third Party's ability to cancel order

40. Where the Provisioning Interval exceeds the relevant Requisite Period set out in the table in paragraph 39 of this Direction, a Third Party shall be allowed to cancel its order for a Partial Private Circuit after the Cancellation Threshold (as set out in the table below) has expired. The Cancellation Threshold shall commence upon the expiry of the relevant Requisite Period set out in the table in paragraph 39 of this Direction. The Requisite Periods in the table in paragraph 39 shall apply, for the purposes of this paragraph, regardless of whether there is a delay in delivery of a Partial Private Circuit which is due to circumstances beyond the Dominant Provider's reasonable control but not including delay by a Third Party.

Requisite Period set out in the table in paragraph 39 of this Direction	Cancellation Threshold
57 working days	25 working days

41. Where a Third Party cancels a Partial Private Circuit pursuant to paragraph 40 of this Direction, the Dominant Provider shall not charge the Third Party for the circuit and shall not charge for cancelling the circuit. The Dominant Provider shall also be liable to pay the Third Party any fixed individual compensation payments accumulated pursuant to the PPC Contract as amended by the Directions.

Reduced Requisite Periods for Partial Private Circuits

42. The Dominant Provider shall ensure that for at least 70% (by volume) of Partial Private Circuits of a particular bandwidth delivered by the Dominant Party to a Third Party within a three month period (such period not to be calculated on a rolling basis) the Committed Delivery Date is set within the relevant Reduced Requisite Period (as set out in the table below).

Bandwidth of Partial Private Circuit	Reduced Requisite Period
34 Mbit/s to 155 Mbit/s	45 working days

43. In calculating the 70% (by volume) of Partial Private Circuits to which paragraph 42 of this Direction applies the following shall not be included:

- Partial Private Circuits which exceed 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Order Commitment.

44. The Reduced Requisite Periods set out in the table in paragraph 42 of this Direction apply only if, in the previous three month reporting period (such period not

to be calculated on a rolling basis), a Third Party has ordered from the Dominant Provider at least ten Partial Private Circuits of the same bandwidth where such Partial Private Circuits are 2 Mbit/s or less.

45. For the purposes of this Direction, in determining whether 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Order Commitment has been exceeded, the calculation shall be at a national level for each individual Partial Private Circuit bandwidth category and applied in the order in which the Partial Private Circuits were ordered by the Third Party.

Multiple orders

46. Where the Dominant Provider receives an order for more than 10 Partial Private Circuits at one site from a Third Party, the relevant Requisite Period applicable to determine whether the Dominant Provider shall pay fixed individual compensation as set out in paragraphs 38 and 39 of this Direction, shall be the relevant Requisite Period set out in the table in paragraph 39 of this Direction increased by a maximum of 50%. The Dominant Provider shall inform the Third Party of the revised time scales as soon as reasonably practicable.

Availability of service

47. When total loss of service (i.e. total loss of service for one minute or longer) occurs three or more times, within a 12 month period, to a Partial Private Circuit, the Third Party shall not be liable to the Dominant Provider for the monthly rental in any subsequent month where total loss of failure occurs to the Partial Private Circuit, until such time as 12 months have passed and the Partial Private Circuit has not suffered total loss of service. Occurrences of total loss of service which result in the Dominant Provider being liable to pay fixed individual compensation pursuant to paragraphs 58, 59 and 61 of this Direction, shall not be considered as an occurrence of a total loss of service for the purposes of this paragraph.

Network Infrastructure

Time scales for fixed individual compensation

48. Where the Committed Delivery Date for Network Infrastructure is set by the Dominant Provider later than the relevant Requisite Period (as set out in the table in paragraph 49 of this Direction) without the agreement of a Third Party, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 0.3% of the connection fee for the Network Infrastructure, per working day, or part of a working day, in respect of the period commencing immediately on the expiry of the relevant Requisite Period and expiring on the Installation Date,

49. Where the Committed Delivery Date for Network Infrastructure is set by the Dominant Provider either, later than the relevant Requisite Period (as set out in the table below) but with the agreement of a Third Party, or within the Requisite Period, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 0.3% of the connection fee for the Network Infrastructure, in respect of the period commencing immediately on the working day following the Committed Delivery Date and expiring on the Installation Date.

Network Infrastructure	Requisite Period (where the Dominant Provider	Requisite Period (where the Dominant Provider

	needs to carry out Civil Works)	does not need to carry out Civil Works)
ISH links	110 working days	85 working days
CSH links	110 working days	85 working days
ISH links – provision of new multiplexor on an existing Point of Connection	Not applicable	60 working days
ISH links - provision of extra STM-1 interface on existing STM-1 ISH SMA4 multiplexor	Not applicable	60 working Days
CSH links - provision of new multiplexor on existing Point of Connection	Not applicable	60 working Days
CSH links requiring only provision of new tributary card on existing multiplexor	Not applicable	25 working Days

Third Party's ability to cancel order

50. Where the Provisioning Interval exceeds the relevant Requisite Period set out in the table in paragraph 49 of this Direction, a Third Party shall be allowed to cancel its order for Network Infrastructure after the Cancellation Threshold (as set out in the table below) has expired. The Cancellation Threshold shall commence upon the expiry of the relevant Requisite Period set out in the table in paragraph 49 of this Direction. The Requisite periods in the table in paragraph 49 shall apply, for the purposes of this paragraph, regardless of whether there is a delay in delivery of Network Infrastructure which is due to circumstances beyond the Dominant Provider's reasonable control but not including delay by a Third Party.

Requisite Period set out in the table in paragraph 49 of this Direction	**Cancellation Threshold**
21 to 40 working days	20 working days
41 to 60 working days	25 working days
61 to 90 working days	30 working days
Over 90 working days	40 working days

51. Where a Third Party cancels Network Infrastructure pursuant to paragraph 50 of this Direction, the Dominant Provider shall not charge the Third Party for the Network Infrastructure and shall not charge for cancelling the Network Infrastructure. The Dominant Provider shall also be liable to pay the Third Party any fixed compensation payments accumulated pursuant to the PPC Contract as amended by the Directions.

Reduced Requisite periods for Network Infrastructure

52. The Dominant Provider shall ensure that for at least 70% (by volume) of the total VC4-equivalents of Network Infrastructure delivered by it to a Third Party during a three month period (such period not to be calculated on a rolling basis) the Committed Delivery Date is set within the relevant Reduced Requisite Period (as set out in the table below).

Network Infrastructure	Reduced Requisite Period (where the Dominant Provider needs to carry out Civil Works)	Reduced Requisite Period where the Dominant Provider does not need to carry out Civil Works)
ISH Inks	75 working days	60 working days
CSH links	75 working days	60 working days
ISH links - provision of new multiplexor on an existing Point of Connection	Not applicable	40 working days
ISH links - provision of extra STM-1 interface on existing STM-1 ISH SMA4 multiplexor	Not applicable	40 working days
CSH links - provision of new multiplexor on existing Point of Connection	Not applicable	40 working days
CSH links requiring only provision of new tributary card on existing multiplexor	Not applicable	20 working days

53. In calculating the 70% (by volume) of the total VC4-equivalents of Network Infrastructure to which paragraph 52 of this Direction applies the following shall not be included:

- Network Infrastructure which exceeds 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Capacity Order.

54. The Reduced Requisite Periods set out in the table in paragraph 52 of this Direction only apply if, in the previous three month reporting period (such period not to be calculated on a rolling basis) a Third Party has ordered from the Dominant Provider at least 2 VC4-equivalents of Network Infrastructure. For the purposes of this paragraph the first reporting period of three months shall be the first such reporting period falling after 30 working days following the date of publication of this Direction.

55. For the purposes of this Direction, in determining whether 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance

Capacity Order has been exceeded, the calculation shall be made using VC4-equivalents at each Point of Connection applied in the order in which the Network Infrastructure was ordered by the Third Party.

Repair of Partial Private Circuits and Network Infrastructure

56. Where the Dominant Provider offers to a Third Party Regular Care and Enhanced Care for Partial Private Circuits and Network Infrastructure it shall do so at a cost orientated price and as set out in the table below:

	Operational hours	**Repair/response time**	**Extras**
Regular Care	Normal working hours	Response within one working day of receipt of a fault report by a Third Party. Repair within two working days of receipt of a fault report by a Third Party.	If a fault is not remedied within two working days of receipt of a fault report by a Third Party, the Dominant Provider shall call the Third Party to report progress being made to remedy the fault.
Enhanced Care	24 hours per day, 7 days per week (including public and bank holidays).	Response within four hours of receipt of a fault report from a Third Party. Repair within five hours of receipt of a fault report by a Third Party.	If a fault is not remedied within five hours of receipt of a fault report by a Third Party, the Dominant Provider shall contact the Third Party to report progress being made to remedy the fault.

57. Receipt by the Dominant Provider from a Third Party of a report of a fault concerning a Partial Private Circuit or Network Infrastructure, shall be acknowledged by the Dominant Provider to the Third Party within one hour.

58. Where the Dominant Provider fails to repair a Partial Private Circuit within the time limits set out in the table in paragraph 56 of this Direction it shall pay to the Third Party a fixed individual compensation payment as set out in paragraphs 59 to 63 inclusive of this Direction in respect of the period commencing on the expiry of the applicable repair time set out in the table in paragraph 56 and expiring at the time the Partial Private Circuit or Network Infrastructure is repaired.

59. Where the Third Party has ordered the Dominant Provider's Regular Care for Partial Private Circuits, the Dominant Provider shall pay the Third Party an amount equal to 100% of the monthly rental payable for the type of Partial Private Circuit being repaired per working day, or part of a working day, of delay is repair.

60. Where the Third Party has ordered the Dominant Provider's Regular Care for Network Infrastructure, the Dominant Provider shall pay the Third Party an amount equal to 1% of the connection fee for the type of Network Infrastructure being repaired per working day, or part of a working day, of delay in repair.

61. Where the Third Party has ordered the Dominant Provider's Enhanced Care for Partial Private Circuits, the Dominant Provider shall pay the Third Party an amount

equal to 15% of the monthly rental payable for the type of Partial Private Circuit being repaired per hour, or part of an hour, of delay in repair.

62. Where the Third Party has ordered the Dominant Provider's Enhanced Care for Network Infrastructure, the Dominant Provider shall pay the Third Party an amount equal to 0.15% of the connection fee for the type of Network Infrastructure being repaired per hour, or part of an hour, of delay in repair.

63. The Dominant Provider shall not be liable to pay fixed individual compensation pursuant to paragraphs 60 and 62 of this Direction where it is also liable for fixed individual compensation pursuant to paragraphs 59 and 61 of this Direction where the Partial Private Circuit is being provided using the Network Infrastructure which is being repaired.

64. The Dominant Provider shall attend, and invite Third Parties to regular meetings to review the level of service provided by it in relation to Partial Private Circuits and related Network Infrastructure.

Change of speed or interface

65. The Dominant Provider shall offer to provide within a reasonable period of a Third Party's written request, the ability to alter the speed or interface of a Partial Private Circuit.

66. The Dominant Provider shall ensure that it provides to a Third Party a Partial Private Circuit variant for the services to which paragraph 65 of this Direction applies, which are equivalent to the services it currently provides on a retail basis for retail leased lines.

STM-1, ISH and CSH handover

67. The Dominant Provider shall offer to provide within a reasonable period of a Third Party's written request for a Synchronous Transfer Mode–1 ("STM-1"), an interface using an ISH link or CSH link; and handover pursuant to paragraph 68 of this Direction. Such link or handover shall be provided by way of network connecting apparatus capable of providing no more than the STM-1 capacity ordered by the Third Party.

68. The Dominant Provider shall within a reasonable period of a Third Party's written request, handover in a footway jointing chamber for Partial Private Circuits at a reasonable point nominated by the Third Party. The footway jointing chamber shall be located in the same Dominant Provider local serving exchange area as the Dominant Provider Serving Node to which the Partial Private Circuits being handed over are connected.

Equipment re-use

69. Paragraph 70 of this Direction shall only apply to the re-use of Plesiochronous Digital Hierarchy ("PDH") and Synchronous Digital Hierarchy ("SDH") equipment situated at a third party site ("Equipment").

70. The Dominant Provider may reject a request by a Third Party for re-use of PDH Equipment if such re-use would be incompatible with its network. Any such rejection by the Dominant Provider shall be made within 10 working days of a request by the

Third Party and fully justified in writing to the requesting Third Party at the same time as the request is rejected.

Other Circuits

71. Unless Ofcom otherwise agrees, the Dominant Provider shall, offer to provide Partial Private Circuit with no single point of failure, within a reasonable period of a Third Party's request.

72. The Dominant Provider shall offer to provide, within a reasonable period of a Third Party's written request, a Partial Private Circuit which is dual pathed and diversely routed from a third party customer's premises to a Third Party's single Point of Connection.

LLU Backhaul

73. The Dominant Provider shall offer to enter into an agreement with any Third Party, within a reasonable period of the Third Party's written request, LLU Backhaul Services (as set out in the Annex to this Direction) on reasonable terms. Without prejudice to the generality of this requirement, terms will not be considered reasonable if they fail to include a Service Level Agreement ("SLA") such as could be expected to be negotiated in a competitive market.

74. The agreement for the supply of LLU Backhaul Services by the Dominant Provider shall include an SLA relating to the supply of such a product. This SLA shall include provision for the reasonable payment of fixed compensation by the Dominant Provider to a Third Party in cases where the Dominant Provider fails to fulfill its obligations under the SLA relating to the supply of LLU Backhaul Services.

75. The Dominant Provider shall implement this Direction within 10 working days of its publication.

76. This Direction shall take effect on the day it is published.

77. The Annex to this Direction shall form part of the Direction.

Jim Niblett

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002
24 June 2004

Annex

(A) The provision of transparent transmission capacity by the Dominant Provider, at all bandwidths above eight megabits per second and up to and including one hundred and fifty five megabits per second between a Local Loop Unbundling Third Party's ('LLUTP's') equipment at a Main Distribution Frame ('MDF') site of the Dominant Provider's and a Point of Connection with a Third Party's electronic communications network connected to the nearest appropriate Dominant Provider Synchronous Digital Hierarchy ('SDH') node to the customer. Such node could be a Tier 3, Tier 2, Tier 1.5 or Tier 1 node.

(B) The provision of transparent transmission capacity by the Dominant Provider, at all bandwidths between bandwidths above eight megabits per second and up to and including one hundred and fifty five megabits per second between a LLUTP's equipment at an MDF site of the Dominant Provider and a Point of Connection with a Third Party's electronic communications network connected to the nearest appropriate Dominant Provider SDH node to the customer which is superior in the hierarchy to the node defined in (A) above, where such node exists. Such node could be a Tier 2, Tier 1.5 or Tier 1 node.

(C) The provision of transparent transmission capacity by the Dominant Provider, at all bandwidths above eight megabits per second and up to and including one hundred and fifty five megabits per second between a LLUTP's equipment at an MDF site of the Dominant Provider and a Point of Connection with a Third Party's electronic communications network connected to the nearest appropriate Dominant Provider SDH node to the customer which is superior in the hierarchy to the node defined in (B) above, where such node exists, and which could be a Tier 1.5 or Tier 1 node.

(D) The provision of transparent transmission capacity by the Dominant Provider, at all bandwidths above eight megabits per second and up to and including one hundred and fifty five megabits per second between a LLUTP's equipment at an MDF site of the Dominant Provider and a Point of Connection with a Third Party's electronic communications network connected to the nearest appropriate Dominant Provider SDH node to the customer which is superior in the hierarchy to the node defined in (C) above, where such node exists, and which is a Tier 1 node.

(E) The provision of transparent transmission capacity by the Dominant Provider, at all bandwidths between bandwidths above eight megabits per second and up to and including one hundred and fifty five megabits per second between a LLUTP's equipment at a MDF site of the Dominant Provider and a Point of Connection with a Third Party's electronic communications network connected to any Dominant Provider SDH Tier 1 node.

Direction under Condition GG3 imposed on British Telecommunications plc as a result of the analysis of the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including one hundred and fifty five megabits per second in which British Telecommunications plc has been found to have significant market power

WHEREAS:

(A) Ofcom having considered every representation duly made, and thereafter pursuant to sections 48(1) and 79 of the Act by way of publication of a notification identified the relevant services markets, has designated British Telecommunications plc as having significant market power in the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including one hundred and fifty five megabits per second within the United Kingdom but not including the Hull Area;

(B) this Direction concerns matters to which Condition GG3 relates;

(C) for the reasons set out in the explanatory statement accompanying this Direction, Ofcom is satisfied that, in accordance with section 49(2) of the Act, this Direction is:

(i) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;
(ii) not such as to discriminate unduly against particular persons or against a particular description of persons;
(iii) proportionate to what it is intended to achieve; and
(iv) in relation to what it is intended to achieve, transparent;

(D) for the reasons set out in the explanatory statement accompanying this Direction, Ofcom is satisfied that he has acted in accordance with the relevant duties set out in sections 3 and 4 of the Act;

(E) Ofcom has published a notification of the proposed Direction in accordance with section 49 of the Act;

(F) Ofcom has considered every representation about the proposed Direction duly made to him; and

NOW, therefore, pursuant to Condition GG3 Ofcom makes the following Direction:

For the purpose of interpreting this Direction the definitions set out in the Direction made under Condition GG1 and published on the same day as this Direction shall apply.

Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them.

The Interpretation Act 1978 shall apply as if this Direction was an Act of Parliament.

Headings and titles shall be disregarded.

The Dominant Provider shall provide Partial Private Circuits in accordance with this Direction.

Charges for capacity on third party customer infrastructure

1. Where a Third Party already has a Partial Private Circuit connected to third party customer infrastructure which was in situ before 1 August 2001, and has a Subsequent Partial Private Circuit connected to the same third party customer infrastructure the Dominant Provider shall charge no more than the amount set out in the table below for such a connection.

Bandwidth	Charge (£)
34 Mbit/s and 45 Mbit/s	15,383
140 Mbit/s and 155 Mbit/s	33,954

Charge for change of speed or interface

2. [Paragraph not used]

Charges for reclassification of BT Retail Private Circuits

3. Where a BT Retail Private Circuit is migrated to a Partial Private Circuit in accordance with the PPC Contract, as amended by the Directions, it shall charge the Third Party no more than £37 per migrated circuit as a reclassification charge.

Charges for failed migration orders

4. Where the Dominant Provider informs a Third Party that a request for migration of a BT Retail Private Circuit to a Partial Private Circuit is invalid in accordance with the PPC Contract, as amended by the Directions, it shall charge the Third Party no more than £36 per request rejected.

Infrastructure tariff conversion charges

5. The Dominant Provider's infrastructure tariff conversion charges to a Third Party shall be no more than the amounts set out in the Annex of this Direction and calculated in accordance with the Annex of this Direction.

6. The Dominant Provider may also levy an infrastructure tariff conversion charge, in accordance with the Annex of this Direction, on a BT Retail Private Circuit which was in situ on the date that this Direction enters into force and being provided to a Third Party which at the time was a non-schedule 2 public operator which was running a telecommunications system under a telecommunications licence, but which is subsequently provided to a Third Party after the date of publication of this Direction. This paragraph shall apply whether or not the non-schedule 2 public operator which was running a telecommunications system under a telecommunications licence, and the Third Party, are the same person.

Equipment re-use

7. Paragraphs 8 to 12 inclusive of this Direction shall only apply to the re-use of Plesiochronous Digital Hierarchy ("PDH") and Synchronous Digital Hierarchy ("SDH") equipment situated at a third party site ("Equipment").

8. Where a Third Party requests the Dominant Provider to provide Equipment at a specific site, and the Third Party has already used the Equipment at the site, the Dominant Provider shall allow the Third Party to re-use the Equipment at that site, subject to paragraph 70 of the Direction made under Condition GG1 and published on the same day as this Direction, without charge, subject to paragraph 11 of this Direction, or at any other third party site without charge, subject to paragraphs 10 and 11 of this Direction, for as long as the Equipment remains available for use.

9. Where a Third Party requests the Dominant Provider to provide Equipment at a specific site, and the Third Party has not used the Equipment at the site, the Dominant Provider shall allow the Third Party to re-use the Equipment at the site, subject to paragraph 70 of the Direction made under Condition GG1 and published on the same day as this Direction, and shall charge the Third Party a discounted charge equivalent to its remaining value. Such discounted charge shall be cost orientated and shall be passed on to the Third Party which had previously used the Equipment at that site, less any reasonable costs incurred by the Dominant Provider in administrating a system necessary to implement paragraphs 7 to 12 inclusive of this Direction and paragraph 70 of the Direction made under Condition GG1 and published on the same day as this Direction.

10. The Dominant Provider shall only charge a Third Party for testing SDH Equipment before such equipment is re-used, where such infrastructure is to be re-located. Such charge shall be cost orientated. In addition the Dominant Provider may levy a cost orientated charge for re-locating SDH Equipment.

11. The Dominant Provider may levy a cost orientated charge for testing PDH Partial Private Circuit Equipment before such infrastructure is re-used. In addition The Dominant Provider may levy a cost orientated charge for re-locating PDH Equipment.

12. The charge contained in paragraph 9 of this Direction shall:
- reflect all the incremental costs necessarily and efficiently incurred;
- reflect the value of the Equipment being re-used; and
- be non-discriminatory.

Cost orientation of LLU Backhaul prices

13. The Licensee shall ensure that its charges for LLU Backhaul Services (as set out in the Annex to the Direction made under Condition GG1 and published on the same day as this Direction) are consistent with its charges for those elements which are common to LLU Backhaul Services and Partial Private circuits.

14. The Dominant Provider shall implement this Direction within 10 working days of its publication.

15. This Direction shall take effect on the day it is published.

16. The Annex to this Direction shall form part of the Direction.

Jim Niblett

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002
24 June 2004

Annex – Infrastructure tariff conversion charges

Charges for 34 Mbit/s and 45 Mbit/s BT Retail Private Circuits which where installed up to and including 31 December 2001

Time between the date that the BT Retail Private Circuit was installed, and an Operator requested such circuit to be migrated to a Partial Private Circuit.	Charge (£)
Up to 1 month	21673
2 months	19067
3 months	16433
4 months	13772
5 months	11082
6 months	8364
7 months	5617
8 months	2841
9 months	35
10 months or more	0

Charges for 140 Mbit/s and 155 Mbit/s for BT Retail Private Circuits installed up to and including 31 December 2001

Time between the date that the BT Retail Private Circuit was installed, and an Operator requested such circuit to be migrated to a Partial Private Circuit.	Charge (£)
Up to 1 month	49593
2 months	48618
3 months	47633
4 months	46637
5 months	45631
6 months	44614
7 months	43587
8 months	42549
9 months	41499
10 months	40439
11 months	39367
12 months	38284
13 months	37189
14 months	36083
15 months	34965
16 months	33835
17 months	32693
18 months	31539
19 months	30373
20 months	29194
21 months	28003
22 months	26799
23 months	25583
24 months	24353
25 months	23111

26 months	21855
27 months	20586
28 months	19304
29 months	18008
30 months	16698
31 months	15374
32 months	14036
33 months	12685
34 months	11318
35 months	9938
36 months	8542
37 months	7132
38 months	5707
39 months	4267
40 months	2811
41 months	1340
42 months or more	0

Charges for 34 Mbit/s and 45 Mbit/s for BT Retail Private Circuits installed after 31 December 2001

Time between the date that the BT Retail Private Circuit was installed, and an Operator requested such circuit to be migrated to a Partial Private Circuit.	Charge (£)
Up to 1 month	20762
2 months	18147
3 months	15503
4 months	12832
5 months	10132
6 months	7404
7 months	4647
8 months	1860
9 months or more	0

Charges for 140 Mbit/s and 155 Mbit/s for BT Retail Private Circuits installed after 31 December 2001

Time between the date that the BT Retail Private Circuit was installed, and an Operator requested such circuit to be migrated to a Partial Private Circuit.	Charge (£)
Up to 1 month	49593
2 months	48618
3 months	47633
4 months	46637
5 months	45631
6 months	44614
7 months	43587
8 months	42549
9 months	41499
10 months	40439
11 months	39367
12 months	38284
13 months	37189
14 months	36083
15 months	34965
16 months	33835
17 months	32693
18 months	31539
19 months	30373
20 months	29194
21 months	28003
22 months	26799
23 months	25583
24 months	24353
25 months	23111
26 months	21855
27 months	20586
28 months	19304
29 months	18008
30 months	16698
31 months	15374
32 months	14036
33 months	12685
34 months	11318
35 months	9938
36 months	8542
37 months	7132
38 months	5707
39 months	4267
40 months	2811
41 months	1340
42 months or more	0

Direction under Condition GG7 imposed on British Telecommunications plc as a result of the analysis of the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including one hundred and fifty five megabits per second in which British Telecommunications plc has been found to have significant market power

WHEREAS:

(A) Ofcom having considered every representation duly made, and thereafter pursuant to sections 48(1) and 79 of the Act by way of publication of a notification identified the relevant services markets, has designated British Telecommunications plc as having significant market power in the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including one hundred and fifty five megabits per second within the United Kingdom but not including the Hull Area;

(B) this Direction concerns matters to which Condition GG7 relates;

(C) for the reasons set out in the explanatory statement accompanying this Direction, Ofcom is satisfied that, in accordance with section 49(2) of the Act, this Direction is:

(i) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;
(ii) not such as to discriminate unduly against particular persons or against a particular description of persons;
(iii) proportionate to what it is intended to achieve; and
(iv) in relation to what it is intended to achieve, transparent;

(D) for the reasons set out in the explanatory statement accompanying this Direction, Ofcom is satisfied that he has acted in accordance with the relevant duties set out in sections 3 and 4 of the Act;

(E) Ofcom has published a notification of the proposed Direction in accordance with section 49 of the Act;

(F) Ofcom has considered every representation about the proposed Direction duly made to him; and

NOW, therefore, pursuant to Condition GG7 Ofcom makes the following Direction:

For the purpose of interpreting this Direction the definitions set out in the Direction made under Condition GG1 and published on the same day as this Direction shall apply.

Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them.

The Interpretation Act 1978 shall apply as if this Direction was an Act of Parliament.

Headings and titles shall be disregarded.

1. The Dominant Provider shall, on a quarterly basis, publish the following information for each Third Party to whom it provides Partial Private Circuits on an individual and anonymous basis; and on an aggregated basis with respect to all such Third Parties on an anonymous basis:

- its performance with respect to Committed Delivery Dates, Requisite Periods, Reduced Requisite Periods, FOC Receipt Intervals, repair and availability of service;

- a list of incidences of circumstances beyond the reasonable control of the Dominant Provider, split by reason;

- the number and percentage of instances where each Third Party exceeds the applicable FOC Acceptance Interval, set out by bandwidth, for Partial Private Circuits;

- the percentage of each Third Party’s previous month's orders having Committed Delivery Dates quoted within 50% of the Requisite Periods set out in the table in paragraph 39 of the Direction made under Condition GG1 and published on the same day as this Direction;

- the number and percentage of instances where each Third Party exceeds the applicable FOC Acceptance Interval for Network Infrastructure;

- the average amount by which each Third Party exceeds the applicable FOC Acceptance Interval, set out by bandwidth, for Partial Private Circuits;

- the average amount by which each Third Party exceeds the applicable FOC Acceptance Interval for Network Infrastructure;

- the number and percentage of orders for Partial Private Circuits rejected by the Dominant Provider;

- the number and percentage of orders for Network Infrastructure rejected by the Dominant Provider;

- the mean response time to fault reports relating to Partial Private Circuits and Network Infrastructure sent to the Dominant Provider by Third Party; and

- new installation fault report rate relating to Partial Private Circuits.

The aggregated reports shall include the Dominant Provider's performance in respect of provision to its retail arm.

2. The Dominant Provider shall ensure that its monitoring systems are sufficient to enable it, at all times, to be capable, following a written request by Ofcom, to publish the following information for each Third Party to whom it provides Partial Private Circuits on an individual and anonymous basis; and on an aggregated basis with respect to all such Third Parties on an anonymous basis:

- list of reasons for rejections of orders;

- list of reasons for faults; and

- list of reasons for any Committed Delivery Dates beginning 10 working days later than the relevant Requisite Period.

The aggregated reports shall include the Dominant Provider's performance in respect of provision to its retail arm.

3. Nothing in this Direction shall require the Dominant Provider to publish confidential information relating to its business or that of a Third Party.

4. The information set out in paragraph 1 above shall be first published within three months of this Direction taking effect and every three months thereafter.

5. Publication referred to in paragraph 1 above shall be effected by:

(a) for information on an aggregated basis, by placing a copy of the information on any relevant website operated or controlled by the Dominant Provider;

(b) for information on an individual basis, by electronic mailing the information to the relevant Third Party; and

(c) sending a copy of the information to Ofcom.

6. This Direction shall take effect on the day it is published.

Jim Niblett

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002
24 June 2004

Direction under Condition H1 imposed on British Telecommunications plc as a result of the analysis of the market for the provision of wholesale trunk segments at all bandwidths in which British Telecommunications plc has been found to have significant market power

WHEREAS:

(A) Ofcom having considered every representation duly made, and thereafter pursuant to sections 48(1) and 79 of the Act by way of publication of a notification identified the relevant services markets, has designated British Telecommunications plc as having significant market power in the market for the provision of wholesale trunk segments at all bandwidths within the United Kingdom;

(B) this Direction concerns matters to which Condition H1 relates;

(C) for the reasons set out in the explanatory statement accompanying this Direction, Ofcom is satisfied that, in accordance with section 49(2) of the Act, this Direction is:

(i) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;
(ii) not such as to discriminate unduly against particular persons or against a particular description of persons;
(iii) proportionate to what it is intended to achieve; and
(iv) in relation to what it is intended to achieve, transparent;

(D) for the reasons set out in the explanatory statement accompanying this Direction, Ofcom is satisfied that he has acted in accordance with the relevant duties set out in sections 3 and 4 of the Act;

(E) Ofcom has published a notification of the proposed Direction in accordance with section 49 of the Act;

(F) Ofcom has considered every representation about the proposed Direction duly made to him; and

NOW, therefore, pursuant to Condition H1 Ofcom makes the following Direction:

For the purpose of interpreting this Direction the following definitions shall apply:

“Act” means the Communications Act 2003;

“The Directions” means the Directions made under Conditions H1, H3 and H6 and published on the same day as this Direction;

“Hull Area” means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;

“Dominant Provider” means British Telecommunications plc, whose registered company number is 1800000 and any British Telecommunications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by Section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

"Point of Connection" means a point at which the Dominant Provider's Electronic Communications Network and another person's Electronic Communications Network are connected; and

"Third Party" means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network.

For the purpose of this Direction the following terms shall have the meaning as set out in the Dominant Provider's Standard PPC Handover Agreement, as at the date of publication of this Direction, but with the necessary changes in order to ensure compliance with the Directions.

Advance Capacity Order

Advance Order Commitment

BT Retail Private Circuit

BT Serving Node

Capacity Order

Capacity Profile

Customer Sited Handover ("CSH")

Forecast Profile

In-Span Handover ("ISH")

Re-Designation

Qualifying BT Retail Private Circuit

The following definitions shall also apply for the purpose of this Direction:

Term	**Definition**
Acceptance of Terms	Date on which a Third Party confirms acceptance of delivery conditions and is committed to the order.
Civil Works	Works that necessitate the digging up of a street for the installation of ducts.
Committed Delivery Date	The date confirmed by the Dominant Provider as the delivery date.
Firm Offer Confirmation ("FOC")	Confirmation by the Dominant Provider in writing (by fax or e-mail) to a Third Party of the delivery conditions including price and Committed Delivery Date, after

	acknowledging receipt of an order for a Partial Private Circuit or Network Infrastructure from a Third Party.
FOC Acceptance Interval	The number of working days from the FOC Date until the Acceptance of Terms.
FOC Date	The date on which the Dominant Provider makes a Firm Offer Confirmation.
FOC Receipt Interval	The number of working days from the Order Request Date until the FOC Date.
Installation Date	Date of installation of a Partial Private Circuit or Network Infrastructure.
Network Infrastructure	The categories of products listed in the table contained in paragraph 49 of this Direction.
Order Request Date	Date on which a Third Party dispatches a valid Partial Private Circuit order, or Network Infrastructure order, to the Dominant Provider.
Partial Private Circuit (“PPC”)	A circuit provided pursuant to the PPC Contract and in accordance with the Directions.
PPC Contract	The Dominant Provider's Standard PPC Handover Agreement as at the date of publication of this Direction.
Provisioning Interval	The number of working days from the Order Request Date until the Installation Date.
Requisite Period	The period commencing on the Order Request Date and ending on the applicable working day as set out in the tables in paragraphs 39 and 49 of this Direction.
Reduced Requisite Period	The period commencing on the Order Request Date and ending on the applicable working day as set out in the tables in paragraphs 42 and 52 of this Direction.
Subsequent Partial Private Circuit	A Partial Private Circuit which can be delivered on dedicated pre-provided Network Infrastructure where spare capacity exists.

Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them.

The Interpretation Act 1978 shall apply as if this Direction was an Act of Parliament.

Headings and titles shall be disregarded.

The Dominant Provider shall provide Partial Private Circuits and shall do so in accordance with this Direction. This Direction shall only apply to the extent that the Dominant Provider provides a Partial Private Circuit which contains an element of a product or service which falls within the market for wholesale trunk segments.

Migration

1. The 12 month contractual minimum term placed upon a Third Party, for the provision of a Partial Private Circuit which has been migrated pursuant to the PPC Contract, shall be measured from the date that the original BT Retail Private Circuit was brought into service.

2. The Dominant Provider shall not impose any deadline before which a Third Party must inform the Dominant Provider that it requires a BT Retail Private Circuit to be migrated to an equivalent Partial Private Circuit status under the PPC Contract.

3. The Dominant Provider shall allow a BT Retail Private Circuit, which fell within paragraph 1.3 of the Phase 1 PPC Direction published on 14 June 2002, to be considered under the PPC Contract as a Qualifying BT Retail Private Circuit.

4. A circuit deemed to be a Qualifying BT Retail Private Circuit under paragraphs 20 or 21 of the Phase 2 PPC Direction published on 23 December 2002 shall continue to be a Qualifying BT Retail Private Circuit.

5. Where a Third Party was not previously eligible to migrate a BT Retail Private Circuit to a Qualifying BT Retail Private Circuit, but subsequently becomes eligible to do so, the Dominant Provider shall, for 60 working days following the date on which the Third Party's circuits become eligible for migration, allow migration without the Third Party incurring any penalty (including any default or early termination charge) under its agreement with the Dominant Provider for the provision of BT Retail Private Circuits.

6. Where, at the date of publication of this Direction, the Dominant Provider offers a BT Retail Private Circuit product and does not offer an equivalent Partial Private Circuit product, but subsequently offers to provide an equivalent Partial Private Circuit product, it shall allow a Third Party to migrate to the equivalent Partial Private Circuit product without it incurring any penalty (including any default or early termination charge) under its agreement with the Dominant Provider for the provision of BT Retail Private Circuits, for a period of 60 working days following the date on which the equivalent Partial Private Circuit product is first offered by the Dominant Provider.

7. Where the Dominant Provider has taken, or will take, longer than five working days from receiving a request from a Third Party to migrate a Qualifying BT Retail Private Circuit to a Partial Private Circuit, it shall give to the Third Party a refund as set out in paragraphs 8 and 9 of this Direction.

8. Where paragraph 7 of this Direction applies, the Dominant Provider shall refund to the Third Party a sum of money equal to the difference between:
- the charge levied by the Dominant Provider for the BT Retail Private Circuit to which the request for migration relates; and
- the charge levied by the Dominant Provider for the Partial Private Circuit to which the request for migration relates.

9. The refund set out in paragraph 8 of this Direction shall cover the period from the date the Dominant Provider receives the request to migrate until the date the Dominant Provider completes the migration.

10. The Dominant Provider shall, upon a Third Party's written request, provide to the Third Party a map of its network within the United Kingdom which clearly illustrates and labels the geographic location of each Dominant Provider tier 1, tier 1.5, tier 2, and tier 3 node.

Forecasts

11. The Dominant Provider shall only require a Third Party to provide a profile of future Partial Private Circuit capacity ordering intentions over a 12 month period, on a national aggregate basis for groupings of bandwidths no narrower than the following:

- less than 1 Mbit/s;
- 1 Mbit/s through to 2 Mbit/s;
- above 8 Mbit/s through to 45 Mbit/s; and
- 155 Mbit/s.

12. The Dominant Provider shall allow a Third Party to set its Advance Capacity Order and Advance Order Commitment without any penalty by up to, 10% (by volume) below, or 20% (by volume) above, the amount stated in the Third Party's previous Capacity Profile or Forecast Profile for the period covered by the Advance Capacity Order or Advance Order Commitment.

13. The Dominant Provider shall allow a Third Party to revise periods covered by its previously stated Capacity Profile and Forecast Profile without any penalty by up to, 30% (by volume) below, or 30% (by volume) above, the amount stated in the Third Party's previous Capacity Profile or Forecast Profile, provided that paragraph 12 of this Direction does not apply.

14. In calculating any increase to an Advance Capacity Order, Advance Order Commitment, Capacity Profile or Forecast Profile pursuant to paragraphs 12 and 13 of this Direction, the outcome of the revision shall, if not an integer, be rounded up to the nearest integer.

15. In calculating any decrease to an Advance Capacity Order, Advance Order Commitment, Capacity Profile or Forecast Profile pursuant to paragraphs 12 and 13 of this Direction, the outcome of the revision shall, if not an integer, be rounded down to the nearest integer.

16. Where a Third Party places a Capacity Order at a Point of Connection for the period corresponding to that of the Advance Capacity Order, which total less than its Advance Capacity Order for the Point of Connection, the Dominant Provider may levy a charge no more than a sum equal to:

[(80% of B) – C] x £2,490

Where B is the total capacity provision by number of VC4-equivalent units specified in the relevant Advance Capacity Order in respect of each Point of Connection; and

Where C is the number of VC4-equivalents ordered during the period to which the relevant Advance Capacity Order relates in respect of each Point of Connection, but does not include cancellations of Capacity Orders made during or after the relevant Advanced Capacity Order period, but does include any Capacity Order cancelled as a result of the inability of the Dominant Provider to secure consents for CSH links.

17. Where a Third Party places orders for Partial Private Circuits below 1 Mbit for the period corresponding to that of the Advanced Order Commitment, which total less than its Advance Order Commitment for the Partial Private Circuits below 1 Mbit, the Dominant Provider may levy a charge no more than a sum equal to:

[(80% of B) – C] x £52

Where B is the total Advance Order Commitment for Private Partial Circuits below 1 Mbit; and

Where C is the number of Partial Private Circuits below 1 Mbit ordered during the period to which the Advance Order Commitment relates, but does not include cancellations of orders for Partial Private Circuits made during or after the relevant Advanced Order Commitment period, but does include any order for a Partial Private Circuit cancelled as a result of the inability of the Dominant Provider to secure consents for Partial Private Circuits.

18. Where a Third Party places orders for Partial Private Circuits from 1 Mbit through to 2 Mbit/s for the period corresponding to that of the Advanced Order Commitment, which total less than its Advance Order Commitment for Partial Private Circuits from 1 Mbit through to 2 Mbit/s, the Dominant Provider may levy a charge no more than a sum equal to:

[(80% of B) – C] x £143

Where B is the total Advance Order Commitment for Private Partial Circuits from 1 Mbit through to 2 Mbit/s; and

Where C is the number of Partial Private Circuits from 1 Mbit through to 2 Mbit/s ordered during the period to which the Advance Order Commitment relates, but does not include cancellations of orders for Partial Private Circuits made during or after the relevant Advanced Order Commitment period, but does include any order for a Partial Private Circuit cancelled as a result of the inability of Dominant Provider to secure consents for Partial Private Circuits.

19. Where a Third Party places orders for Partial Private Circuits from above 8 Mbit/s through to 45 Mbit/s for the period corresponding to that of the Advanced Order Commitment, which total less than its Advance Order Commitment for Partial Private Circuits from above 8 Mbit/s through to 45 Mbit/s, the Dominant Provider may levy a charge no more than a sum equal to:

[(80% of B) – C] x £143

Where B is the total Advance Order Commitment for Private Partial Circuits from above 8 Mbit/s through to 45 Mbit/s; and

Where C is the number of Partial Private Circuits from above 8 Mbit/s through to 45 Mbit/s ordered during the period to which the Advance Order Commitment relates, but does not include cancellations of orders for Partial Private Circuits made during or after the relevant Advanced Order Commitment period, but does include any order for a Partial Private Circuit cancelled as a result of the inability of Dominant Provider to secure consents for Partial Private Circuits.

19A. Where a Third Party places orders for Partial Private Circuits of 155 Mbit/s for the period corresponding to that of the Advanced Order Commitment, which total less than its Advance Order Commitment for Partial Private Circuits for 155 Mbit/s, the Dominant Provider may levy a charge no more than a sum equal to:

[(80% of B) – C] x £3,788

Where B is the total Advance Order Commitment for Private Partial Circuits of 155 Mbit/s; and

Where C is the number of Partial Private Circuits of 155 Mbit/s ordered during the period to which the Advance Order Commitment relates, but does not include cancellations of orders for Partial Private Circuits made during or after the relevant Advanced Order Commitment period, but does include any order for a Partial Private Circuit cancelled as a result of the inability of the Dominant Provider to secure consents for Partial Private Circuits.

20. In calculating (80% of B) in paragraphs 16 to 19A inclusive of this Direction the outcome shall, if not an integer, be rounded down to the nearest integer.

Service level agreements

General

21. The Dominant Provider shall set a Committed Delivery Date for each Partial Private Circuit or Network Infrastructure ordered from it by a Third Party.

22. For each Partial Private Circuit or Network Infrastructure ordered from the Dominant Provider by a Third Party, the Dominant Provider shall provide to a Third Party Firm Offer Confirmation in the manner set out in the definition section of this Direction.

23. The time scales and levels of fixed individual compensation payments to be payable under the service level agreement shall be those set out in the Directions, unless otherwise agreed between the Dominant Provider and a Third Party, or except to the extent that Ofcom otherwise consents.

24. Unless otherwise agreed between the Dominant Provider and a Third Party, any fixed individual compensation payment, or reimbursement pursuant to paragraph 28 of this Direction, payable by the Dominant Provider to a Third Party pursuant to the Directions shall be offset by the Dominant Provider against the money owed to it by the Third Party, on a quarterly basis. The Dominant Provider shall keep complete and accurate records of the amounts it has offset in accordance with this paragraph. Such records shall be made available by the Dominant Provider following a request by a Third Party.

25. The Dominant Provider shall not be liable to pay fixed individual compensation payments pursuant to the Directions for periods of delay which arise due to circumstances beyond its reasonable control. The Dominant Provider shall notify a Third Party as soon as reasonably practicable when such circumstances arise. All contractors or sub-contractors of whatever level, and their respective employees, servants and agents, shall for the purpose of this paragraph be treated as employees

of the Dominant Provider. Major construction works shall not be considered circumstances beyond the Dominant Provider's reasonable control.

26. The Dominant Provider shall ensure that any time limits set out in this Direction shall not apply to a Third Party to the extent that periods of delay arise due to circumstances beyond its reasonable control. The Third Party shall notify the Dominant Provider as soon as reasonably practicable when such circumstances arise. All contractors or sub-contractors of whatever level, and their respective employees, servants and agents, shall for the purpose of this paragraph be treated as employees of the relevant Third Party.

27. The Dominant Provider shall, at the reasonable request of a Third Party, postpone the Committed Delivery Date of a Partial Private Circuit or Network Infrastructure if such postponement is technically and organisationally reasonable. In agreeing to such a postponement the Dominant Provider shall only charge for reasonable additional expenses it has directly incurred as a result of the postponement.

28. The Dominant Provider shall only postpone the Committed Delivery Date of a Partial Private Circuit or Network Infrastructure with the written agreement of the Third Party. The Dominant Provider shall inform the Third Party as soon as reasonably possible of any proposed postponement of the Committed Delivery Date. Where such a postponement takes place the Dominant Provider shall reimburse the Third Party for any reasonable additional cost incurred by the Third Party as a direct result of the postponement.

29. The FOC Receipt Interval shall be a maximum of:

- five working days for Partial Private Circuits of less than 2 Mbit/s; and
- eight working days for Partial Private Circuits of 2 Mbit/s and above and Network Infrastructure;

regardless of how many Partial Private Circuits are, or the amount of Network Infrastructure is, ordered at a particular site.

30. The Dominant Provider shall ensure that the FOC Acceptance Interval is a maximum of one working day for Partial Private Circuits of 2 Mbit/s or below and two working days for Partial Private Circuits above 2 Mbit/s and Network Infrastructure. Where a Third Party has not informed the Dominant Provider of its Acceptance of Terms or rejection of the order within five working days of the FOC Date, the Dominant Provider may cancel the Third Party's order.

31. The Dominant Provider shall keep complete and accurate records of the ordering, provision and repair of Partial Private Circuits and Network Infrastructure it provides to a Third Party.

32. Where any Partial Private Circuit or Network Infrastructure which is ordered by a Third Party is in excess of 110% (by volume), rounded up to the nearest integer where necessary, of its Advance Order Commitment or Advance Capacity Order, the applicable Requisite Period set out in the tables in paragraphs 39 and 49 of this Direction shall be extended by 50% and rounded up to the nearest working day, where necessary, for the purposes of calculating fixed individual compensation payments.

Unliquidated damages

33. Nothing in the PPC Contract, as amended by the Directions, shall prevent a Third Party from bringing a claim against the Dominant Provider for unliquidated damages over and above the fixed individual compensation payments set out in the Directions.

Partial Private Circuits

Quick quote and high bandwidth quote on line

34. The Dominant Provider shall provide to a Third Party, upon written request, the necessary wholesale network and pricing information to enable the Third Party to obtain the same information for Partial Private Circuits that is available to the Dominant Provider's retail arm, for its “Quick Quote” and “High Bandwidth Quote On Line” quote facilities.

Concurrency of Partial Private Circuit and ISH link and CSH link delivery times

35. Where a Third Party has ordered a Partial Private Circuit, and the operation of the circuit requires the provision of an ISH link or CSH link, the Dominant Provider shall ensure that the delivery dates of the Partial Private Circuit and the CSH link or ISH link are the same.

Expedited orders

36. Upon a Third Party’s written request, the Dominant Provider shall make reasonable endeavours to set a Committed Delivery Date for Partial Private Circuits within 50% of the relevant Requisite Period set out in the table in paragraph 39 of this Direction, rounded up to the nearest working day where necessary, for at least 15% (by volume) of a Third Party’s previous month’s order. The Third Party shall inform the Dominant Provider which particular Partial Private Circuits it shall endeavour to be expedited pursuant to this paragraph. This paragraph shall only apply to the delivery of Partial Private Circuits of 2 Mbit/s or less. This paragraph shall not apply to Partial Private Circuits which exceed 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party’s Advance Order Commitment.

37. Paragraph 46 of this Direction does not apply to orders of Partial Private Circuits made pursuant to paragraph 36 of this Direction.

Time scales for fixed individual compensation

38. Where the Committed Delivery Date for Partial Private Circuits is set by the Dominant Provider later than the relevant Requisite Period (as set out in the table in paragraph 39 of this Direction) without the agreement of a Third Party, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 5% of the monthly rental for the Private Partial Circuit delayed, per working day or part of a working day in respect of the period commencing immediately on the expiry of the relevant Requisite Period and expiring on the Installation Date.

39. Where the Committed Delivery Date for Partial Private Circuits is set by the Dominant Provider either, later than the relevant Requisite Period (as set out in the table below) but with the agreement of a Third Party, or within the Requisite Period, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 5% of the monthly rental for the Private Partial

Circuit delayed, per working day or part of a working day in respect of the period commencing immediately on the working day following the Committed Delivery Date and expiring on the Installation Date.

Bandwidth of Partial Private Circuit	Requisite Period
64 kbit/s	10 working days
128 kbit/s to 256 kbit/s delivered over copper	10 working days
128 kbit/s to 256 kbit/s delivered over fibre	30 working days
320 kbit/s to 960 kbit/s	30 working days
1 Mbit/s	30 working days
2 Mbit/s	30 working days
Subsequent Partial Private Circuit of 2 Mbit/s	10 working days
34 Mbit/s to 155 Mbit/s	57 working days
Above 155 Mbit/s	72 working days

Third Party's ability to cancel order

40. Where the Provisioning Interval exceeds the relevant Requisite Period set out in the table in paragraph 39 of this Direction, a Third Party shall be allowed to cancel its order for a Partial Private Circuit after the Cancellation Threshold (as set out in the table below) has expired. The Cancellation Threshold shall commence upon the expiry of the relevant Requisite Period set out in the table in paragraph 39 of this Direction. The Requisite Periods in the table in paragraph 39 shall apply, for the purposes of this paragraph, regardless of whether there is a delay in delivery of a Partial Private Circuit which is due to circumstances beyond the Dominant Provider's reasonable control but not including delay by a Third Party.

Requisite Period set out in the table in paragraph 39 of this Direction	Cancellation Threshold
10 working days or less	10 working days
11 to 20 working days	15 working days
21 to 40 working days	20 working days
41 to 60 working days	25 working days
Over 60 working days	30 working days

41. Where a Third Party cancels a Partial Private Circuit pursuant to paragraph 40 of this Direction, the Dominant Provider shall not charge the Third Party for the circuit and shall not charge for cancelling the circuit. The Dominant Provider shall also be liable to pay the Third Party any fixed individual compensation payments accumulated pursuant to the PPC Contract as amended by the Directions.

Reduced Requisite Periods for Partial Private Circuits

42. The Dominant Provider shall ensure that for at least 70% (by volume) of Partial Private Circuits of a particular bandwidth delivered by the Dominant Party to a Third Party within a three month period (such period not to be calculated on a rolling basis) the Committed Delivery Date is set within the relevant Reduced Requisite Period (as set out in the table below).

Bandwidth of Partial Private Circuit	Reduced Requisite Period
128 kbit/s to 256 kbit/s delivered over fibre	20 working days
320 kbit/s to 960 kbit/s	20 working days
1 Mbit/s	20 working days
2 Mbit/s	20 working days
34 Mbit/s to 155 Mbit/s	45 working days
Above 155 Mbit/s	50 working days

43. In calculating the 70% (by volume) of Partial Private Circuits to which paragraph 42 of this Direction applies the following shall not be included:

- Partial Private Circuits of 64 kbit/s;

- Partial Private Circuits of 128 kbit/s to 256 kbit/s delivered over copper;

- Subsequent Private Partial Circuits of 2Mbit/s;

- Partial Private Circuit orders to which paragraph 36 of this Direction applies; and

- Partial Private Circuits which exceed 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Order Commitment.

44. The Reduced Requisite Periods set out in the table in paragraph 42 of this Direction apply only if, in the previous three month reporting period (such period not to be calculated on a rolling basis), a Third Party has ordered from the Dominant Provider:

- at least ten Partial Private Circuits of the same bandwidth where such Partial Private Circuits are 2 Mbit/s or less; or

- at least two Partial Private Circuits of the same bandwidth where such Partial Private Circuits are more than 2 Mbit/s.

45. For the purposes of this Direction, in determining whether 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Order Commitment has been exceeded, the calculation shall be at a national level for each individual Partial Private Circuit bandwidth category and applied in the order in which the Partial Private Circuits were ordered by the Third Party.

Multiple orders

46. Where the Dominant Provider receives an order for more than 10 Partial Private Circuits at one site from a Third Party, the relevant Requisite Period applicable to determine whether the Dominant Provider shall pay fixed individual compensation as set out in paragraphs 38 and 39 of this Direction, shall be the relevant Requisite Period set out in the table in paragraph 39 of this Direction increased by a maximum of 50%. The Dominant Provider shall inform the Third Party of the revised time scales as soon as reasonably practicable.

Availability of service

47. When total loss of service (i.e. total loss of service for one minute or longer) occurs three or more times, within a 12 month period, to a Partial Private Circuit, the Third Party shall not be liable to the Dominant Provider for the monthly rental in any subsequent month where total loss of failure occurs to the Partial Private Circuit, until such time as 12 months have passed and the Partial Private Circuit has not suffered total loss of service. Occurrences of total loss of service which result in the Dominant Provider being liable to pay fixed individual compensation pursuant to paragraphs 58, 59 and 61 of this Direction, shall not be considered as an occurrence of a total loss of service for the purposes of this paragraph.

Network Infrastructure

Time scales for fixed individual compensation

48. Where the Committed Delivery Date for Network Infrastructure is set by the Dominant Provider later than the relevant Requisite Period (as set out in the table in paragraph 49 of this Direction) without the agreement of a Third Party, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 0.3% of the connection fee for the Network Infrastructure, per working day, or part of a working day, in respect of the period commencing immediately on the expiry of the relevant Requisite Period and expiring on the Installation Date,

49. Where the Committed Delivery Date for Network Infrastructure is set by the Dominant Provider either, later than the relevant Requisite Period (as set out in the table below) but with the agreement of a Third Party, or within the Requisite Period, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 0.3% of the connection fee for the Network Infrastructure, in respect of the period commencing immediately on the working day following the Committed Delivery Date and expiring on the Installation Date.

Network Infrastructure	Requisite Period (where the Dominant Provider needs to carry out Civil Works)	Requisite Period (where the Dominant Provider does not need to carry out Civil Works)
ISH links	110 working days	85 working days
CSH links	110 working days	85 working days
ISH links – provision of new multiplexor on an		

existing Point of Connection	Not applicable	60 working days
ISH links - provision of extra STM-1 interface on existing STM-1 ISH SMA4 multiplexor	Not applicable	60 working Days
CSH links - provision of new multiplexor on existing Point of Connection	Not applicable	60 working Days
CSH links requiring only provision of new tributary card on existing multiplexor	Not applicable	25 working Days

Third Party's ability to cancel order

50. Where the Provisioning Interval exceeds the relevant Requisite Period set out in the table in paragraph 49 of this Direction, a Third Party shall be allowed to cancel its order for Network Infrastructure after the Cancellation Threshold (as set out in the table below) has expired. The Cancellation Threshold shall commence upon the expiry of the relevant Requisite Period set out in the table in paragraph 49 of this Direction. The Requisite periods in the table in paragraph 49 shall apply, for the purposes of this paragraph, regardless of whether there is a delay in delivery of Network Infrastructure which is due to circumstances beyond the Dominant Provider's reasonable control but not including delay by a Third Party.

Requisite Period set out in the table in paragraph 49 of this Direction	**Cancellation Threshold**
21 to 40 working days	20 working days
41 to 60 working days	25 working days
61 to 90 working days	30 working days
Over 90 working days	40 working days

51. Where a Third Party cancels Network Infrastructure pursuant to paragraph 50 of this Direction, the Dominant Provider shall not charge the Third Party for the Network Infrastructure and shall not charge for cancelling the Network Infrastructure. The Dominant Provider shall also be liable to pay the Third Party any fixed compensation payments accumulated pursuant to the PPC Contract as amended by the Directions.

Reduced Requisite periods for Network Infrastructure

52. The Dominant Provider shall ensure that for at least 70% (by volume) of the total VC4-equivalents of Network Infrastructure delivered by it to a Third Party during a three month period (such period not to be calculated on a rolling basis) the Committed Delivery Date is set within the relevant Reduced Requisite Period (as set out in the table below).

Network Infrastructure	**Reduced Requisite Period (where the Dominant**	**Reduced Requisite Period where the Dominant**

	Provider needs to carry out Civil Works)	Provider does not need to carry out Civil Works)
ISH Inks	75 working days	60 working days
CSH links	75 working days	60 working days
ISH links - provision of new multiplexor on an existing Point of Connection	Not applicable	40 working days
ISH links - provision of extra STM-1 interface on existing STM-1 ISH SMA4 multiplexor	Not applicable	40 working days
CSH links - provision of new multiplexor on existing Point of Connection	Not applicable	40 working days
CSH links requiring only provision of new tributary card on existing multiplexor	Not applicable	20 working days

53. In calculating the 70% (by volume) of the total VC4-equivalents of Network Infrastructure to which paragraph 52 of this Direction applies the following shall not be included:

- Network Infrastructure which exceeds 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Capacity Order.

54. The Reduced Requisite Periods set out in the table in paragraph 52 of this Direction only apply if, in the previous three month reporting period (such period not to be calculated on a rolling basis) a Third Party has ordered from the Dominant Provider at least 2 VC4-equivalents of Network Infrastructure. For the purposes of this paragraph the first reporting period of three months shall be the first such reporting period falling after 30 working days following the date of publication of this Direction.

55. For the purposes of this Direction, in determining whether 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Capacity Order has been exceeded, the calculation shall be made using VC4-equivalents at each Point of Connection applied in the order in which the Network Infrastructure was ordered by the Third Party.

Repair of Partial Private Circuits and Network Infrastructure

56. Where the Dominant Provider offers to a Third Party Regular Care and Enhanced Care for Partial Private Circuits and Network Infrastructure it shall do so at a cost orientated price and as set out in the table below:

	Operational hours	Repair/response time	Extras
Regular Care	Normal working hours	Response within one working day of receipt of a fault report by a Third Party. Repair within two working days of receipt of a fault report by a Third Party.	If a fault is not remedied within two working days of receipt of a fault report by a Third Party, the Dominant Provider shall call the Third Party to report progress being made to remedy the fault.
Enhanced Care	24 hours per day, 7 days per week (including public and bank holidays).	Response within four hours of receipt of a fault report from a Third Party. Repair within five hours of receipt of a fault report by a Third Party.	If a fault is not remedied within five hours of receipt of a fault report by a Third Party, the Dominant Provider shall contact the Third Party to report progress being made to remedy the fault.

57. Receipt by the Dominant Provider from a Third Party of a report of a fault concerning a Partial Private Circuit or Network Infrastructure, shall be acknowledged by the Dominant Provider to the Third Party within one hour.

58. Where the Dominant Provider fails to repair a Partial Private Circuit within the time limits set out in the table in paragraph 56 of this Direction it shall pay to the Third Party a fixed individual compensation payment as set out in paragraphs 59 to 63 inclusive of this Direction in respect of the period commencing on the expiry of the applicable repair time set out in the table in paragraph 56 and expiring at the time the Partial Private Circuit or Network Infrastructure is repaired.

59. Where the Third Party has ordered the Dominant Provider's Regular Care for Partial Private Circuits, the Dominant Provider shall pay the Third Party an amount equal to 100% of the monthly rental payable for the type of Partial Private Circuit being repaired per working day, or part of a working day, of delay is repair.

60. Where the Third Party has ordered the Dominant Provider's Regular Care for Network Infrastructure, the Dominant Provider shall pay the Third Party an amount equal to 1% of the connection fee for the type of Network Infrastructure being repaired per working day, or part of a working day, of delay in repair.

61. Where the Third Party has ordered the Dominant Provider's Enhanced Care for Partial Private Circuits, the Dominant Provider shall pay the Third Party an amount equal to 15% of the monthly rental payable for the type of Partial Private Circuit being repaired per hour, or part of an hour, of delay in repair.

62. Where the Third Party has ordered the Dominant Provider's Enhanced Care for Network Infrastructure, the Dominant Provider shall pay the Third Party an amount equal to 0.15% of the connection fee for the type of Network Infrastructure being repaired per hour, or part of an hour, of delay in repair.

63. The Dominant Provider shall not be liable to pay fixed individual compensation pursuant to paragraphs 60 and 62 of this Direction where it is also liable for fixed individual compensation pursuant to paragraphs 59 and 61 of this Direction where

the Partial Private Circuit is being provided using the Network Infrastructure which is being repaired.

64. The Dominant Provider shall attend, and invite Third Parties to regular meetings to review the level of service provided by it in relation to Partial Private Circuits and related Network Infrastructure.

Change of speed or interface

65. The Dominant Provider shall offer to provide within a reasonable period of a Third Party's written request, the ability to alter the speed or interface of a Partial Private Circuit.

66. The Dominant Provider shall ensure that it provides to a Third Party a Partial Private Circuit variant for the services to which paragraph 65 of this Direction applies, which are equivalent to the services it currently provides on a retail basis for retail leased lines.

STM-1, ISH and CSH handover

67. The Dominant Provider shall offer to provide within a reasonable period of a Third Party's written request for a Synchronous Transfer Mode–1 ("STM-1"), an interface using an ISH link or CSH link; and handover pursuant to paragraph 68 of this Direction. Such link or handover shall be provided by way of network connecting apparatus capable of providing no more than the STM-1 capacity ordered by the Third Party.

68. The Dominant Provider shall within a reasonable period of a Third Party's written request, handover in a footway jointing chamber for Partial Private Circuits at a reasonable point nominated by the Third Party. The footway jointing chamber shall be located in the same Dominant Provider local serving exchange area as the Dominant Provider Serving Node to which the Partial Private Circuits being handed over are connected.

Equipment re-use

69. Paragraph 70 of this Direction shall only apply to the re-use of Plesiochronous Digital Hierarchy ("PDH") and Synchronous Digital Hierarchy ("SDH") equipment situated at a third party site ("Equipment").

70. The Dominant Provider may reject a request by a Third Party for re-use of PDH Equipment if such re-use would be incompatible with its network. Any such rejection by the Dominant Provider shall be made within 10 working days of a request by the Third Party and fully justified in writing to the requesting Third Party at the same time as the request is rejected.

Other Circuits

71. Unless Ofcom otherwise agrees, the Dominant Provider shall, offer to provide Partial Private Circuit with no single point of failure, within a reasonable period of a Third Party's request.

72. The Dominant Provider shall offer to provide, within a reasonable period of a Third Party's written request, a Partial Private Circuit which is dual pathed and

diversely routed from a third party customer's premises to a Third Party's single Point of Connection.

73. The Dominant Provider shall offer to provide to a Third Party, within a reasonable period of the Third Party's written request, transparent transmission capacity at all bandwidths up to and including a bandwidth capacity of two megabits per second between a radio base station and a Point of Connection with a Third Party's electronic communications network connected to the nearest appropriate digital cross connection node.

74. The Dominant Provider shall provide to the Third Party the product set out in paragraph 73 of this Direction on terms and conditions which, where appropriate, are comparable to the provisions relating to service level agreements, forecasting penalties and migration set out in paragraphs 1 to 64 of this Direction and the Direction made under Condition H3 and published on the same day as this Direction.

LLU Backhaul

75. The Dominant Provider shall offer to enter into an agreement with any Third Party, within a reasonable period of the Third Party's written request, LLU Backhaul Services (as defined in the Dominant Provider's Standard LLU Backhaul Agreement as at the date of publication of this Direction, but with the necessary changes in order to ensure compliance with the Directions) on reasonable terms. Without prejudice to the generality of this requirement, terms will not be considered reasonable if they fail to include a Service Level Agreement ("SLA") such as could be expected to be negotiated in a competitive market.

76. The agreement for the supply of LLU Backhaul Services by the Dominant Provider shall include an SLA relating to the supply of such a product. This SLA shall include provision for the reasonable payment of fixed compensation by the Dominant Provider to a Third Party in cases where the Dominant Provider fails to fulfill its obligations under the SLA relating to the supply of LLU Backhaul Services.

77. The Dominant Provider shall implement this Direction within 10 working days of its publication.

78. This Direction shall take effect on the day it is published.

Jim Niblett

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002
24 June 2004

Direction under Condition H3 imposed on British Telecommunications plc as a result of the analysis of the market for the provision of wholesale trunk segments at all bandwidths in which British Telecommunications plc has been found to have significant market power

WHEREAS:

(A) Ofcom having considered every representation duly made, and thereafter pursuant to sections 48(1) and 79 of the Act by way of publication of a notification identified the relevant services markets, has designated British Telecommunications plc as having significant market power in the market for the provision of wholesale trunk segments at all bandwidths within the United Kingdom;

(B) this Direction concerns matters to which Condition H3 relates;

(C) for the reasons set out in the explanatory statement accompanying this Direction, Ofcom is satisfied that, in accordance with section 49(2) of the Act, this Direction is:

(i) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;
(ii) not such as to discriminate unduly against particular persons or against a particular description of persons;
(iii) proportionate to what it is intended to achieve; and
(iv) in relation to what it is intended to achieve, transparent;

(D) for the reasons set out in the explanatory statement accompanying this Direction, Ofcom is satisfied that he has acted in accordance with the relevant duties set out in sections 3 and 4 of the Act;

(E) Ofcom has published a notification of the proposed Direction in accordance with section 49 of the Act;

(F) Ofcom has considered every representation about the proposed Direction duly made to him; and

NOW, therefore, pursuant to Condition H3 Ofcom makes the following Direction:

For the purpose of interpreting this Direction the definitions set out in the Direction made under Condition H1 and published on the same day as this Direction shall apply.

Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them.

The Interpretation Act 1978 shall apply as if this Direction was an Act of Parliament.

Headings and titles shall be disregarded.

The Dominant Provider shall provide Partial Private Circuits in accordance with this Direction. This Direction shall only apply to the extent that the Dominant Provider provides a Partial Private Circuit which contains an element of a product or service which falls within the market for wholesale trunk segments.

Charges for capacity on third party customer infrastructure

1. Where a Third Party already has a Partial Private Circuit connected to third party customer infrastructure which was in situ before 1 August 2001, and has a Subsequent Partial Private Circuit connected to the same third party customer infrastructure the Dominant Provider shall charge no more than the amount set out in the table below for such a connection.

Bandwidth	Charge (£)
2 Mbit/s	2,275
34 Mbit/s and 45 Mbit/s	15,383
140 Mbit/s and 155 Mbit/s	33,954

Charge for change of speed or interface

2. The Dominant Provider shall charge no more than £94 for changing the speed or interface of a 1 Mbit Partial Private Circuit.

Charges for reclassification of BT Retail Private Circuits

3. Where a BT Retail Private Circuit is migrated to a Partial Private Circuit in accordance with the PPC Contract, as amended by the Directions, it shall charge the Third Party no more than £37 per migrated circuit as a reclassification charge.

Charges for failed migration orders

4. Where the Dominant Provider informs a Third Party that a request for migration of a BT Retail Private Circuit to a Partial Private Circuit is invalid in accordance with the PPC Contract, as amended by the Directions, it shall charge the Third Party no more than £36 per request rejected.

Infrastructure tariff conversion charges

5. The Dominant Provider's infrastructure tariff conversion charges to a Third Party shall be no more than the amounts set out in the Annex of this Direction and calculated in accordance with the Annex of this Direction.

6. The Dominant Provider may also levy an infrastructure tariff conversion charge, in accordance with the Annex of this Direction, on a BT Retail Private Circuit which was in situ on the date that this Direction enters into force and being provided to a Third Party which at the time was a non-schedule 2 public operator which was running a telecommunications system under a telecommunications licence, but which is subsequently provided to a Third Party after the date of publication of this Direction. This paragraph shall apply whether or not the non-schedule 2 public operator which was running a telecommunications system under a telecommunications licence, and the Third Party, are the same person.

Equipment re-use

7. Paragraphs 8 to 12 inclusive of this Direction shall only apply to the re-use of Plesiochronous Digital Hierarchy ("PDH") and Synchronous Digital Hierarchy ("SDH") equipment situated at a third party site ("Equipment").

8. Where a Third Party requests the Dominant Provider to provide Equipment at a specific site, and the Third Party has already used the Equipment at the site, the Dominant Provider shall allow the Third Party to re-use the Equipment at that site, subject to paragraph 70 of the Direction made under Condition H1 and published on the same day as this Direction, without charge, subject to paragraph 11 of this Direction, or at any other third party site without charge, subject to paragraphs 10 and 11 of this Direction, for as long as the Equipment remains available for use.

9. Where a Third Party requests the Dominant Provider to provide Equipment at a specific site, and the Third Party has not used the Equipment at the site, the Dominant Provider shall allow the Third Party to re-use the Equipment at the site, subject to paragraph 70 of the Direction made under Condition H1 and published on the same day as this Direction, and shall charge the Third Party a discounted charge equivalent to its remaining value. Such discounted charge shall be cost orientated and shall be passed on to the Third Party which had previously used the Equipment at that site, less any reasonable costs incurred by the Dominant Provider in administrating a system necessary to implement paragraphs 7 to 12 inclusive of this Direction and paragraph 70 of the Direction made under Condition H1 and published on the same day as this Direction.

10. The Dominant Provider shall only charge a Third Party for testing SDH Equipment before such equipment is re-used, where such infrastructure is to be re-located. Such charge shall be cost orientated. In addition the Dominant Provider may levy a cost orientated charge for re-locating SDH Equipment.

11. The Dominant Provider may levy a cost orientated charge for testing PDH Partial Private Circuit Equipment before such infrastructure is re-used. In addition The Dominant Provider may levy a cost orientated charge for re-locating PDH Equipment.

12. The charge contained in paragraph 9 of this Direction shall:
- reflect all the incremental costs necessarily and efficiently incurred;
- reflect the value of the Equipment being re-used; and
- be non-discriminatory.

Cost orientation of LLU Backhaul prices

13. The Licensee shall ensure that its charges for LLU Backhaul Services (as defined in the Dominant Provider's Standard LLU Backhaul Agreement as at the date of publication of this Direction, but with the necessary changes in order to ensure compliance with the Directions) are consistent with its charges for those elements which are common to LLU Backhaul Services and Partial Private circuits.

14. The Annex to this Direction shall form part of the Direction.

15. The Dominant Provider shall implement this Direction within 10 working days of its publication.

16. This Direction shall take effect on the day it is published.

Jim Niblett

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002
24 June 2004

Annex – Infrastructure tariff conversion charges

Charges for BT Retail Private Circuits below 1 Mbit circuits which were installed up to and including 31 December 2001

Time between the date that the BT Retail Private Circuit was installed, and an Operator requested such circuit to be migrated to a Partial Private Circuit.	Charge (£)
Up to 1 month	189
2 months or more	0

Charges for 1 Mbit BT Retail Private Circuits which were installed up to and including 31 December 2001

Time between the date that the BT Retail Private Circuit was installed, and an Operator requested such circuit to be migrated to a Partial Private Circuit.	Charge (£)
Up to 1 month	2621
2 months	2369
3 months	2113
4 months	1855
5 months	1594
6 months	1330
7 months	1064
8 months	795
9 months	522
10 months	247
11 months or more	0

Charges for 2 Mbit/s for BT Retail Private Circuits which were installed up to and including 31 December 2001

Time between the date that the BT Retail Private Circuit was installed, and an Operator requested such circuit to be migrated to a Partial Private Circuit.	Charge (£)
Up to 1 month, or more	0

Charges for 34 Mbit/s and 45 Mbit/s BT Retail Private Circuits which where installed up to and including 31 December 2001

Time between the date that the BT Retail Private Circuit was installed, and an Operator requested such circuit to be migrated to a Partial Private Circuit.	Charge (£)
Up to 1 month	21673
2 months	19067
3 months	16433
4 months	13772
5 months	11082
6 months	8364
7 months	5617
8 months	2841
9 months	35
10 months or more	0

Charges for 140 Mbit/s and 155 Mbit/s for BT Retail Private Circuits installed up to and including 31 December 2001

Time between the date that the BT Retail Private Circuit was installed, and an Operator requested such circuit to be migrated to a Partial Private Circuit.	Charge (£)
Up to 1 month	49593
2 months	48618
3 months	47633
4 months	46637
5 months	45631
6 months	44614
7 months	43587
8 months	42549
9 months	41499
10 months	40439
11 months	39367
12 months	38284
13 months	37189
14 months	36083
15 months	34965
16 months	33835
17 months	32693
18 months	31539
19 months	30373
20 months	29194
21 months	28003
22 months	26799
23 months	25583
24 months	24353
25 months	23111
26 months	21855
27 months	20586
28 months	19304
29 months	18008
30 months	16698
31 months	15374
32 months	14036
33 months	12685
34 months	11318
35 months	9938
36 months	8542
37 months	7132
38 months	5707
39 months	4267
40 months	2811
41 months	1340

42 months or more	0

Charges for BT Retail Private Circuits below 1 Mbit installed after 31 December 2001

Time between the date that the BT Retail Private Circuit was installed, and an Operator requested such circuit to be migrated to a Partial Private Circuit.	**Charge (£)**
Up to 1 month	270
2 months	45
3 months or more	0

Charges for 1 Mbit for BT Retail Private Circuits installed after 31 December 2001

Time between the date that the BT Retail Private Circuit was installed, and an Operator requested such circuit to be migrated to a Partial Private Circuit.	**Charge (£)**
Up to 1 month, or more	0

Charges for 2 Mbit/s for BT Retail Private Circuits installed after 31 December 2001

Time between the date that the BT Retail Private Circuit was installed, and an Operator requested such circuit to be migrated to a Partial Private Circuit.	**Charge (£)**
Up to 1 month, or more	0

Charges for 34 Mbit/s and 45 Mbit/s for BT Retail Private Circuits installed after 31 December 2001

Time between the date that the BT Retail Private Circuit was installed, and an Operator requested such circuit to be migrated to a Partial Private Circuit.	**Charge (£)**
Up to 1 month	20762
2 months	18147
3 months	15503
4 months	12832
5 months	10132
6 months	7404
7 months	4647
8 months	1860
9 months or more	0

Charges for 140 Mbit/s and 155 Mbit/s for BT Retail Private Circuits installed after 31 December 2001

Time between the date that the BT Retail Private Circuit was installed, and an Operator requested such circuit to be migrated to a Partial Private Circuit.	**Charge (£)**
Up to 1 month	49593
2 months	48618
3 months	47633
4 months	46637

5 months	45631
6 months	44614
7 months	43587
8 months	42549
9 months	41499
10 months	40439
11 months	39367
12 months	38284
13 months	37189
14 months	36083
15 months	34965
16 months	33835
17 months	32693
18 months	31539
19 months	30373
20 months	29194
21 months	28003
22 months	26799
23 months	25583
24 months	24353
25 months	23111
26 months	21855
27 months	20586
28 months	19304
29 months	18008
30 months	16698
31 months	15374
32 months	14036
33 months	12685
34 months	11318
35 months	9938
36 months	8542
37 months	7132
38 months	5707
39 months	4267
40 months	2811
41 months	1340
42 months or more	0

Direction under Condition H6 imposed on British Telecommunications plc as a result of the analysis of the market for the provision of wholesale trunks segments at all bandwidths in which British Telecommunications plc has been found to have significant market power

WHEREAS:

(A) Ofcom having considered every representation duly made, and thereafter pursuant to sections 48(1) and 79 of the Act by way of publication of a notification identified the relevant services markets, has designated British Telecommunications plc as having significant market power in the market for the provision of wholesale trunk segments at all bandwidths within the United Kingdom;

(B) this Direction concerns matters to which Condition H6 relates;

(C) for the reasons set out in the explanatory statement accompanying this Direction, Ofcom is satisfied that, in accordance with section 49(2) of the Act, this Direction is:

(i) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;
(ii) not such as to discriminate unduly against particular persons or against a particular description of persons;
(iii) proportionate to what it is intended to achieve; and
(iv) in relation to what it is intended to achieve, transparent;

(D) for the reasons set out in the explanatory statement accompanying this Direction, Ofcom is satisfied that he has acted in accordance with the relevant duties set out in sections 3 and 4 of the Act;

(E) Ofcom has published a notification of the proposed Direction in accordance with section 49 of the Act;

(F) Ofcom has considered every representation about the proposed Direction duly made to him; and

NOW, therefore, pursuant to Condition H6 Ofcom makes the following Direction:

For the purpose of interpreting this Direction the definitions set out in the Direction made under Condition H1 and published on the same day as this Direction shall apply.

Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them.

The Interpretation Act 1978 shall apply as if this Direction was an Act of Parliament.

Headings and titles shall be disregarded.

This Direction shall only apply to the extent that the Dominant Provider provides a Partial Private Circuit which contains an element of a product or service which falls within the market for wholesale trunk segments.

1. The Dominant Provider shall, on a quarterly basis, publish the following information for each Third Party to whom it provides Partial Private Circuits on an individual and anonymous basis; and on an aggregated basis with respect to all such Third Parties on an anonymous basis:

- its performance with respect to Committed Delivery Dates, Requisite Periods, Reduced Requisite Periods, FOC Receipt Intervals, repair and availability of service;

- a list of incidences of circumstances beyond the reasonable control of the Dominant Provider, split by reason;

- the percentage of each Third Party's previous month's orders having Committed Delivery Dates quoted within 50% of the Requisite Periods set out in the table in paragraph 39 of the Direction made under Condition H1 and published on the same day as this Direction;

- the number and percentage of instances where each Third Party exceeds the applicable FOC Acceptance Interval, set out by bandwidth, for Partial Private Circuits;

- the number and percentage of instances where each Third Party exceeds the applicable FOC Acceptance Interval for Network Infrastructure;

- the average amount by which each Third Party exceeds the applicable FOC Acceptance Interval, set out by bandwidth, for Partial Private Circuits;

- the average amount by which each Third Party exceeds the applicable FOC Acceptance Interval for Network Infrastructure;

- the number and percentage of orders for Partial Private Circuits rejected by the Dominant Provider;

- the number and percentage of orders for Network Infrastructure rejected by the Dominant Provider;

- the mean response time to fault reports relating to Partial Private Circuits and Network Infrastructure sent to the Dominant Provider by Third Party; and

- new installation fault report rate relating to Partial Private Circuits.

The aggregated reports shall include the Dominant Provider's performance in respect of provision to its retail arm.

2. The Dominant Provider shall ensure that its monitoring systems are sufficient to enable it, at all times, to be capable, following a written request by Ofcom, to publish the following information for each Third Party to whom it provides Partial Private Circuits on an individual and anonymous basis; and on an aggregated basis with respect to all such Third Parties on an anonymous basis:

- list of reasons for rejections of orders;

- list of reasons for faults; and

- list of reasons for any Committed Delivery Dates beginning 10 working days later than the relevant Requisite Period.

The aggregated reports shall include the Dominant Provider's performance in respect of provision to its retail arm.

3. Nothing in this Direction shall require the Dominant Provider to publish confidential information relating to its business or that of a Third Party.

4. The information set out in paragraph 1 above shall be first published within three months of this Direction taking effect and every three months thereafter.

5. Publication referred to in paragraph 1 above shall be effected by:

(a) for information on an aggregated basis, by placing a copy of the information on any relevant website operated or controlled by the Dominant Provider;

(b) for information on an individual basis, by electronic mailing the information to the relevant Third Party; and

(c) sending a copy of the information to Ofcom.

6. This Direction shall take effect on the day it is published.

Jim Niblett

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002
24 June 2004

Direction under Condition HH1 imposed on British Telecommunications plc as a result of the analysis of the market for the provision of alternative interface symmetric broadband origination at all bandwidths in which British Telecommunications plc has been found to have significant market power

WHEREAS:

(A) Ofcom having considered every representation duly made, and thereafter pursuant to sections 48(1) and 79 of the Act by way of publication of a notification identified the relevant services markets, has designated British Telecommunications plc as having significant market power in the market for the provision of alternative interface symmetric broadband origination at all bandwidths within the United Kingdom but not including the Hull Area;

(B) this Direction concerns matters to which Condition HH1 relates;

(C) for the reasons set out in the explanatory statement accompanying this Direction, Ofcom is satisfied that, in accordance with section 49(2) of the Act, this Direction is:

(i) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;
(ii) not such as to discriminate unduly against particular persons or against a particular description of persons;
(iii) proportionate to what it is intended to achieve; and
(iv) in relation to what it is intended to achieve, transparent;

(D) for the reasons set out in the explanatory statement accompanying this Direction, Ofcom is satisfied that he has acted in accordance with the relevant duties set out in sections 3 and 4 of the Act;

(E) Ofcom has published a notification of the proposed Direction in accordance with section 49 of the Act;

(F) Ofcom has considered every representation about the proposed Direction duly made to him; and

NOW, therefore, pursuant to Condition HH1 Ofcom makes the following Direction:

1. For the purpose of interpreting this Direction the following definitions shall apply:

“Act” means the Communications Act 2003;

“Dominant Provider” means British Telecommunications plc, whose registered company number is 1800000 and any British Telecommunications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by Section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

“Hull Area” means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the

Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc; and

“Third Party” means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network.

2. Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them.

3. The Interpretation Act 1978 shall apply as if this Direction was an Act of Parliament.

4. The Dominant Provider shall offer to enter into an agreement with any Third Party, within a reasonable period of the Third Party’s written request, LLU Backhaul Services (as set out in the Annex to this Direction) on reasonable terms. Without prejudice to the generality of this requirement, terms will not be considered reasonable if they fail to include a Service Level Agreement (“SLA”) such as could be expected to be negotiated in a competitive market.

5. The agreement for the supply of LLU Backhaul Services by the Dominant Provider shall include an SLA relating to the supply of such a product. This SLA shall include provision for the reasonable payment of fixed compensation by the Dominant Provider to a Third Party in cases where the Dominant Provider fails to fulfill its obligations under the SLA relating to the supply of LLU Backhaul Services.

6. The Dominant Provider shall implement this Direction within 10 working days of its publication.

7. This Direction shall take effect on the day it is published.

8. The Annex to this Direction shall form part of the Direction.

Jim Niblett

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002
24 June 2004

Annex

The provision of dedicated transmission capacity by the Dominant Provider, at all bandwidths from ten to one thousand megabits per second (inclusive) between a local loop unbundling Third Party's equipment at a Main Distribution Frame site of the Dominant Provider and a site within a Third Party's electronic communications network connected to an appropriate Dominant Provider node within a distance of 25 radial km.

Direction under Condition HH3 imposed on British Telecommunications plc as a result of the analysis of the market for the provision of alternative interface symmetric broadband origination at all bandwidths in which British Telecommunications plc has been found to have significant market power

WHEREAS:

(A) Ofcom having considered every representation duly made, and thereafter pursuant to sections 48(1) and 79 of the Act by way of publication of a notification identified the relevant services markets, has designated British Telecommunications plc as having significant market power in the market for the provision of alternative interface symmetric broadband origination at all bandwidths within the United Kingdom but not including the Hull Area;

(B) this Direction concerns matters to which Condition HH3 relates;

(C) for the reasons set out in the explanatory statement accompanying this Direction, Ofcom is satisfied that, in accordance with section 49(2) of the Act, this Direction is:

(i) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;
(ii) not such as to discriminate unduly against particular persons or against a particular description of persons;
(iii) proportionate to what it is intended to achieve; and
(iv) in relation to what it is intended to achieve, transparent;

(D) for the reasons set out in the explanatory statement accompanying this Direction, Ofcom is satisfied that he has acted in accordance with the relevant duties set out in sections 3 and 4 of the Act;

(E Ofcom has published a notification of the proposed Direction in accordance with section 49 of the Act;

(F) Ofcom has considered every representation about the proposed Direction duly made to him; and

NOW, therefore, pursuant to Condition HH3 Ofcom makes the following Direction:

1. For the purpose of interpreting this Direction the following definitions shall apply:

"Act" means the Communications Act 2003;

"Dominant Provider" means British Telecommunications plc, whose registered company number is 1800000 and any British Telecommunications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by Section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

"Hull Area" means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the

Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc; and

“Third Party” means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network.

2. Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them.

3. The Interpretation Act 1978 shall apply as if this Direction was an Act of Parliament.

4. The Licensee shall ensure that its charges for LLU Backhaul Services (as set out in the Annex to this Direction) are consistent with its charges for those elements which are common to LLU Backhaul Services and Partial Private Circuits (i.e. a circuit provided pursuant to the Dominant Provider's Standard PPC Handover Agreement as at the date of publication of this Direction and in accordance with any directions made by Ofcom).

5. The Annex to this Direction shall form part of the Direction.

6. The Dominant Provider shall implement this Direction within 10 working days of its publication.

7. This Direction shall take effect on the day it is published.

Jim Niblett

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002
24 June 2004

Annex

The provision of dedicated transmission capacity by the Dominant Provider, at all bandwidths from ten to one thousand megabits per second (inclusive) between a local loop unbundling Third Party's equipment at a Main Distribution Frame site of the Dominant Provider and a site within a Third Party's electronic communications network connected to an appropriate Dominant Provider node within a distance of 25 radial km.

Annex F

Discontinuation notices

NOTICE TO BRITISH TELECOMMUNICATIONS PLC UNDER PARAGRAPH 9 OF SCHEDULE 18 TO THE COMMUNICATIONS ACT 2003

Notice that certain continued provisions set out in the continuation notice given to British Telecommunications plc on 23 July 2003 will cease to have effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Communications Act 2003

1. The Office of Communications ('Ofcom'), in accordance with Paragraph 9(9) of Schedule 18 to the Communications Act 2003 ('the Act') hereby give notice to British Telecommunications plc ('BT') that certain continued provisions contained in Schedule 1 to the continuation notice given to BT on 23 July 2003, which had effect from 25 July 2003, ('the Continuation Notice'), will cease to have effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Communications Act 2003, to the extent set out in Schedule 1 to this notice ('the Discontinued Provisions').

2. In giving this notice, Ofcom have, in accordance with Paragraph 9 (11) of Schedule 18 to the Act, taken all steps necessary for enabling them to decide whether or not to set a condition under Chapter 1 of Part 2 of the Act for the purpose of replacing the continued provisions and whether or not to exercise their power to set a condition under that Chapter for that purpose.

3. All directions, determinations, consents and other provisions which were continued under the Continuation Notice by virtue of Paragraph 9(8) of Schedule 18 to the Act will also cease to have effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and 394(7) of the Communications Act 2003, to the extent that they were given or made for the purposes of the Discontinued Provisions.

4. To the extent that the Continuation Notice does not cease to have effect under Paragraph 1 of this notice, the Continuation Notice shall continue to have effect until Ofcom have given a further notice to BT in accordance with Paragraph 9(9) of Schedule 18 to the Act that it shall cease to have effect.

5. The Director General of Telecommunications issued a consultation as to his proposals to discontinue the Discontinued Provisions on 2 October 2003 and requested comments by 9.00 a.m. on 16 October 2003. Ofcom have taken into account the comments he received during that consultation.

6. In this notice, except as otherwise provided or unless the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act. For the purposes of interpreting this notice, headings and titles shall be disregarded.

Jim Niblett

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002

24 June 2004

Schedule 1

The following continued provisions which were contained in Schedule 1 to the Continuation Notice will cease to have effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Communications Act 2003, to the extent set out below.

Conditions 43, 45, 46, 47, 48, 49, 55, 65, 69 and 73 in so far as those conditions relate to the markets which have been reviewed in the Final Statement and Notification to the Review of the retail leased lines, symmetric broadband origination and wholesale trunk segments markets published by Ofcom on 24 June 2004 (‘the Market Review’). Such conditions will be replaced by SMP services conditions imposed on BT by way of the Notification set out in Annex D of the Market Review.

NOTICE TO BRITISH TELECOMMUNICATIONS PLC AND THE OPERATORS LISTED IN THE SCHEDULE TO THIS NOTICE UNDER PARAGRAPH 22 OF SCHEDULE 18 TO THE COMMUNICATIONS ACT 2003

Notice that the “Direction under Condition 45.2 of the Public Telecommunications Licence granted to British Telecommunications plc and under Regulations 6(3) and 6(4) of the Telecommunications (Interconnection) Regulations 1997” regarding the interconnection of Partial Private Circuits made on 27 March 2001 and continued by the continuation notice given to British Telecommunications plc and the operators listed in the Schedule to this notice on 21 July 2003 will be revoked with effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Communications Act 2003

1. The Office of Communications (‘Ofcom’), in accordance with Paragraph 22(8) of Schedule 18 to the Communications Act 2003 (‘the Act’) hereby gives notice to British Telecommunications plc (‘BT’) and the operators listed in the Schedule to this notice (‘the Operators’) that the “Direction under Condition 45.2 of the Public Telecommunications Licence granted to British Telecommunications plc and under Regulations 6(3) and 6(4) of the Telecommunications (Interconnection) Regulations 1997” regarding the interconnection of Partial Private Circuits made on 27 March 2001 and which was continued by the continuation notice given to BT and the Operators on 21 July 2003, which had effect from 25 July 2003 (“the Continued Interconnection Direction”), will be revoked with effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Communications Act 2003.

2. In giving this notice, Ofcom have, in accordance with Paragraph 22(9) of Schedule 18 to the Act, taken all steps necessary for enabling them to decide whether or not to set a condition under Chapter 1 of Part 2 of the Act for the purpose of replacing the Continued Interconnection Direction and whether or not to exercise his power to set a condition under that Chapter for that purpose.

3. The Director General of Telecommunications issued a consultation as to his proposals to revoke the Continued Interconnection Direction on 2 October 2003 and requested comments by 9.00 a.m. on 16 October 2003. Ofcom have taken into account the comments he received during that consultation.

4. In this notice, except as otherwise provided or unless the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act. For the purposes of interpreting this notice, headings and titles shall be disregarded.

Jim Niblett

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002

24 June 2004

Schedule

1. Energis Communications Ltd
2. MCI WorldCom Ltd
3. Fibernet (UK) Ltd
4. Thus plc
5. Cable & Wireless Communications (Mercury) Ltd (Cable and Wireless UK)
6. Global Crossing (UK) Telecommunications Ltd
7. GTS Network (Ireland) Ltd
8. COLT telecommunications
9. NEOSCorp Ltd
10. MLL Telecommunications Ltd (Microcell Links Ltd)

NOTICE TO BRITISH TELECOMMUNICATIONS PLC UNDER PARAGRAPH 22 OF SCHEDULE 18 TO THE COMMUNICATIONS ACT 2003

Notice that the "Direction by the Director General of Telecommunications under Regulation 6(3) of the Telecommunications (Interconnection) Regulations 1997" regarding LLU Backhaul Services made on 5 August 2002 and continued by the continuation notice given to British Telecommunications plc on 21 July 2003 will be revoked with effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Communications Act 2003

1. The Office of Communications ('Ofcom'), in accordance with Paragraph 22(8) of Schedule 18 to the Communications Act 2003 ('the Act') hereby gives notice to British Telecommunications plc ('BT') that the "Direction by the Director General of Telecommunications under Regulation 6(3) of the Telecommunications (Interconnection) Regulations 1997" regarding LLU Backhaul Services made on 5 August 2002 and which was continued by the continuation notice given to BT on 21 July 2003, which had effect from 25 July 2003 ("the Continued Interconnection Direction"), will be revoked with effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Communications Act 2003.

2. In giving this notice, Ofcom have, in accordance with Paragraph 22(9) of Schedule 18 to the Act, taken all steps necessary for enabling them to decide whether or not to set a condition under Chapter 1 of Part 2 of the Act for the purpose of replacing the Continued Interconnection Direction and whether or not to exercise his power to set a condition under that Chapter for that purpose.

3. The Director General of Telecommunications issued a consultation as to his proposals to revoke the Continued Interconnection Direction on 2 October 2003 and requested comments by 9.00 a.m. on 16 October 2003. Ofcom have taken into account the comments he received during that consultation.

4. In this notice, except as otherwise provided or unless the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act. For the purposes of interpreting this notice, headings and titles shall be disregarded.

Jim Niblett

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002

24 June 2004

NOTICE TO BRITISH TELECOMMUNICATIONS PLC AND THE OPERATORS LISTED IN THE SCHEDULE TO THIS NOTICE UNDER PARAGRAPH 22 OF SCHEDULE 18 TO THE COMMUNICATIONS ACT 2003

Notice that the “Direction pursuant to Regulation 6(6) of the Telecommunications (Interconnection) Regulations 1997” regarding the provision of partial private circuits made on 12 June 2002 and continued by the continuation notice given to British Telecommunications plc and the operators listed in the Schedule to this notice on 21 July 2003 will be revoked with effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Communications Act 2003

1. The Office of Communications (‘Ofcom’), in accordance with Paragraph 22(8) of Schedule 18 to the Communications Act 2003 (‘the Act’) hereby gives notice to British Telecommunications plc (‘BT’) and the operators listed in the Schedule to this notice (‘the Operators’) that the “Direction pursuant to Regulation 6(6) of the Telecommunications (Interconnection) Regulations 1997” regarding the provision of partial private circuits made on 12 June 2002 and which was continued by the continuation notice given to BT and the Operators on 21 July 2003, which had effect from 25 July 2003 (“the Continued Interconnection Direction”), will be revoked with effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Communications Act 2003.

2. In giving this notice, Ofcom have, in accordance with Paragraph 22(9) of Schedule 18 to the Act, taken all steps necessary for enabling them to decide whether or not to set a condition under Chapter 1 of Part 2 of the Act for the purpose of replacing the Continued Interconnection Direction and whether or not to exercise his power to set a condition under that Chapter for that purpose.

3. The Director General of Telecommunications issued a consultation as to his proposals to revoke the Continued Interconnection Direction on 2 October 2003 and requested comments by 9.00 a.m. on 16 October 2003. Ofcom have taken into account the comments he received during that consultation.

4. In this notice, except as otherwise provided or unless the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act. For the purposes of interpreting this notice, headings and titles shall be disregarded.

Jim Niblett

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002

24 June 2004

Schedule

1. GTS
2. Fibernet
3. Global Crossing
4. NeosCorp
5. Thus
6. WorldCom
7. Energis
8. Colt

NOTICE TO BRITISH TELECOMMUNICATIONS PLC AND THE OPERATORS LISTED IN THE SCHEDULE TO THIS NOTICE UNDER PARAGRAPH 22 OF SCHEDULE 18 TO THE COMMUNICATIONS ACT 2003

Notice that the "Direction pursuant to Regulation 6(6) of the Telecommunications (Interconnection) Regulations 1997 relating to a dispute between British Telecommunications plc and GTS, Fibernet, Global Crossing, NeosCorp, Thus, WorldCom, Energis and Colt concerning the supply of partial private circuits" made on 16 October 2002 and continued by the continuation notice given to British Telecommunications plc and the operators listed in the Schedule to this notice on 21 July 2003 will be revoked with effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Communications Act 2003

1. The Office of Communications ('Ofcom'), in accordance with Paragraph 22(8) of Schedule 18 to the Communications Act 2003 ('the Act') hereby gives notice to British Telecommunications plc ('BT') and the operators listed in the Schedule to this notice ('the Operators') that the "Direction pursuant to Regulation 6(6) of the Telecommunications (Interconnection) Regulations 1997 relating to a dispute between British Telecommunications plc and GTS, Fibernet, Global Crossing, NeosCorp, Thus, WorldCom, Energis and Colt concerning the supply of partial private circuits" made on 16 October 2002 and which was continued by the continuation notice given to BT and the Operators on 21 July 2003, which had effect from 25 July 2003 ("the Continued Interconnection Direction"), will be revoked with effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Communications Act 2003.

2. In giving this notice, Ofcom have, in accordance with Paragraph 22(9) of Schedule 18 to the Act, taken all steps necessary for enabling them to decide whether or not to set a condition under Chapter 1 of Part 2 of the Act for the purpose of replacing the Continued Interconnection Direction and whether or not to exercise his power to set a condition under that Chapter for that purpose.

3. The Director General of Telecommunications issued a consultation as to his proposals to revoke the Continued Interconnection Direction on 2 October 2003 and requested comments by 9.00 a.m. on 16 October 2003. Ofcom have taken into account the comments he received during that consultation.

4. In this notice, except as otherwise provided or unless the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act. For the purposes of interpreting this notice, headings and titles shall be disregarded.

Jim Niblett

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002

24 June 2004

Schedule

1. GTS
2. Fibernet
3. Global Crossing
4. NeosCorp
5. Thus
6. WorldCom
7. Energis
8. Colt

NOTICE TO BRITISH TELECOMMUNICATIONS PLC AND THE OPERATORS LISTED IN THE SCHEDULE TO THIS NOTICE UNDER PARAGRAPH 22 OF SCHEDULE 18 TO THE COMMUNICATIONS ACT 2003

Notice that the "Direction under Regulation 6(6) of the Telecommunications (Interconnection) Regulations 1997 relating to a dispute between British Telecommunications plc and GTS, Fibernet, Global Crossing, NeosCorp, Thus, WorldCom, Energis and Colt concerning the provision of partial private circuits" made on 20 December 2002 and continued by the continuation notice given to British Telecommunications plc and the operators listed in the Schedule to this notice on 21 July 2003 will be revoked with effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Communications Act 2003

1. The Office of Communications ('Ofcom'), in accordance with Paragraph 22(8) of Schedule 18 to the Communications Act 2003 ('the Act') hereby gives notice to British Telecommunications plc ('BT') and the operators listed in the Schedule to this notice ('the Operators') that the "Direction under Regulation 6(6) of the Telecommunications (Interconnection) Regulations 1997 relating to a dispute between British Telecommunications plc and GTS, Fibernet, Global Crossing, NeosCorp, Thus, WorldCom, Energis and Colt concerning the provision of partial private circuits" made on 20 December 2002 and which was continued by the continuation notice given to BT and the Operators on 21 July 2003, which had effect from 25 July 2003 ("the Continued Interconnection Direction"), will be revoked with effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Communications Act 2003.

2. In giving this notice, Ofcom have, in accordance with Paragraph 22(9) of Schedule 18 to the Act, taken all steps necessary for enabling them to decide whether or not to set a condition under Chapter 1 of Part 2 of the Act for the purpose of replacing the Continued Interconnection Direction and whether or not to exercise his power to set a condition under that Chapter for that purpose.

3. The Director General of Telecommunications issued a consultation as to his proposals to revoke the Continued Interconnection Direction on 2 October 2003 and requested comments by 9.00 a.m. on 16 October 2003. Ofcom have taken into account the comments he received during that consultation.

4. In this notice, except as otherwise provided or unless the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act. For the purposes of interpreting this notice, headings and titles shall be disregarded.

Jim Niblett

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002

24 June 2004

Schedule

1. GTS
2. Fibernet
3. Global Crossing
4. NeosCorp
5. Thus
6. WorldCom
7. Energis
8. Colt

NOTICE TO BRITISH TELECOMMUNICATIONS PLC AND VODAFONE LIMITED UNDER PARAGRAPH 22 OF SCHEDULE 18 TO THE COMMUNICATIONS ACT 2003

Notice that the "Direction under Regulation 6(6) of the Telecommunications (Interconnection) Regulations 1997 ("the Regulations") relating to a dispute between British Telecommunications plc and Vodafone Limited concerning the provision of partial private circuits" regarding wholesale connections between BT's and Vodafone's networks (radio base station backhaul circuits) made on 23 June 2003 and continued by the continuation notice given to British Telecommunications plc and Vodafone Limited on 21 July 2003 will be revoked with effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Communications Act 2003

1. The Office of Communications ('Ofcom'), in accordance with Paragraph 22(8) of Schedule 18 to the Communications Act 2003 ('the Act') hereby gives notice to British Telecommunications plc ('BT') and Vodafone Limited ('Vodafone') that the "Direction under Regulation 6(6) of the Telecommunications (Interconnection) Regulations 1997 ("the Regulations") relating to a dispute between British Telecommunications plc and Vodafone Limited concerning the provision of partial private circuits" regarding wholesale connections between BT's and Vodafone's networks (radio base station backhaul circuits) made on 23 June 2003 and which was continued by the continuation notice given to BT and the Operators on 21 July 2003, which had effect from 25 July 2003 ("the Continued Interconnection Direction"), will be revoked with effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Communications Act 2003.

2. In giving this notice, Ofcom have, in accordance with Paragraph 22(9) of Schedule 18 to the Act, taken all steps necessary for enabling them to decide whether or not to set a condition under Chapter 1 of Part 2 of the Act for the purpose of replacing the Continued Interconnection Direction and whether or not to exercise his power to set a condition under that Chapter for that purpose.

3. The Director General of Telecommunications issued a consultation as to his proposals to revoke the Continued Interconnection Direction on 2 October 2003 and requested comments by 9.00 a.m. on 16 October 2003. Ofcom have taken into account the comments he received during that consultation.

4. In this notice, except as otherwise provided or unless the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act. For the purposes of interpreting this notice, headings and titles shall be disregarded.

Jim Niblett

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002

24 June 2004

NOTICE TO KINGSTON COMMUNICATIONS (HULL) PLC UNDER PARAGRAPH 9 OF SCHEDULE 18 TO THE COMMUNICATIONS ACT 2003

Notice that certain continued provisions set out in the continuation notice given to Kingston Communications (Hull) plc on 23 July 2003 will cease to have effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Communications Act 2003

1. The Office of Communications ('Ofcom'), in accordance with Paragraph 9(9) of Schedule 18 to the Communications Act 2003 ('the Act') hereby give notice to Kingston Communications (Hull) plc ('Kingston') that certain continued provisions contained in Schedule 1 to the continuation notice given to Kingston on 23 July 2003, which had effect from 25 July 2003, ('the Continuation Notice'), will cease to have effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Communications Act 2003, to the extent set out in Schedule 1 to this notice ('the Discontinued Provisions').

2. In giving this notice, Ofcom have, in accordance with Paragraph 9 (11) of Schedule 18 to the Act, taken all steps necessary for enabling them to decide whether or not to set a condition under Chapter 1 of Part 2 of the Act for the purpose of replacing the continued provisions and whether or not to exercise their power to set a condition under that Chapter for that purpose.

3. All directions, determinations, consents and other provisions which were continued under the Continuation Notice by virtue of Paragraph 9(8) of Schedule 18 to the Act will also cease to have effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and 394(7) of the Communications Act 2003, to the extent that they were given or made for the purposes of the Discontinued Provisions.

4. To the extent that the Continuation Notice does not cease to have effect under Paragraph 1 of this notice, the Continuation Notice shall continue to have effect until Ofcom have given a further notice to Kingston in accordance with Paragraph 9(9) of Schedule 18 to the Act that it shall cease to have effect.

5. The Director General of Telecommunications issued a consultation as to his proposals to discontinue the Discontinued Provisions on 2 October 2003 and requested comments by 9.00 a.m. on 16 October 2003. Ofcom have taken into account the comments he received during that consultation.

6. In this notice, except as otherwise provided or unless the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act. For the purposes of interpreting this notice, headings and titles shall be disregarded.

Jim Niblett

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002

24 June 2004

Schedule 1

The following continued provisions which were contained in Schedule 1 to the Continuation Notice will cease to have effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Communications Act 2003, to the extent set out below.

Conditions 43, 45, 46, 47, 48, 49 and 55 in so far as those conditions relate to the markets which have been reviewed in the Final Statement and Notification to the Review of the retail leased lines, symmetric broadband origination and wholesale trunk segments markets published by Ofcom on 24 June 2004 (‘the Market Review’). Such conditions will be replaced by SMP services conditions imposed on Kingston by way of the Notification set out in Annex D of the Market Review.

Annex G

List of representations received in response to the draft notification dated 18 December 2003

BT

Bulldog

Easynet

Energis

European Commission

Kingston

OPTA

UKCTA

Vtesse

Annex H

Glossary

Alternative interface symmetric broadband origination (AISBO)
A form of symmetric broadband origination service providing symmetric capacity between two sites, generally using an Ethernet IEEE 802.3 interface.

Asymmetric Digital Subscriber Line (ADSL)
A technology that allows the use of a copper line to send a high data rate in one direction and a lower data rate in the other.

Asynchronous Transfer Mode (ATM)
A technology that enables data transfer asynchronously relative to its input into the communications system. The data is put into cells and transmitted through the network to be re-constructed at the output.

Bandwidth
The physical characteristic of a telecommunications system that indicates the speed at which information can be transferred. In analogue systems, it is measured in cycles per second (Hertz) and in digital systems in bits per second (Bit/s).

Current Cost Accounting (CCA)
An accounting convention, where assets are valued and depreciated according to their current replacement cost whilst maintaining the operating or financial capital of the business entity.

Customer Sited Handover (CSH)
Interconnection occurs at a communications provider's premises.

Customer Premises Equipment (CPE)
Sometimes referred to as customer apparatus or consumer equipment, being equipment on consumers' premises which is not part of the public telecommunications network and which is directly or indirectly attached to it.

DLE (Digital Local Exchange)
The telephone exchange to which customers are connected, usually via a concentrator.

DMSU (Digital Main Switching Unit)
The main type of tandem switch, primarily used for conveying long distance calls. DMSUs form the backbone of the trunk network.

Frame Relay service
A packet switched data service providing for the interconnection of Local Area Networks and access to host computers at up to 2Mbit/s.

Fully allocated cost (FAC)
An accounting approach under which all the costs of the company are distributed between its various products and services. The fully allocated cost of a product or service may therefore include some common costs that are not directly attributable to the service.

In Span Handover (ISH)
Interconnection occuring at a point between BT's premises and a communications provider's premises

kbit/s
kilobits per second. A measure of speed of transfer of digital information.

Leased line
A permanently connected communications link between two premises dedicated to the customers' exclusive use.

Local Loop Unbundling (LLU) backhaul circuit
A circuit provided by BT that enables the connection of a communications provider's DSLAM to a communications provider's point of connection with BT's SDH network.

Long Run Incremental Cost (LRIC)
The cost caused by the provision of a defined increment of output given that costs can, if necessary, be varied and that some level of output is already produced.

Mbit/s
Megabits per second. A measure of speed of transfer of digital information.

Partial Private Circuit (PPC)
A generic term used to describe a category of private circuits that terminate

at a point of connection between two communications providers' networks. It is therefore the provision of transparent transmission capacity between a customer's premises and a point of connection between the two communications providers' networks. It may also be termed a part leased line.

Plesiochronous Digital Hierarchy (PDH)
An older method of digital transmission used before SDH which requires each stream to be multiplexed or demultiplexed at each network layer and does not allow for the addition or removal of individual streams from larger assemblies.

Points of Connection (POC)
A point where one communications provider interconnects with another communications provider for the purposes of connecting their networks to 3rd party customers in order to provide services to those end customers.

Public Switched Telephone Network (PSTN)
A telecommunications network providing voice telephony for the general public.

Radio Base Station (RBS) backhaul circuit
A circuit provided by BT that connects a mobile communications provider's base-station to the mobile communications provider's mobile switching centre.

SSNIP
Small but Significant Non-transitory Increase in Price, usually considered to be 5 to 10 per cent, which is part of the hypothetical monopolist test used in market definition analysis.

Stand Alone Cost
An accounting approach under which the total cost incurred in providing a product is allocated to that product.

Synchronous Digital Hierarchy (SDH)
A method of digital transmission where transmission streams are packed in such a way to allow simple multiplexing and demultiplexing and the addition or removal of individual streams from larger assemblies.

Symmetric broadband origination (SBO)
A symmetric broadband origination service provides symmetric capacity from a customer's premises to an appropriate point of aggregation, generally referred to as a node, in the network hierarchy. In this context, a "customer" refers to any public electronic communications network provider or end user.

Symmetric Digital Subscriber Line (SDSL)
A technology that allows the use of a copper line to send an equal quantity of data (e.g. a television picture) in both directions.

Tier 1
A tier in BT's SDH network that denotes a network of nodes covering areas of high population. These nodes are connected by very high capacity line systems and denote the BT trunk network.

Traditional interface symmetric broadband origination (TISBO)
A form of symmetric broadband origination service providing symmetric capacity from a customer's premises to an appropriate point of aggregation in the network hierarchy, using a CCITT G703 interface.