Oftel Office of Telecommunications

Wholesale Broadband Access Market

Identification and analysis of markets, Determination of market power and Setting of SMP conditions

Explanatory Statement and Notification

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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 has been implemented by Regulations which came into force on 11 December 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. However, Ofcom is not expected to assume full functions under the Act until 29 December 2003. Accordingly, transitional arrangements are in place as described below.

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 Significant Market Power (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 the Director. These continuation notices can be found on Oftel's website at http://www.oftel.gov.uk/publications/eu_directives/cont_notices/index.htm.

Previous consultation

S.4 On 28 April 2003, the Director published a national consultation document entitled "Review of the Wholesale Broadband Access market" ("the First Consultation"). That document invited comments on his proposals for defining asymmetric broadband origination and broadband conveyance markets, on his conclusions about the state of competition in those markets, and on the remedies which might be applied. The period of consultation closed on 7 July 2003.

The present document

S.5 Having considered responses to the First Consultation document, the Director is setting out in the present document his draft decisions relating to asymmetric broadband origination and broadband conveyance markets; the Notification under section 48(2) of the Act recording his proposals is at Annex E.

Stakeholders may make representations within the period ending on 6 February 2004. Arrangements for making representations are explained in Chapter 5.

S.6 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 are also being sent to the European Commission and to other NRAs as, in the Director's opinion, the proposals may affect trade between Member States.

Summary of proposals

Identification of markets

S.8 The products and services under consideration in this document include broadband internet access services. The Director proposes to identify the following economic wholesale markets in accordance with competition law principles, for the purpose of ensuring that regulatory obligations are proportionate and objectively justifiable:

(i) asymmetric broadband origination market in the UK (excluding Hull);
(ii) asymmetric broadband origination market in the Hull area; and
(iii) broadband conveyance market in the UK

S.9 These markets are broadly the same as those described in the First Consultation. The notable difference is that following responses received to the first consultation the Director has revised his proposed definition of 'broadband internet access' to include services which satisfy three criteria: always-on, simultaneous use of voice and data and provision at speeds greater than available with a standard dial-up internet connection.

S.10 The detail of the definitions of these markets, and the approach taken by the Director when identifying these markets, are contained in Chapter 2 to this document. That chapter also explains the differences between the market definitions identified by the Director and those included in the European Commission's Recommendation on relevant markets ("Recommendation").

Assessment of market power

S.11 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"), the Director proposes that SMP is held as set out below.

S.12 Based on evidence presently available to the Director and having considered responses made to the previous consultation, the Director proposes that BT has SMP in the following markets:

(i) asymmetric broadband origination market in the UK (excluding the Hull area); and ;
(ii) broadband conveyance market in the UK.

S.13 Based on evidence presently available to the Director and having considered responses made to the previous consultation, the Director proposes that Kingston plc has SMP in the following markets in the Hull area:

(i) asymmetric broadband origination market.

S.14 These findings are the same as those in the First Consultation document. Full details of the Director's draft decision and reasoning are contained in Chapter 3 of this document.

Regulatory remedies

S.15 Given the position of dominance held by British Telecom plc and Kingston Communications plc – ie: their ability to behave to an appreciable extent independently of competitors, customers and ultimately consumers, the Director proposes to impose conditions as follows;

S.16 The Director proposes the following requirements on BT in the markets identified at S.12:

- requirement to provide Network Access on reasonable request;
- requirement not to unduly discriminate;
- requirement to publish a reference offer;
- requirement to notify terms and conditions;
- requirement to notify technical information;
- requirement to provide quality of service information;
- requirement to establish a statement of requirements for new access;
- requirement to have accounting separation; and

He is also proposing to make a direction under the proposed Network Access SMP condition to require BT to provide ATM Interconnection on a retail minus basis.

S.17 The Director proposes the following requirements on Kingston in the markets identified at S.13:

- requirement to provide Network Access on reasonable request;
- requirement not to unduly discriminate;
- requirement to publish a reference offer;
- requirement to notify terms and conditions;
- requirement to notify technical information; and
- requirement to have accounting separation

S.18 These remedies are broadly the same as those set out in the First Consultation. The main difference is that the Director is proposing to revise the

margin squeeze rule on which basis BT charges for ATM interconnection. Full details of these remedies, including their effect and the reasons for proposing to set these conditions, and the direction under the Network Access SMP condition, are contained in Chapter 4 to this document.

Final steps

S.19 Consultation on the proposals in this document closes on 6 February 2004. The proposals need to be supplemented by detailed proposals for specifying the margin between ATM Interconnection and IPStream charges. A further consultation on these proposals is expected to be published in the first quarter of 2004.

S.20 When the Director has considered any representations made in response to such proposals, including any made by the Commission, he may give effect to the proposals, with or without modifications, by identifying markets, making market power determinations and setting conditions. He will do this by publishing a further Notification/s accompanied by a further and final Explanatory Statement. The main set of proposals may be given effect in advance of those relating to detail of ATM Interconnection charges or at the same time. The Director will, at such time, also give consideration to the discontinuation of current regulation contained in continuation notices as referred to at paragraph S3 above.

Chapter 1

Introduction

Scope of this review and the extent of existing regulation

1.1 This review considers the market (s) for wholesale broadband access products which are key inputs into services such as retail broadband internet access.

A new regulatory regime

1.2 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").

1.3 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 consultation document, 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 former licensing regime. The Universal Service Directive defines a basic set of services that must be provided to end-users. The Access and Interconnection 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 Act").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 by Regulation which came into force on 11 December 2003.

Implementation

1.4 The Act provides for functions, powers and duties to be carried 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. However, Ofcom is not expected to assume full functions under the Act until 29 December 2003. Accordingly, transitional arrangements are in place as described below.

1.5 The Communications Act 2003 (Commencement Order No. 1) Order 2003 has been made under sections 411 and 408 of the Act. This order commences 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 until such time as those functions are transferred back to Ofcom later in the year. Accordingly, references in those provisions of the Act to Ofcom are, for the present time, to be read as references to the Director.

Market reviews

1.6 The new Directives require National Regulatory Authorities ("NRAs") such as Oftel to carry out reviews of competition in communications markets to ensure that regulation remains appropriate in the light of changing market conditions. This document is part of the ongoing market review process which the Director had commenced in anticipation of the new regime.

1.7 Oftel published a national consultation document entitled "Review of the Wholesale Broadband Access market" on 28 April 2003. That document invited comments on proposals for defining asymmetric broadband origination and broadband conveyance markets, on proposals about the state of competition in those markets, and on the remedies which might be applied. The period of consultation closed on 7 July 2003. Having considered responses to the consultation document, the Director is setting out in the present document his refined proposals in the form of a draft decision; the Notification(s) is at Annex E. Stakeholders may make representations within the period ending on 6 February 2004. Arrangements for making representations are explained in Chapter 5.

1.8 Each market review has three parts:

- definition of the relevant market or markets;

- assessment of competition in each market, in particular whether any companies have Significant Market Power (SMP) in a given market, and;
- assessment of what are the appropriate regulatory obligations which should be imposed where there has been a finding of SMP (NRAs are obliged to impose some form of regulation where there is SMP).

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

EC Commission "Recommendation on relevant product and service markets"

1.10 The Commission has identified in its Recommendation, a set of markets in which ex ante regulation may be warranted. The Recommendation seeks to promote harmonisation across the European Community by ensuring that the same product and service 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. Accordingly, NRAs are to define relevant markets appropriate to national circumstances, provided that the utmost account is taken of the product markets listed in the Recommendation (section 79 of the Act).

EC Commission "Guidelines on market analysis and the assessment of SMP"

1.11 The European Commission has also issued Guidelines on market analysis and the assessment of SMP ("SMP Guidelines"). Oftel has produced additional guidelines on the criteria to assess effective competition (see http://oftel.gov.uk/publications/about_oftel/2002/smpg0802.htm). The Director 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. These supplement the SMP Guidelines and replace Oftel's effective competition guidelines issued in August 2000.

Obligation to inform the Commission and other NRAs

1.12 As required by Article 7 of the Framework Directive and sections 50 and 81 of the Act, these draft decisions are also being sent to the European Commission and to other NRAs as, in the Director's opinion, the proposals may affect trade between Member States. The Commission and other NRAs may make comments within the one month consultation period. If the Commission believes that one of the market definitions, or proposals to designate an operator with SMP or proposals to designate no operator with SMP, would create a barrier to

the single market or if the Commission has serious doubts as to its compatibility with Community law, and issues a notice under Article 7(4) of the Framework Directive, the Director is required by section 82 of the Act to delay adoption of these draft measures for a further period of 2 months while the Commission considers its position.

Regulation pending the completion of market reviews

1.13 The new Directives also allow Member States to carry forward some existing regulation until the market reviews have been completed and new conditions are put in place. Continuation notices have therefore been 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.oftel.gov.uk/publications/eu_directives/cont_notices/index.htm

Final steps

1.14 Consulltation on the proposals in this document closes on 6 February 2004. The proposals need to be supplemented by detailed proposals for specifying the margin between ATM Interconnection and IPStream charges. A further consultation on these proposals is expected to be published in the first quarter of 2004. When the Director has considered any representations made in response to such proposals, including any made by the Commission, he may give effect to the proposals, with or without modifications, by identifying markets, making market power determinations and setting conditions. He will do this by publishing a further Notification/s accompanied by a further Explanatory Statement. The main set of proposals may be given effect in advance of those relating to detail of ATM Interconnection charges or at the same time. The Director will, at such time, also give consideration to the discontinuation of current regulation contained in continuation notices as referred to at paragraph 1.13 above. Thereafter, the markets and the new regulatory remedies which have been imposed will be reviewed at appropriate intervals.

Markets considered in this review

1.15 This market review relates to the markets for wholesale broadband access. In the UK, broadband access is predominantly used to deliver high speed internet access at present although it may be used to deliver other services in the future. In the Recommendation the Commission distinguished between three commonly available forms of Internet access (i) dial-up service, (ii) higher bandwidth services using digital subscriber line technologies (or equivalents) or cable modems and (iii) dedicated access.

1.16 The Commission has stated that higher bandwidth or broadband Internet services may be characterised as allowing downstream capacity to end-users in excess of 128 kbits/sec. This definition is broadly consistent with Oftel's thinking outlined in the Direction issued on June 21 2002 relating to ATM interconnection http://www.oftel.gov.uk/publications/broadband/dsl/atmi0602.htm.

1.17 In the First Consultation document, the Director proposed to define broadband internet services as always on services which have a downstream capacity in excess of 256 kbits. Based on the evidence available to the Director and responses to the consultation the Director has revised this definition. The proposed three characteristics for categorising services as broadband are:

- the service is always-on, ie no dial up is required. This feature allows the user to maintain a permanent connection to the network so allowing real time delivery of services such as e-mail;
- it is possible to use both voice and data services simultaneously, whether they are provided together, for example over the same access route, or separately, perhaps using more than one access route; and
- it has a faster downstream speed than a dial up connection.

Oftel's proposed market definition considers that the Internet access speeds that are currently attainable over a dial up connection are: 56kbit/s over an analogue line; 64kbit/s over an ISDN 2 channel and 128 kbit/s over two bonded channels of an ISDN2 line.

1.18 It is the Director's current view that it is necessary for **all** of these characteristics to be present simultaneously for an Internet access service to be defined as broadband. In practice, based on what is currently available in the UK, the services which meet these criteria are above 128kbits and therefore the Director's revised definition is in keeping with the Commission's. This issue is discussed in greater detail in chapter 2.

1.19 The Commission Recommendation also refers to the fact that these services *may* be either symmetric or asymmetric. As explained in Chapter 2 of this document, the Director does not believe that it is appropriate to consider symmetric broadband access as part of this review; this is dealt with in his Review of Leased Lines markets due to be published shortly. Furthermore, Chapter 2 also separates out broadband conveyance services which the Commission has included within the scope of its wholesale broadband access market.

1.20 As set out in the First Consultation, the market reviews are required to be forward looking in their analysis. It is still envisaged that there will be another market review of the services covered by this review in 1 1/2 - 2 years (although precise timing will be a matter for Ofcom) and therefore the analysis will look forward over that time period.

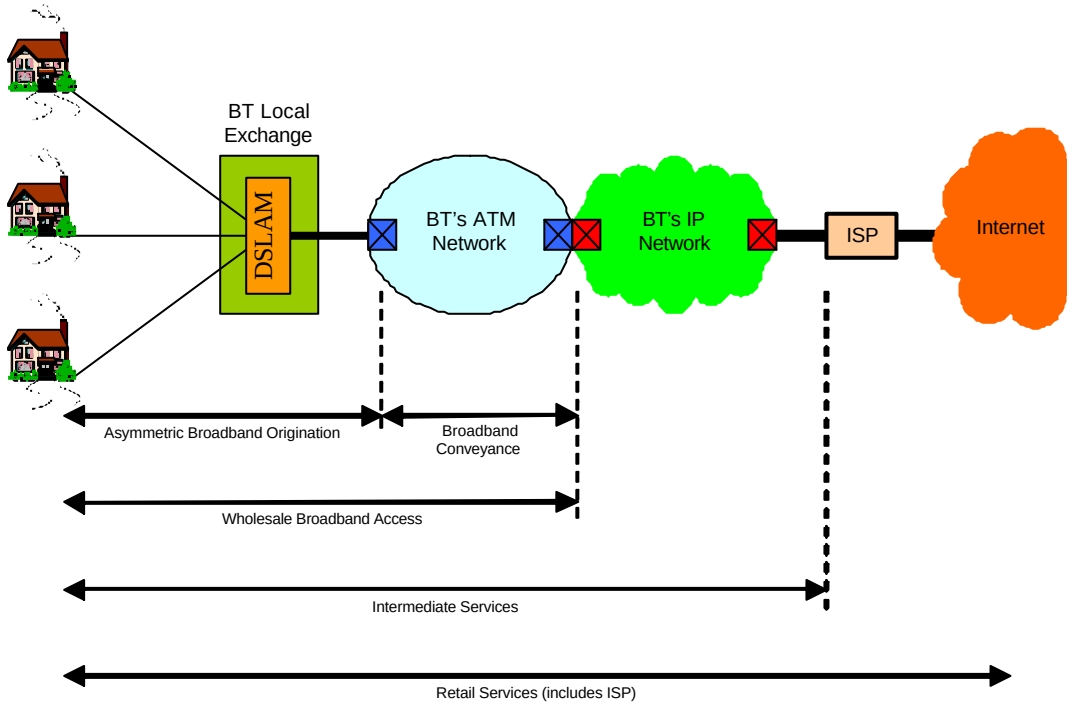
Hierarchy of Services

1.21 In order to understand the analysis in this market review of asymmetric broadband services it is helpful to distinguish a number of vertical levels of supply. Such services are not technologically specific and can be delivered using a range of technologies. Starting from the end user there are potentially five distinct levels in the value chain and each level includes the previous level as one of its inputs. The levels are as follows:

(i) the local access network;
(ii) broadband origination;
(iii) broadband access (origination plus conveyance);
(iv) services delivered to service providers (resale services, eg IPStream)
(v) services delivered to consumers (business or residential) eg broadband internet access

1.22 The services covered by this market review are the underlying wholesale services used to provide broadband internet access services to service providers (referred to as intermediate services) and ultimately to consumers. The diagram below illustrates the services in question. This diagram specifically relates to DSL since this is the technology on which analysis has focused given that BT and Kingston, the two operators who the Director proposes has SMP, both principally use DSL to offer broadband internet access:

Figure 1



The diagram illustrates, in terms of BT's network, the various vertical levels in relation to broadband internet access. The services covered by this market review, in line with the Commission's approach, are those described as providing wholesale broadband internet access. Resale services such as that colloquially known as BT's IPStream (strictly BT IPStream plus BT Central) fall into the category of intermediate services.

1.23 In the rest of this document services at levels (ii) and (iii) are referred to as being at the wholesale level and the market analysis set out in chapters 2 and 3 discusses these services. Services at level (iv) are referred to as "intermediate services" and services at level (v) as "retail services".

Wholesale Broadband Access technologies

1.24 The main technologies used to deliver broadband access are as follows:

ADSL: this technology works over a copper loop to deliver broadband access. It is available in areas where the local exchange has been enabled and is distance limited.

Cable: broadband access over cable – this is only available in areas covered by cable and even then not all the cable in cable areas is capable of sustaining broadband services.

Satellite: two way or one-way. A number of service providers have launched two-way broadband services providing broadband satellite coverage to 99% of the UK. A small minority of people are unable to receive satellite due to line of sight constraints.

Fixed Wireless Access – can be used to offer broadband access but is not widely used.

Power Line Communication (PLC): broadband access over the low-voltage mains distribution network. Currently there are some limited commercial trials of this technology in the UK.

Fibre: is available widely in the UK but is quite expensive and so is typically used to deliver symmetric services such as leased lines.

Existing regulation

1.25 Currently, BT and Kingston comply with the following specific obligations in relation to the wholesale broadband services and also intermediate broadband services as explained above in Figure 1. These are:

- Condition 9 - the obligation to negotiate with any person who reasonably requests such services;
- Condition 43 – requirement to provide telecommunications services other than voice telephony services on request;
- Condition 57 - a prohibition on undue preference and undue discrimination;
- Condition 58 - the requirement for publication of charges, terms and conditions;
- Condition 75 - a prohibition on unfair cross subsidy between different regulatory businesses; and
- Condition 78 – a prohibition on unfair cross subsidy between any of BT's businesses

1.26 Additionally, in June 2002, following an interconnection dispute, Oftel imposed an obligation on BT to provide Network Access in the form of ATM interconnection on a retail- minus pricing basis.

Outline of this document

1.27 The rest of the document is structured as follows:

- Chapter 2 defines the relevant markets;
- Chapter 3 assesses whether there is SMP in those markets
- Chapter 4 sets out proposals for regulatory remedies in the markets where SMP has been found;
- Chapter 5 explains how to make representations.
- Annexes A to C provide supporting information and argument
- Annex E contains the Notification/s containing the Director's draft measures.

Notification

1.28 Annex E contains the formal notification of the proposals made by the Director as a result of the review, including the markets defined, the designation of SMP and the conditions proposed as a result of the market analysis.

1.29 This document, including the formal notification in Annex E, has been made accessible to the European Commission and to the Regulatory authorities in other Member States in accordance with the scheme of the Directives.

Chapter 2

Market definition

Identification of markets

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

2.2 The purpose of this chapter is to define the relevant wholesale markets in which the assessments of market power are to be undertaken. Its structure is as follows: firstly, Oftel's general approach to market definition is discussed. Next, definitions of the relevant retail market are considered insofar as they are logically prior to and affect wholesale market definitions. Then the relevant wholesale markets themselves are defined.

Commission's approach to market definition

2.3 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 set out above and followed by Oftel.

2.4 Paragraph 3.1 also states that 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 Oftel.

2.5 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. Oftel 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, Oftel'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.

2.6 Paragraph 4 of the Recommendation states that retail markets should be examined in a way that is independent of the infrastructure being used, as well as in accordance with the principles of Competition Law. Again this approach is key to Oftel's analysis. Oftel's approach is based on a Competition Law 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.

Account taken of the EU Guidelines/Recommendations

2.7 In formulating his approach to market definition in the context of this market review, the Director is required to take the utmost account of the EU Guidelines in this market analysis, including the Commission's Recommendation on relevant product and service markets.

2.8 The Director has given careful consideration to the markets listed in the Commission's Recommendation. However, starting from the markets identified by the Commission, he proposes some modest variations in order to reflect the characteristics and conditions of the UK markets. The reasons for the differences between the Commission's recommended markets and those defined by the Director are fully described below.

General approach to market definition

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. Oftel's approach to market definition follows that used by UK competition authorities, Office of Fair Trading Market Definition Guideline, (OFT 403) which 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 Throughout this consultation document, markets will be defined first on the demand-side. The analysis of demand-side substitution will be 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.

2.13 Supply-side substitution possibilities will then be 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. 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.

2.14 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.

2.15 A third factor that is sometimes an additional consideration is whether there exist common pricing 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.

Relevance of Existing Regulation

2.16 When defining the relevant markets at both the retail and wholesale levels the Director assumes that there are no regulations in place at the wholesale level that is being considered. 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 regulation at the wholesale level being considered.

Relationship between the wholesale and retail markets

2.17 Although the focus of this market review is the wholesale level, the analysis of retail market definitions is logically prior to the definition of the wholesale markets. This is because the demand for the wholesale service is a derived demand, i.e. the level of demand for the wholesale input depends on the demand for the retail service. The definition of a retail market is likely to affect the assessment of whether Significant Market Power (SMP) in a related wholesale market exists, since the relevant wholesale market will generally, although not necessarily, be as broad as the demand-side substitutes in the relevant retail market.

2.18 In the current review it is necessary to start with retail market boundaries since, although wholesale broadband origination services are not supplied directly to end users but to third parties who wish to supply services downstream that can in turn be used to provide an end-to-end service to end users, it is important for Oftel to consider the potential impact of potential behaviour at the wholesale level. Consequently a decision to regulate the market would be made to protect the competitive process and in doing so to ensure the best deal for end users.

Asymmetric Broadband Internet Access

2.19 There are two main retail broadband services currently available in the UK: leased lines and asymmetric broadband internet access. Leased lines are being considered as part of another market review http://www.oftel.gov.uk/publications/eu_directives/2003/eu_leased_lines/index.htm. This review focuses on asymmetric broadband internet access. The asymmetric nature of these services means that the maximum downstream capacity, ie end user receiving information, is higher than the upstream capacity, ie end user sending information. These services are currently provided using a number of technologies but predominantly, they are provided over DSL enabled 'metallic' telephone lines and broadband enabled cable.

2.20 There are other potential services that broadband access may support in the future. However, it is difficult to include these services in the market analysis until the nature of the services and their economic characteristics are clearer. For example, one possibility is that some such retail services e.g. video-on-demand services, might be close substitutes for existing products and services that do not rely on wholesale broadband inputs. Consequently, this market review focuses

on the primary current broadband retail service of asymmetric broadband internet access.

Summary list of retail markets

2.21 In this chapter the Director will identify the following relevant retail markets:

- Asymmetric broadband internet access which includes services that are always on, allow both voice and data services to be used simultaneously and provide data at speeds greater than a dial up connection. This market includes both business and residential customers in the UK (excluding the Hull Area);
- Asymmetric broadband internet access which includes services that are always on, allow both voice and data services to be used simultaneously and provide data at speeds greater than a dial up connection. This market includes both business and residential customers in the Hull Area.

Retail Markets

2.22 In defining the appropriate retail level market boundaries the Director has used the evidence available and taken account of the responses made to the previous consultation. He has commenced his analysis with defining asymmetric broadband internet access services and then considered whether:

- narrowband internet access services are in the same or a separate market
- mobile internet access services are in the same or a separate market
- symmetric broadband internet access services are in the same or a separate market
- residential and business customers are in the same or a separate market.

The relevant wholesale markets are then defined in the light of the conclusions regarding these issues and market definitions at the retail level.

Definition of Asymmetric Broadband Internet Access

2.23 In his previous consultation the Director defined broadband as being all Internet access at speeds of greater than 256kbit/s. In obtaining this speed distinction the Director considered that over the time scale of the review there was increasingly likely to develop content that would not be practically available with internet access of lower speeds. He considered that the development of such content together with the increasing take up of retail broadband services was likely to create a bandwagon effect. This bandwagon effect would involve both accelerating take up of retail broadband services and increasing broadband tailored content development. This would act to make broadband internet access (as then defined) an increasingly separate retail market. One key application that the Director considered would in practice require access at speeds in excess of

256kbit/s and would be likely to become increasingly important to broadband internet access users was video streaming.

2.24 A number of respondents to the previous consultation have made comments in respect of the Director's proposed split between narrowband and broadband internet access services. The majority of respondents disagreed with the Director's proposed market definition with respect to the speed at which the split between narrowband and broadband should occur – although there was little agreement amongst respondents as to what speed does constitute broadband.

2.25 Generally respondents did not agree that it was likely that the bandwagon effect envisaged by the Director would take place during the time period of the review. Furthermore, respondents did not agree that the ability to stream video should be a defining characteristic of broadband.

2.26 Energis agreed that the definition of broadband should take into account the new content and applications that will become available to internet customers. However, it does not agree that the appropriate definition of broadband is speeds greater than 256kbit/s. Instead it argues that it should be defined at speeds of at least 512kbit/s.

2.27 One respondent considered that the broadband market definition should be wider and that, based on current product offerings, this should include Internet access at 150kbit/s. Indeed, this respondent provided the Director with confidential figures that suggest that the majority of higher speed internet access customers are not currently accessing streamed media of any sort on a regular basis.

2.28 SACOT suggested that there should be a single market for narrowband and broadband Internet access. This is because there is currently insufficient evidence to conclude that there are two separate markets.

2.29 BT believes that it would be appropriate to define a single unmetered internet access market including unmetered narrowband and broadband. This is because, in its view, there is a chain of substitution between the different unmetered Internet access products available, meaning that the prices of these different product offerings are constrained by each other. There would be a separate market for metered Internet access.

2.30 BT disagreed with the suggestion that the types of content outlined by the Director would be likely to spark a bandwagon effect that would increasingly make broadband (as then defined) a separate market. BT argued that there is a reluctance on the part of web site owners to enhance their sites to exploit broadband access as sites would be degraded for narrowband users. It said that in January 2003, not one of the UK's top ten domains offered high-definition web pages. BT also commented that it was implausible in the foreseeable future for

music, video and software downloading to act as content catalysts that would lead to broadband internet access constituting a separate retail market from narrowband. Three main reasons were cited for this. Much of this downloading is probably illegal in BT's view and will not be allowed to continue indefinitely, there exist alternative physical media for such content distribution and copyright owners continue to prefer to use these alternative distribution media.

2.31 After considering all of the comments received, the Director agrees that the ability to stream video may not develop into a key service and should not be used as the basis for providing a speed at which broadband is distinguished from narrowband. Therefore, as set out below, the Director has revised his approach to defining which services should be categorised as broadband internet access for the purposes of his market reviews. In particular, the Director has removed the requirement for broadband internet access to be able to support content that requires greater bandwidth, such as video streaming. However, as is explained below, the Director considers that services delivered over broadband provide the user with an enhanced quality of experience that cannot be matched by narrowband and that there remains the possibility that content only practically attainable over broadband services could develop.

Revised Definition of Asymmetric Broadband Internet Access

2.32 Asymmetric broadband internet access provided via ADSL enabled 'metallic' telephone lines, or through cable (which, as we shall see later, between them currently possess in excess of 99% of the relevant wholesale market), has three distinguishing features or functionalities which are not available in practice using narrowband internet access and that as a group distinguish it as a higher quality service than narrowband internet access:

- the service is always on, ie no dial up is required. This feature allows the user to maintain a permanent connection to the network so allowing real time delivery of services such as email;
- it is possible to use both voice and data services simultaneously, whether they are provided together, for example over the same access route, or separately, perhaps using more than one access route; and
- it has a faster downstream speed than a dial up connection.

2.33 The Director considers that the internet access speeds that are currently attainable over a dial up connection are: 56kbit/s over an analogue line; 64kbit/s over an ISDN 2 digital channel and 128kbit/s over the two bonded digital channels of an ISDN 2 line.

2.34 In the Director's view, it is necessary for all of these characteristics to be present simultaneously for an internet access service to be defined as broadband. Analogue and ISDN2 do not meet all of the above characteristics.

Analogue fails on all three characteristics. ISDN2 fails on the basis that it is not always on and because it cannot achieve speeds greater than 64kbit/s when simultaneously providing voice services.

2.35 The Director currently considers that these distinguishing characteristics of broadband internet access services capture the relevant demand side distinction for UK's existing broadband internet access services. Following the responses to the consultation outlined above and further analysis of the evidence available, described below, the Director considers that the only speed at which he can identify a break in the demand side chain of substitution for the time scale of the current review is that consistent with the step-change of the other two functionalities of being an always on and simultaneous voice and data service, ie faster than dial-up. However, the Director acknowledges that as new internet access services possessing different characteristics along with increasingly tailored high speed content are developed he may need to consider further his definition of broadband internet access services in future market reviews.

2.36 Given the consultation responses the Director has received, he does not now consider that there will be a sufficient step-change in the availability of internet access content practicably requiring speeds in excess of 256kbit/s to be obtainable over the time period of the current review that will have the effect of making internet access above these speeds a separate market. However, the Director does not rule out the potential for such developments to take place in the future such that he will need to keep his internet access market definitions under observation going forwards.

2.37 Whilst the Director does not now consider that step changes in the available content over broadband services is likely to affect the retail market definition of broadband services over the period of this market review, he does still consider that an improved quality of broadband content is likely to develop in the near future given the current increasing growth in the number of broadband customers. The 2002 study by Strategic Policy Research, http://www.oftel.gov.uk/publications/broadband/other/spr0802.pdf, emphasises the inter-related nature of the relationship between the development of more advanced broadband internet content and the growth of broadband customers in the UK. It states that the two are likely to feed off each other in that more customers will be attracted to broadband internet access as the available content develops and more suppliers of advanced content are likely to invest in these services as the take-up of broadband internet access increases. This means that these two effects have the potential in the medium term to lead to a bandwagon effect with respect to the take up of broadband as demand (and willingness to pay) for this high quality service and its content accelerates.

2.38 Indeed, comparison between the Director's February quarterly SME business customer surveys and his earlier November 2001 quarterly survey finds evidence that on average UK SMEs in February were paying around £138 per

month for their broadband internet access services whereas they were paying £102 on average five quarters before, this represents a 35% increase over the period. (NB these surveys control for the compositional effects of small and medium sized companies within the survey). This trend captured in terms of actual customer behaviour appears to be consistent with the Director's argument that as broadband customers experience the greater functionalities of the service so their willingness to pay for broadband internet access over time will increase thus making it an increasingly distinct economic market. The Director notes that his survey data for May 2003 indicates that spend fell to £73 per month, with a further fall to £65 per month in his August 2003 survey. However, the Director considers that these declines are consistent with the recent broadband retail price reductions of business packages by many ISPs, driven by substantial falls in BT's wholesale prices earlier in the year rather than an indication of a reduced willingness to pay.

2.39 The Director still considers that services delivered over broadband provide the user with an enhanced quality of experience that cannot be matched by narrowband. There remains the possibility that content only practically attainable over broadband services could be developed at any time and in particular over the next 18 to 24 months.

2.40 The importance to retail consumers of the three features of broadband can be seen via the Director's residential survey of consumers' use of internet in February 2003, http://www.oftel.gov.uk/publications/research/2003/q12intr0503.htm.[1] When asked to name the most important perceived benefits of broadband compared to their previous narrowband service, 87% cited the faster speed, 32% the always on functionality and 30% the simultaneous internet and voice capability (Figure 6f). These three functionalities were comfortably the most important perceived benefits cited, with the next most important being better quality/more accessible content cited by 17% of users.

2.41 Their importance to retail business consumers can be seen via the Director 's August 2003 business use of the internet survey, http://www.oftel.gov.uk/publications/research/2003/q14intbus1003.pdf. When asked what are their most valued features of broadband, 82% of SMEs with broadband cited the faster speed, 61% the always on functionality and 59% the simultaneous internet and voice capability (Figure 5c). These three functionalities were the most important perceived benefits cited. The next most important being not having to dial up, cited by 42% of SMEs.

2.42 The Director notes that this definition differs, but not practically, to that set out in the Commission's Recommendations where broadband is identified as being at speeds greater than 128kbit/s. In practice, given there are no retail

[1] Questions relating to retail consumers perceived benefits of broadband were not asked in the most recent Oftel residential survey in August 2003.

services in the UK that are offered at speeds of between 64kbit/s and 128kbit/s, the Director's definition is equivalent to that of the Commission's. However, this need not necessarily remain the case as new services are introduced in the UK.

2.43 ntl's 150kbit/s (having been upgraded from 128kbit/s at the beginning of May 2003) internet access service and Tiscali's 256kbit/s internet access service are both always on and operate simultaneously with the customer's telephony service. In the Director's previous consultation these two internet access services were not classified as being broadband. However, under the functional definition currently being consulted on they constitute broadband services as they also provide access speeds in excess of those attainable via dial-up access.

Narrowband and Broadband Internet Access

2.44 As explained in the Director's approach to market definition the key market definition question is whether a small but significant non-transitory increase in price (SSNIP) above the competitive level by a hypothetical monopolist in the supply of asymmetric broadband internet access would be undermined by sufficient customers switching to narrowband, or other services. Moreover, as noted at paragraph 20 of the Commission's SMP Guidelines, the current market reviews are designed to be forward looking in nature.

2.45 It is important to note that the outcome of a SSNIP test based on present customer surveys in the current context largely turns on the willingness of customers to pay for the higher quality services that broadband offers when compared to narrowband services. However, given the nascent and dynamic nature of these services, the Director considers that care should be taken when interpreting the suggestive results of the contemporary SSNIP test. The Director considers it likely that the willingness to pay for broadband services will continue to increase relative to narrowband and other services such that broadband will become an even more distinct economic market in the near future.

2.46 It is likely that customers who were the early adopters of broadband Internet access services would have a higher willingness to pay for the higher functionality on offer compared to the broadband Internet access customers who are now taking up this service. However, this is not to say that later adopters do not have a sufficiently high willingness to pay for broadband Internet access services to mean that a hypothetical monopolist in the supply of broadband Internet access would be unable to profitably increase its prices. As consumers experience broadband and as broadband content develops, it is likely that later adopters' willingness to pay will increase, meaning that a hypothetical monopolist will be more likely to profitably increase its prices. This is an area where Ofcom will be attempting to collect more evidence from its consumer surveys.

2.47 Such likely changes in broadband customer valuation would make the narrowband and broadband Internet access markets progressively more distinct

over the period of this review. A hypothetical monopolist who provides broadband products will then be in a progressively better position to retain its customers following a SSNIP, since the value customers are likely to attach to its products will increasingly exceed the differential between the competitive price levels of narrowband and broadband (plus the SSNIP). It is likely that a consumer's valuation of broadband will be greater after experiencing what it has to offer compared to the valuation of broadband before using the product. In other words, customers are likely to become so used to the quality and services of broadband that they will be increasingly unlikely to switch to narrowband or other services if a hypothetical monopolist raises the price of broadband. Thus, broadband Internet access is increasingly likely to constitute a distinct economic market.

2.48 As is explained below the Director considers this to be the case given the experience of broadband services to date and the likely increased willingness to pay for broadband services as consumers become accustomed to the speeds and increasingly tailored services and content available over broadband.

Current Market Information and the SSNIP Test

2.49 The Director now analyses current broadband retail prices and conducts the SSNIP test with respect to the claimed switching behaviour of today's broadband customers (and thus their current valuations of broadband services). The Director considers that the results of this analysis are both less salient than the forward looking considerations mentioned above such that they are likely to be suggestive rather than conclusive regarding the relevant market definitions in this review.

Application of the SSNIP test

2.50 The Director currently estimates that the majority of broadband customers have migrated from the various types of available narrowband internet access. Results from the Director's August 2003 internet usage quarterly survey http://www.oftel.gov.uk/publications/research/2003/q14intres1003.pdf shows that approximately 45% of residential broadband users have upgraded from a narrowband unmetered package.

2.51 While the Director recognises that customers have moved from narrowband to broadband and that this is likely to continue in the future, it is not clear that this is substitution in response to a relative price change rather than simply customers upgrading to a higher quality product that was not previously available. The Director's consumer survey evidence indicates that it may be the latter because customers value the added functionality of broadband, in particular, the always on element, the ability to make simultaneous voice calls while accessing the Internet, as well as the additional speed.

2.52 The Director thus considers that the closest demand side retail substitute to broadband internet access is likely to be unmetered narrowband internet access.

Given this it would be useful to have evidence on the extent to which changes in the relative competitive prices of broadband and narrowband internet access affect the quantities demanded of the two services. Such information would allow the relevant cross price elasticities to be calculated.

2.53 However, decisive evidence is not yet available, due to the immaturity and dynamic nature of broadband internet access services. A robust analysis of broadband and narrowband cross price elasticities will only be possible as broadband internet access services mature, including the development of broadband content, as prices gravitate to a longer term equilibrium based on maturing underlying costs and as broadband and narrowband customers develop a greater understanding of the relative and diverging functionalities of (and contents available over) these internet access services.

Responses to the consultation on the estimation of own price elasticities

2.54 BT presented a June 2003 econometric study conducted by John Nankervis – University of Surrey that seeks to estimate the own price elasticity of ADSL broadband retail services in the UK. Nankervis argues that the market is broader than that as currently defined by the Director. Nankervis obtains own price elasticity estimates in the range of –2 to –2.5 for UK ADSL services (business and residential combined). However, Nankervis notes that it would have been ideal to build a model for internet access in the UK incorporating narrowband and cable as well as ADSL in order to obtain estimates of cross price elasticities between these alternatives. However, Nankervis is unable to estimate these cross price elasticities. This is due to what he sees as the lack of significant price changes in narrowband and cable internet access that occurred during his period of analysis. Furthermore, this period of analysis is necessarily based on a very short time series (less than two years, May 2001 – March 2003).

2.55 The Director considers that the lack of insight into the actual switching behaviour and process of demand side substitution of internet access customers between ADSL and other forms of access (especially narrowband and cable access) significantly limits the usefulness of the study's results in the present analysis and may result in the conclusions being distorted. For example, the potential for two-way ADSL and broadband cable customer substitution cannot be netted out within Nankervis's study. When conducting the SSNIP test in the present context the Director is concerned with substitution to (and hence the cross price elasticities with) narrowband services, not intra-broadband movement.

2.56 It is further the case that Nankervis is unable to control for the effects of the massive advertising/awareness campaigns that were simultaneous to the analysed retail ADSL price reductions. Nankervis admits that this may imply an overestimation of the measured own elasticities of ADSL services.

2.57 The limitations of econometric techniques, in this evolving retail market mean that it is not possible to draw robust conclusions from a SSNIP test analysis given the relative lack in observed customer switching behaviour information to estimate cross price elasticities. Therefore, in the present analysis the Director considers demand side substitution issues through the examination of the current willingness to pay of different types of broadband customers, using evidence on current relative broadband and narrowband prices and customer surveys.

Customer Survey Evidence

2.58 Whilst broadband prices do allow consideration of observed market data, the information the Director gleans from customer surveys relates to claimed behaviour of customers who are asked hypothetical questions about the willingness to pay for internet access services given hypothetical price rises. Given the hypothetical nature of the questions asked, it is important to interpret the conclusions of the surveys with care. In general, experience shows that when asked hypothetical questions, customers tend to overestimate the extent to which they will take actions, ie such as switching away from a supplier in response to a price rise. Therefore, consumer survey evidence based on hypothetical questions may be useful in indicating the maximum extent to which consumers will react to different events.

2.59 When conducting the SSNIP test with respect to current claimed willingness to pay for broadband internet access services, the Director estimates the relevant critical loss of customers, ie the required percentage reduction in demand for the SSNIP to be unprofitable. As the price rises above the competitive level the hypothetical monopolist's revenue experiences two conflicting effects. It gains more revenue from customers paying the increased prices and it loses revenue it used to receive from customers who substitute away from the service as a result of the price rise. In addition to the effect of changes in revenue on the hypothetical monopolist's profitability, it is also necessary to take into account the marginal costs that it saves by not supplying service to the customers who substitute away from the service.

2.60 Given the fluid nature of the market with migration from narrowband services accelerating, it would also be relevant to consider the affect of a broadband SSNIP above competitive levels on narrowband internet access customers that are considering whether to upgrade to broadband internet access at current prices. The Director has sought in his internet usage quarterly surveys (May 2003) to capture evidence relating to the potential effect of a broadband SSNIP above the competitive level on both existing broadband customers and narrowband customers likely to upgrade to broadband at current prices. However, as explained below, the Director does not consider that he yet possesses robust enough information relating to potential broadband customers that he can currently rely on these findings within his analysis of the potential

affect of a broadband SSNIP. This is due to the "double-hypothetical" nature of these survey questions. These are the "follow-up" hypothetical SSNIP test questions to customers who had stated that they were interested in taking a broadband service at current prices (but hadn't yet done so). This is explained further below.

2.61 However, even if the double hypothetical nature of the questions is discounted, the information gleaned from this analysis is not sufficiently robust to inform the Director's decision on the appropriate market definition. This is because the questions ask how these non-broadband internet customers would change their behaviour in response to a 10% price increase in current broadband prices. As the recent trend in broadband prices has been downward and this can be expected to continue for the foreseeable future (due to reductions in wholesale costs related to economies of scale), to ask a question about behaviour if current broadband prices were to increase may increase the likelihood that the consumers would respond by stating that they would not switch to broadband. In addition, no time frame was stipulated within the question. If consumers were asked if they would switch to broadband within the timeframe of this review (ie 2 years), the number of consumer who would switch may have been higher.

2.62 Therefore, ideally the questions should seek to ask if consumers would be likely to switch to broadband over the next two years, on an expectation that broadband prices would fall by an amount. In addition, the question about the 10% price increase should be referenced to lower future broadband prices. This may give a more accurate indication of the likely switching to broadband from non-broadband internet customers. However, such a form of questioning is unlikely to be possible in practice as it would be very confusing to consumers and would continue to suffer from the double (or triple) hypothetical problem and therefore could not be relied upon to inform the market definition.

2.63 The importance of the flow of customers from narrowband internet access to broadband internet access to the ability of a hypothetical monopolist to profitably increase prices will be affected by the extent to which potential customers have a different willingness to pay for broadband relative to existing customers. If existing customers have a higher willingness to pay for broadband than potential customers, then given a 10% price increase, the proportion of existing customers that switch away from broadband will be lower than the proportion of potential customers that do not take broadband. If the numbers of potential customers are significantly greater than existing customers then the behaviour of the potential customers will dominate the SSNIP test result.

2.64 As set out above, an existing customer may have a higher willingness to pay due to the fact that such a customer will have experienced the product and it is only after experiencing broadband that the value of broadband to the customer becomes clear. On the other hand, the potential customer has yet to experience

broadband and does not fully understand the benefits that it will bring so this customer's willingness to pay does not fully reflect what it would be after the good has been experienced.

Responses to the consultation on the use of survey data and the SSNIP test

2.65 Before reporting and analysing the Director's updated consumer survey evidence he now addresses comments made by BT, by their consultant Professor Martin Collins, criticising the Director's use of survey data in the previous consultation.

2.66 The Director firstly notes that his results on comparable measures (such as Internet take-up) are consistent with research from other sources including those adopting the 'government' sampling procedure that the paper refers to. Two main points are raised in the paper: the accuracy of survey data, in particular error margins and hypothetical questioning; and the use of this in the consultation's SSNIP test.

2.67 Professor Collins appears to concede that the Director's surveys are as robust as surveys from any other source. He discusses the theory of different sampling methods, which the Director is already aware of and considers when designing his surveys.

2.68 Professor Collins makes reference to the error margin quoted in the Director's surveys, and the "likelihood … of the true error range being even half as large again". The error margins discussed in the Director's survey (and indeed in the majority of surveys) basically relate to the type of people interviewed, and the chances of the results being within the level of error quoted (eg 1-2%) if the survey was repeated on the same basis with a different group of respondents. Professor Collins is accurate in so far as he claims that the Director's surveys may be subject to larger error margins than the 2-3% stated. However, the claim that the true error range is half as large again is an assumption. It is difficult to quantify the extent of any additional error that may exist as a result of design error due to the large amounts of data required to validate the sample. As such the assumptions regarding the true level of the error margins cannot be confirmed either way.

2.69 Other potential sources of error are raised by Professor Collins, the main one being whether the right people were picked to participate in the surveys in the first instance. The Director primarily employs quota samples (ie survey participants are selected to be representative of different populations eg UK adults over the age of 15). In the current instance, interview areas were selected across the UK to be representative of the population spread in terms of geographic region, rural/urban, level of deprivation, (and particularly to telecoms whether the area is cabled or non-cabled). Once these areas were selected,

quotas were set on adult characteristics to be representative of the (aged over 15) UK population profile in terms of gender, age, social grade, and employment status. Professor Collins argues that this is not a widely used sampling technique within government or other public sector survey research.

2.70 The Director strongly disagrees. He considers that this is a widely accepted and used method of conducting research. Bodies such as the ONS do utilise the random sampling methodology (that Professor Collins refers to) on their national establishment surveys. This is because this methodology better fits large scale establishment surveys, or where a specific population is unknown – primarily due to the large sample required and associated high costs. It remains the case that much of the everyday and subject specific research conducted by other regulators and the public sector uses the same quota sample methodology as the Director. This survey approach is adopted to ensure robust evidence for the public sector within the framework of a sensible price/quality trade off.

2.71 With respect to the Director's question wording, Professor Collins criticises the question relating to the potential for taking broadband at current prices for not setting a time-scale. As noted above, the Director accepts that there are limits to the usefulness of such hypothetical questioning and to incorporate time-scales as suggested would introduce additional complexity which would likely render the answers to the questions meaningless. However, the purpose of this question was to assess interest in broadband at a given price rather than time-scales.

2.72 Professor Collins argues that the figures resulting from the hypothetical questioning relating to the SSNIP test have been 'stretched' and by implication are being used inappropriately for the following reasons. Hypothetical questioning often results in overestimation of the likelihood of changing behaviour; the results have been taken at face value when used in the SSNIP test; and the error ranges may be larger than the ones quoted in the research report (as discussed above).

2.73 In response to these points, the Director's research reports recognise the potential inaccuracy of hypothetical questioning. Their accuracy depends on many issues, but generally they are slightly more reliable on proposed take up of known and understood products/services eg the internet, than on potential responses to price changes that rely primarily on consumers being aware of the price and noticing marginal changes, which is often not the case. Whilst the Director accepts these caveats regarding his hypothetical questions, it remains the case that he considers that these answers represent the evidence currently available to him in order to arrive at market definitions in the present market review. Recognising the limitations of consumer surveys, the Director accordingly, does not rely on the general consumer survey results to derive the market definitions in the current review.

2.74 Given the points raised by Professor Collins, the Director does not now consider it appropriate for him to apply any weight to answers he has received to his "double-hypothetical" survey questions. These are the "follow-up" questions relating to their likely response to hypothetical broadband price rise for consumers who had stated that they were interested in taking a broadband service at current prices (but were yet to do so). The Director considers that the double-hypothetical nature of these questions is likely to make their answers unreliable in the present context. The Director is seeking to increase the reliability of the survey answers he receives when seeking to discover the likely impact on the flow of broadband take-up of broadband price rises. This can be achieved by seeking evidence that those consumers that claim interest in taking a broadband service at current prices have actually taken practical steps to become informed about broadband services, prices and comparisons with narrowband internet access. However, as mentioned previously, the Director recognises the complexity in this line of questioning and therefore will treat any result from this line of questioning with extreme caution.

2.75 With respect to error margins for sample design, these are indeed not provided and may be larger than the ones quoted in the Director's reports. However, his research reports do state the known error margins for the total sample and the fact that these will be larger for subgroups. The Director notes that the role of research of this type is to provide a reasonable estimate which may be subject to varying levels of accuracy.

2.76 BT further provided, via consultants Millward Brown, a comparative analysis of the Director's consumer survey evidence with that obtained by BT and other sources including surveys from the USA. Millward Brown comment that market research conducted in the USA regarding reasons for taking a broadband access service tends to show that the functionalities of simultaneous use of voice and data and the property of being always on are key supporting factors to the heavily dominant factor of speed. The Director's February 2003 residential survey shows a similar result. Of the reasons for getting broadband services 69% cited speed, 16% simultaneity of phone and internet access and 11% always on (Figure 6a).

2.77 Millward Brown go on to argue that there is no clear evidence that when having taken broadband internet access the value and perceived benefit of the always on feature becomes much more evident to the customer than the Director proposes.

2.78 The Director disagrees with BT and Millward Brown. The Director's analysis relates to the additional functionalities of broadband compared to narrowband. These include the ability to access voice and data simultaneously and the faster downstream speed of broadband in addition to the always on capability highlighted by Millward Brown. In addition, it also refers to the possibility that new forms of content may emerge over the period of this market review. The Director

concludes that once consumers have experienced these additional functionalities of broadband they will be less likely to return to narrowband internet access. The Director is in the process of collecting data from consumer surveys to support this conclusion. However, the Director does not consider it unreasonable to assume that consumers value the additional functionalities of broadband more after using the service than they do prior to use.

2.79 Millward Brown further suggest that the sample size of users of the internet employed by the Director would need to be at least four times larger to return survey evidence that they believe would meet the evidential standards thus far found acceptable by the Competition Appeals Tribunal. In response the Director once more considers that his general survey approach (including sample sizes) is adopted to ensure robust evidence for the public sector within the framework of a sensible price/quality trade off.

2.80 Millward Brown also argue that the consumer research that has been conducted for BT with respect to the likelihood of taking broadband suggests that consumer demand for broadband amongst prospective consumers is more price elastic than is indicated by the Director's presented SSNIP test amongst current broadband customers. Having had sight of BT's consumer survey evidence that leads Millward Brown to make this comment, the Director considers that it too suffers from the "double-hypothetical" nature that the Director's current surveys do. As such it is not reliable in the present context.

SSNIP test based on consumer survey information

2.81 The Director now considers consumers reaction to the SSNIP test at an aggregated level for both residential and business consumers. In applying the SSNIP test, it is appropriate to consider whether all the substitution effects jointly are sufficient to constrain the hypothetical monopolist. If they are then the market can be broadened to include the closest substitute.

Residential broadband SSNIP test

2.82 The Director's latest customer survey information relating to residential customers and their willingness to pay for broadband services relates to August 2003 and can be found at http://www.oftel.gov.uk/publications/research/2003/q14intres1003.pdf

2.83 The Director's August 2003 survey found that 11% of consumers have claimed that they would substitute away from broadband services given a 10% hypothetical price rise. This comprises 10% of current broadband internet access decision makers who claimed that they would switch to a narrowband internet access service, and a proportionate allocation for of the 4% of customers who

said they did not know[2] what they would do. Over four in five (85%) of broadband consumers claimed that they would continue to use a broadband package[3].

2.84 However, 11% of consumers switching away is likely to be an overestimation on two main counts. This is for two main reasons. Firstly, the data may include some income effects[4] which, given the current data, the Director is unable to isolate and exclude. As explained above, for the purposes of market definition it is substitution effects that are of interest. Secondly, the data is based on customer survey evidence, derived from the asking of hypothetical questions and so consumers are likely to over estimate the amount of switching that will happen in practice. The Director agrees with Professor Collins that claimed switching behaviour is likely to over estimate the actual amount of switching that would be experienced in reality following the conjectured price rise. Therefore, he considers that the survey evidence indicates that the actual amount of switching following a 10% rise in broadband prices would be lower than 11%.

2.85 As explained earlier, the important question underlying the profitability of the SSNIP is the extent of any loss of net revenue less the marginal costs of provision saved. This market review considers providers of asymmetric broadband services. In order to estimate the marginal cost of supplying an asymmetric broadband internet access retail customer, the Director has used information relating to the costs of providing end to end broadband internet access. These marginal costs include relevant wholesale costs and these marginal costs should be added to those associated with backhaul, broadband conveyance, IP conveyance, aggregate link (ISP delivery), internet connection costs and ISP service and marketing costs (ie retailing costs). To these costs is added VAT to ensure that the critical loss analysis is carried out on a comparable basis with the retail price data used.

2.86 The Director considers it disproportionate to construct a detailed model deriving the relevant sets of long run marginal costs for each of the cost categories noted above.

2.87 The critical loss is calculated as $-s/(1+s-a)$ (see Annex A for the derivation of this) where s is the SSNIP (which the Director assumes to be 10%) and a is the ratio of the marginal cost to the current price (ie the price before the SSNIP, here assumed to be £25 per month (including VAT); the weighted average rental

[2] 85% of consumers claimed that they would retain a broadband internet access service. Extrapolating this proportion to the 4% of "don't know" respondents would suggest that 3% of these are likely to retain a broadband service given the hypothetical price rise.

[3] The results pertaining to this subset of residential consumers surveyed (a base of 193) are subject to an error margin of approximately +/- 6-10%.

[4] Income effects are the effects on consumption that result from a change in income ie when income reduces consumption drops. In assessing the extent of switching in response to a price rise for the purposes of market definition, the Director is only interested in the substitution effect of the price rise, not the income effect.

charge cited in Annex A). The Director has calculated critical loss values according to the methodology set out in Annex A. For reasons of confidentiality he is unable to publicly disclose the actual critical loss range.

2.88 The survey evidence (with its associated caveats) suggests that around 11% of broadband users would cease to use broadband given a 10% price increase. This suggests that actual switching is likely to be well below the figure which the Director estimates is the lower bound of the critical loss range. Therefore, on balance, this calculation of the current SSNIP test relating to residential broadband customers suggests that a SSNIP is likely to be profitable. This in turn suggests that it is likely that there is a separate market for broadband internet access services.

Business broadband current SSNIP test

2.89 The Director's latest customer survey information relating to business customers and their willingness to pay for broadband services relates to August 2003 and can be found at http://www.oftel.gov.uk/publications/research/2003/q14intbus1003.pdf.

2.90 When the SMEs currently purchasing broadband internet access were asked whether they would continue to take their current service or a different variety of broadband access given a 10% price rise across broadband services, the overwhelming majority, 81%[5], said that they would retain a broadband service. The survey found that around 13% of consumers have claimed that they would substitute away from broadband services given a 10% hypothetical price rise. This comprises 4% of business customers that positively stated that they would switch from a broadband service to a narrowband service, 7% that said that they would look for a cheaper option/ compare prices and 1%[6], a proportionate allocation of the 7% of customers did not know what they would do given the conjectured price rise.

[5] Within this 87% figure,18% of SMEs said that they would switch to another high speed internet access method (ie non-DSL or cable broadband) such as leaded lines or satellite. It should be noted that when asking this conjectured price rise question regarding a 10% increase relating to all broadband services, there is the potential that respondents did not make the link between the all-broadband price rise and these non-DSL or cable broadband technologies. These other broadband technologies would also experience the SSNIP-type price rise, although the Director has no way of factoring this potential issue into the present analysis. The Director does however note that, as BT itself suggests in its response, that as the Director's definition of broadband now tallies with the general marketing of UK "broadband" services in terms of speeds beyond dial-up, both business and residential customers answering the price rise conjecture question would be quite likely to understand where broadband speeds start.

[6] 81% of consumers claimed that they would retain a broadband internet access service. Extrapolating this proportion to the 7% of "don't know" respondents would suggest that around 6% of these are likely to retain a broadband service given the hypothetical price rise.

2.91 However, 13% of consumers switching away is likely to be an overestimation for two main reasons. Firstly, the data may include some income effects (described above), which, given the current data, the Director is unable to isolate and exclude. As explained above, for the purposes of market definition it is substitution effects that are of interest. Secondly, the data is based on customer survey evidence, derived from the asking of hypothetical questions and so consumers are likely to over estimate the amount of switching that will happen in practice. The Director agrees with Professor Collins that claimed switching behaviour is likely to over estimate the actual amount of switching that would be experienced in reality following the conjectured price rise. Therefore, he considers that the survey evidence indicates that the actual amount of switching following a 10% rise in broadband prices would be lower than 13%.

2.92 The bespoke nature of the business broadband internet access services being considered here means that the identification of a representative broadband business service price is difficult. It is therefore difficult to easily carry out pricing comparisons with business narrowband packages. The Director considers that, in these circumstances, customer survey average spend on broadband internet access services is the best available estimate of a representative price. The Director considers that the same difficulties hold when estimating a marginal cost for asymmetric broadband retail provision to SMEs. In the absence of more disaggregated information in terms of exact customer packages, coupled with the assumption made in the present analysis that current prices are competitively set, the Director considers the best estimate of the critical loss range for SMEs to be the same as the range he estimated for residential customers.

2.93 The survey evidence (with its associated caveats) suggests that less than 13% of broadband business customers would cease to use broadband given a 10% price increase. This suggests that actual switching is likely to be below the Director's estimate of the lower bound of the critical loss range. On balance, therefore, this calculation of the current SSNIP test relating to business broadband customers suggests that a SSNIP may be profitable. If this were the case then it would suggest that it is likely that there is a separate market for broadband internet access services

BT's Criticisms of the Director's Application of the SSNIP Test

2.94 BT, mainly via a paper written by Dr Ian Dobbs, make a number of criticisms of how the Director applies the SSNIP test (or hypothetical monopolist test) in the above analysis. It also makes more general comments regarding the Director's approach to market analysis.

2.95 BT argue, that as broadband early adopters are swamped by future flows of broadband customers, these new customers are likely to be more price sensitive thus increasing overall price sensitivity to price rises. BT (implicitly) argue that

this effect will dominate any inherent early adopter willingness to pay for the extra functionality of broadband and any increased willingness to pay of existing experienced customers who find that they become increasingly attached to the functionality of broadband. As such the overall willingness to pay for broadband, above its competitive level, amongst the evolving broadband customer base is likely to fall in the future. Furthermore, the flow of new broadband customers are likely to be even more likely to switch away following a SSNIP.

2.96 As set out above, the Director recognises that later adopters of broadband may have a lower willingness to pay than early adopters. However, as consumers experience broadband and the content available over broadband Internet access develops, it is likely that all broadband consumers willingness to pay will increase.

2.97 BT suggests that the different retail tariffs applying to residential and business packages is a form of price discrimination. The Director does not necessarily agree with this view in the broadband market. He notes that the typically higher specification of business products will give rise to underlying cost differences which he would normally expect to be reflected in the retail tariffs.

2.98 Dr Dobbs raises the issue of how the SSNIP test should represent the conjectured price increase under a situation of differentiated products within the hypothetical monopolist's tested market. The Director freely agrees that the broadband market to which he is currently applying the SSNIP test consists of non-homogeneous internet access services – they are differentiated; although not sufficiently differentiated from each other (within the suggested broadband market) to identify further sub-broadband markets.

2.99 Dr Dobbs argues that when a set of differentiated products/services are monopolised the monopolist would typically wish to adjust prices in some non-proportionate way, in order to exploit demand side service interactions and manage costs via economies of scale and scope. Thus when framing the SSNIP test's conjectured price rise it is not obvious (and indeed very unlikely) that the hypothetical monopolist would wish raise all prices (of its differentiated services) by an equi-proportionate amount. The monopolist is likely to want to also change the structure of its pricing schedule.

2.100 In response, the Director does not agree that it is relevant to consider how in practice a hypothetical monopolist might wish to raise prices in the market and what pricing structure it might seek to implement. The test being conducted is a hypothetical test and its aim is not to reflect reality but to consider what might happen if all prices in the potential market being considered were raised by a significant, non-transitory amount. This test is conducted to give insight into customer and supplier behaviour which might constrain the hypothetical monopolist and thereby aid in market definition. This approach to the hypothetical

monopolist test as a tool used in market definition is the standard approach adopted by regulatory and competition authorities.

2.101 Dr Dobbs makes the general point that different groupings of retail internet access services may appear in different market definitions depending on the initial focus of the analysis. As such, the broadband and narrowband market analyses should not be conducted as separate exercises. In response the Director notes that in theory market definitions can be non-unique and defined differently depending upon the starting point of the analysis. However, in his current set of market consultations the Director has provisionally concluded (as explained below regarding broadband services) that, not only do narrowband internet access services fail to constrain the pricing of broadband services to the competitive level but the reverse is also true. He has also fully co-ordinated his thinking on both market definitions and the application of relevant remedies across his broadband and narrowband reviews. It is to be noted, however, that the analysis presented in the current review is from the perspective of concluding on whether/(which set of) broadband services constitute a separate retail market to narrowband services.

2.102 With respect to the Director's initial grouping of internet access services into the set of potential broadband services to which he here applies the SSNIP test, he rejects the criticism of Dr Dobbs that this preliminary grouping did not relate to the application of the HMT and that the appropriate market definition is a broader market including unmetered narrowband internet access, for the reasons set out above .

2.103 The Director further notes, as explained earlier, that his preliminary grouping of potential broadband services in the UK is in practice the same as that suggested for analysis in each member state by the Commission.

2.104 In its response to the consultation BT argues that the top end of the long run marginal cost range presented in the First Consultation is probably a maximum for the relevant broadband services. Dr Dobbs thus incorporates the Director's estimate of marginal costs into his representation of the Director's SSNIP test (discussed further below), but he also analyses the scenario where the marginal cost estimate of broadband internet provision is zero. The Director considers that this zero marginal cost case not very informative given the realities of broadband costs. Nor does he consider that his previous estimated range of marginal cost represents a maximum, but a reasonable estimate given his experience.

2.105 Dr Dobbs and BT make the point that due to the nascent nature of broadband services, the Director's market assessment is likely to be plagued by parameter instability and that in such an environment ex ante regulation should not be applied. In a related point, BT argue that the examination of market

boundaries should be directly interlinked with an assessment of appropriate regulation.

2.106 The Director notes that these considerations undoubtedly apply throughout Europe. The Commission has nevertheless included the Wholesale broadband Access market in its list of those considered appropriate for ex-ante regulation where a position of significant market power exists. If the Director were to follow BT's proposed approach, he would be failing to take the utmost account of the Commission's Recommendation without any reasoning which is peculiar to the UK market. Clearly, such an approach would be inadmissible.

2.107 In any case, the Director considers that he has taken appropriate account of the relative newness and accompanying uncertainty surrounding the broadband market and its boundary with narrowband in his considerations of the appropriate remedies that form part of this and his narrowband consultations. He notes that whereas he is consulting on cost based remedies in the narrowband context, in this broadband review his main proposed remedy is "retail minus" in nature. Even if there were to exist only one retail internet access market without a formal distinction between narrowband and broadband the Director considers that he would still consult to apply the same set of remedies he has outlined in the relevant separate reviews. He considers that this set of wholesale remedies will enable a comprehensive menu of competitive wholesale internet access services to exist in the UK. He also considers that he is consulting on the application of the correct mix of cost based and retail minus remedies to create the an appropriate climate for wholesale internet access infrastructure competition to flourish in the UK.

2.108 Dr Dobbs converts the Director's previous consultation's critical loss analysis under the SSNIP test into a type of critical own elasticity test. Dr Dobbs derives a broadband own elasticity figure of –2. If broadband's actual own elasticity is greater than this figure then the SSNIP by the hypothetical monopolist would be rendered unprofitable. As noted earlier, own elasticity figures are not strictly appropriate for the process of market definition as they include income effects, which are not possible to isolate. In defining markets it is the substitution effect that is of interest.

2.109 A number of respondents, including BT, have argued that the lion's share of new broadband customers in the UK are those who are upgrading from unmetered narrowband services. This corroborates the Director's figures provided above. (Results from the Director's August 2003 internet usage quarterly survey shows that approximately 45% of residential broadband users have upgraded from a narrowband unmetered package). However, the Director does not consider that this fact alone is informative of the broadband market defining process as this upgrading is not necessarily reflective of customers substituting from unmetered narrowband in response to a price rise. The key question, as explained above, is whether narrowband internet access services

would act as a sufficient demand side substitute to undermine a SSNIP by a hypothetical monopolist in the supply of broadband services.

2.110 BT believes that its econometric findings and its interpretation of the available consumer survey data when coupled to the observed migration from unmetered narrowband services to broadband services acts to show that broadband internet access does not constitute a separate economic market but is constrained by narrowband services. For the reasons listed above, the Director disagrees.

Supply side substitution

2.111 The purpose of defining retail markets in this review is to inform the appropriate wholesale market definitions and assessment of wholesale market power. The Director considers that supply side substitution at the retail level by suppliers of narrowband internet access with respect to broadband internet access is not therefore relevant to this market review.

2.112 In order for current suppliers of narrowband to enter the supply of retail broadband services, they would need access to relevant broadband wholesale inputs which are unlikely to exist in the absence of regulation. Therefore, supply side substitution at the retail level would be unlikely to provide a constraint on wholesale suppliers.

Initial conclusion on narrowband and broadband

2.113 The Director has considered a range of indicators in determining the extent to which narrowband internet access is a substitute for broadband internet access. This includes considering the extent to which broadband internet access is an experience good and how broadband can be expected to become increasingly differentiated from narrowband over the period of this review. The Director has also considered consumer survey evidence to inform his decision. However, because of the nascent and dynamic nature of these services, the Director believes that care should be taken when interpreting the results of these surveys and as such does not rely on them in reaching his conclusions.

2.114 The Director considers that during the time period of this forward looking review, demand side substitution between narrowband, other services and asymmetric broadband internet access is likely to be limited for both residential and business broadband customers. He considers that broadband internet access constitutes a distinct economic market on the demand side and will continue to do so during the time period of this review.

2.115 Supply side substitution at the retail level is not relevant to this market review, because it would not provide a constraint on suppliers of wholesale broadband services. Therefore, the Director currently considers that broadband

internet access services constitute a separate and distinct economic market from narrowband internet access and other services. This will remain the case for the time period relevant to this review.

Fixed Broadband and Mobile Internet Access

2.116 For the period covered by this market review, the Director currently considers that mobile internet access is in a separate market from fixed broadband internet access.

2.117 Internet access over mobile networks is not an effective demand side substitute for broadband internet access on fixed networks. Internet access on a mobile phone currently offers considerably less functionality than a fixed broadband network. For example, only a fraction of the internet is accessible over a mobile telephone and only part of this fraction is deliverable because of the constraints of screen size on mobile telephones, and interactivity is constrained because of the lack of a full-size keyboard. However, the Director recognises that the extent of substitutability might need to be reviewed in future following the take-up of new mobile technologies offering packet switched services, such as General Packet Radio Service (GPRS) and Universal Mobile Telecommunications System (UMTS, also known as 3rd Generation Communications System). Ofcom might, therefore, reach a different conclusion in a future market review.

2.118 Supply side substitution by suppliers of mobile internet access is not relevant to this review, since to enter the market for fixed broadband internet access they would need to purchase the relevant wholesale inputs. They would not, therefore, impose a constraint on the suppliers of the wholesale broadband services.

2.119 The absence of demand-side substitution and the irrelevance to this market review of supply-side substitution means that a hypothetical monopolist in the supply of fixed broadband internet access would not be constrained to pricing at the competitive price level by the availability of mobile internet access. Therefore, for the period covered by this market review the Director considers that broadband internet access constitutes a separate economic market from mobile internet access. The Director notes that generally respondents to his first consultation agreed with this conclusion. However, the potential for demand side competition from mobile internet access in the future should be kept in mind. The Director agrees.

Symmetric and Asymmetric Broadband Internet Access

2.120 The Director considers that, in the UK, the evidence on relative costs and results from customer surveys support the finding that asymmetric and symmetric broadband internet access are in separate markets.

The Director considers that symmetric broadband internet access does not constrain the price of asymmetric broadband internet access and therefore should not be included in the same market. On the demand side, the large difference in relative costs of these two services suggests a similarly large difference in their respective competitive price levels. Hence a 10% rise in the price of asymmetric services would not result in a sufficient number of its customers switching to symmetric services to make that price rise unprofitable.

2.121 Currently, symmetric internet access is primarily provided using Partial Private Circuits (PPCs) or leased lines, whereas asymmetric internet access is provided using predominantly ADSL and cable. Unlike ADSL or cable technology, PPCs/leased lines are not contended and thus the cost associated with them is much higher than for ADSL and cable technology.

2.122 The costs of contended symmetric internet access services can also be compared to the costs of providing asymmetric internet access services to inform an assessment of the differential in their competitive price levels. Cable networks in the UK are inherently asymmetric such that providing contended symmetric internet access, on any scale, over these networks is not efficient and thus relatively costly. However, contended symmetric broadband internet access can be provided using SDSL technology and the cost of this can be compared to the cost of asymmetric broadband services, using ADSL technology. Given similar retail prices for cable and ADSL based broadband internet access and in the absence of better information, it is not unreasonable to assume that there are similar costs of providing asymmetric internet access using cable technology and ADSL.

2.123 The costs associated with an SDSL based symmetric contended broadband internet access service are significantly higher than those associated with an equally contended ADSL service. This is because the ADSL technology is able to share the access network (telephone line) with the PSTN whereas SDSL technology requires a dedicated line such that it cannot share the line with the PSTN. For its ADSL services BT is maintaining full recovery of the common costs of the access network through the PSTN charges. This can be seen as BT does not offer reduced PSTN charges to those customers who also purchase ADSL. In contrast common costs of the access network must be attributed to SDSL services and this considerably increases the cost of supplying symmetric services relative to ADSL services.

2.124 In order to satisfy the criterion of non-discrimination, the Director determined www.oftel.gov.uk/publications/broadband/llu/shac1200.htm that LLU shared access charge, which is paid by ADSL providers, should not include any common costs associated with the access network. In contrast, the charge for fully unbundled local loops, which is paid by SDSL providers, must pick-up the common costs associated with the access network. Thus, the

regulated charge of shared access can be compared to the regulated charge of a fully unbundled local loop to estimate the magnitude of cost difference when using ADSL and SDSL technology. A fully unbundled local loop is roughly 130% more expensive than shared access; the respective LLU annual line rentals are £53 and £122. Common costs included in the SDSL access charge are the main reason for this difference in cost.

2.125 In response to the first consultation BT argue that as the delivery of PSTN and DSL based broadband use the same copper pair and share the input costs of it, as the two service are "linked" in a manner that has a price constraining affect on broadband. BT provides no evidence to support this assertion. In response, the Director does not consider that this linkage has any price constraining affect on broadband services.

2.126 BT also argues that at the wholesale level, supply side switching by simple reconfiguration of DSLAMs is very likely to place some wholesale services in the same economic market. It believes that switching between symmetric and asymmetric origination services and between contended and uncontended services (within the configurable envelope of the DSL path) is sufficiently straightforward to link these services into a single economic market on the supply side.

2.127 In response, the Director considers that it is not appropriate to widen the relevant wholesale asymmetric broadband origination on the supply side in this manner. He does not consider that doing so would further inform his following assessment of SMP. This is because, for the timescale of this review (as is explained in Chapter 3), he does not consider that the likely number of local loops unbundled by LLU operators will be sufficient to represent a significant competitive constraint. This, coupled with the intrinsic asymmetric nature of the UK's cable modem technology, means that the only operator who will be in a practical position to exercise significant supply side switching via DSLAMs is BT. As shall be explained in Chapter 3, BT is provisionally designated as possessing SMP in the wholesale asymmetric broadband origination market. As such the potential for only BT to significantly supply side substitute into this market is not informative of any additional competitive constraint.

2.128 For completeness, the Director also notes the potential for voice services to be provided over broadband (VOB) in unison with internet access using an ADSL based service. This might in the future have the potential to remove the cost difference between the provision of ADSL and SDSL internet access based services in that the common line costs associated with the SDSL based service would equally apply to an ADSL based service in the absence of their recovery via the customer taking a PSTN service. However, in order for this potential situation to be relevant, VOB must be considered as an effective demand side substitute by retail customers to PSTN voice services. The Director does not consider that it is likely that this will happen during the time period of this market

review such that this potential issue is not relevant to the current analysis. VOB services have, as yet, insignificant take up such that they are not likely to constitute an effective retail substitute to PSTN voice calls over the next two years.

2.129 In addition to the difference in costs of providing asymmetric and symmetric internet access services, they are also likely to be used by different customers for different purposes. For example, asymmetric access may be preferred over symmetric access because the customer does not have high upload requirements and so is unwilling to pay the price premium for symmetric services. In fact, a customer survey conducted for the Director in October 2002 suggests that many UK (residential) broadband customers of internet access do not value the additional functionality of a symmetric service. Only 23% of residential broadband customers said that they would pay any additional charges to obtain a symmetric service with double their upload speed. This suggests that the remainder would be unlikely to switch to symmetric services given a 10% rise in the price of asymmetric services.

2.130 On the supply side, it is technically feasible for symmetric service providers to offer asymmetric services using their existing infrastructure and existing wholesale product. But it would involve them in using their capacity inefficiently, ie offering an asymmetric service over symmetric capacity. This exacerbates the cost disadvantage that symmetric services face relative to asymmetric services. Therefore, such supply is likely to be unprofitable and supply side substitution would not provide a competitive constraint.

2.131 Symmetric suppliers might also purchase an asymmetric wholesale product in order to offer an asymmetric service but such substitution behaviour would require them to have access to the relevant wholesale inputs. As discussed previously, this would not impose a constraint on the suppliers of the wholesale services and so is not relevant to this market review.

2.132 In conclusion, demand-side substitution between symmetric and asymmetric broadband internet access is limited by the large difference in costs in the UK and the low valuation that UK asymmetric broadband internet access customers place on symmetric broadband internet access. Supply side substitution at the retail level is not relevant in the context of this market review.

2.133 The Recommendation and Explanatory Memorandum does not discuss substitution between asymmetric and symmetric products. It appears that the Commission's market definition of 'wholesale broadband access' includes both symmetric and asymmetric broadband internet access services. However, the Director considers that it is appropriate in the UK to define symmetric broadband internet access in a separate market to asymmetric broadband internet access for the period covered by this market review. This is due to the facts discussed

above on relative costs of asymmetric and symmetric services and the evidence from customer surveys in the UK.

2.134 In response to the first consultation, BT argues that the above analysis does not take into account the full set of linkages with downstream services. It provides the example that SDSL is capable of supporting multiple lines of PSTN service directly. Whilst acknowledging this, the Director notes that he is here concerned with broadband internet access which, as noted, cannot be supplied in conjunction with PSTN over SDSL.

Residential and Business Broadband Internet Access

2.135 The Director considers that for the current market review it is appropriate, on balance, to define a market for asymmetric broadband internet access which includes both residential and business customers.

2.136 Currently, there are different asymmetric broadband internet access products targeted at residential and business customers. The Director recognises, however, that there may be some overlap in the types of products bought by residential and business customers e.g. some business customers such as SoHo users may find that a highly contended residential service is more suited to their needs.

2.137 However, in general, business customers tend to have a lower tolerance of delays compared to residential customers. Some businesses are also likely to have a greater need for upstream capacity in order to, for example, make available information and provide customer services on web sites. They may also require a more tailored level of customer support and a higher level of network reliability from their internet access suppliers. Therefore, business customers are likely to purchase higher quality products relative to residential customers. For example, a typical business product is likely to have lower contention levels and better terms and conditions in the form of quicker guaranteed repair times.

2.138 The fact that business customers are more likely to purchase more expensive and higher quality products does not in itself suggest that residential and business customers should be in separate markets. The issue of market definition depends on the willingness to pay for higher quality compared to the difference in the competitive price levels.

2.139 It might be argued that since the prices paid by business customers are significantly higher than those paid by residential customers, and if the current prices of residential and business products are assumed to be at the competitive level (in the absence of better information), then a 10% rise in price of the residential product would be unlikely to result in residential customers switching to the business product. This would suggest that residential and business customers would be in different markets.

2.140 However, the Director is conducting a forward looking market definition and there is a potential case to be made that during the course of the period covered by the market review the distinctions between residential and business customers will become more blurred. On the demand side, a chain of substitution may develop between the high quality residential products and lower quality business products.

2.141 Although currently there are only a few products supplied in the possible product space, it may be that suppliers will not be able to segment the market profitably between residential and business customers over time. The levels of service and speed demanded by residential customers are likely to increase during the period covered by the market review, as residential broadband internet access customers increasingly realise the advantages of higher internet access speeds and as more tailored broadband content is made available to them which benefits greatly from being supplied over a better quality broadband internet access product. Thus, over time, some residential customers are less likely to tolerate delays and are more likely to seek increasing levels of service and speed. In this scenario, new residential products are likely to become available which offer the levels of service and speed closer to the current business products.

2.142 Therefore, it is quite possible that, during the course of the market review, more products will become available which will create a chain of substitution between the residential and business products. Indeed as illustrated in the Director's International benchmarking study of internet access http://www.oftel.gov.uk/publications/research/2001/dslb1201.pdf, in the USA where retail broadband services have had more time to develop, there exists a significant overlap between the range of service bandwidths offered to business and residential customers (see pages 54 and 61).

2.143 A chain of substitution on the demand side would suggest that a hypothetical monopolist in the supply of residential broadband internet access would not find it profitable to sustain prices above competitive levels because sufficient numbers of residential customers would switch to the competitively priced lower-end business products.

2.144 Supply side substitution at the retail level between business and residential broadband internet access would not limit the exercise of market power in the related wholesale markets, given that similar inputs typically provided by the same wholesale supplier are required. Since the purpose of this section of the market analysis is to determine the impact that the definition of the relevant retail markets has on upstream market power, such supply side substitution is not important to the consideration of markets at the wholesale level.

2.145 Of the respondents that commented on this part of the analysis there was general agreement with the Director's approach. For example, BT agree with the Director that it makes sense to consider residential and business customers together. However, MCI suggests that the UK's cable networks are less well suited to the provision of broadband services to business customers than residential customers due to the service level guarantees that can be made via cable modem services. SPC Network (for the Altnets) considers that cable's primarily selling of its services to residential customers as opposed to businesses means that BT's share of broadband business customers is higher than in the combined market.

2.146 In conclusion, an argument can be made for separate markets on the demand side between residential and business customers. But, the forward looking nature of the market definition appropriate to this market review suggests the case for the broader market definition, because a chain of substitution may develop on the demand side. Given the early stage in the development of these markets, the probability of maturing demand for broadband internet access products and the likelihood of new product innovation, the Director considers that on balance, it is more appropriate to define a broader rather than a narrower retail market for asymmetric broadband internet access which includes both residential and business customers. This is consistent with the Commission's Recommendation which does not define separate markets for business and residential broadband markets.

Retail Geographic Markets

2.147 The Director currently considers that there are two distinct geographic markets for retail asymmetric broadband internet access services: the UK excluding the Hull Area; and the Hull Area.

2.148 The geographic boundary of the relevant market is generally defined using the same approach as the product market definition, ie using the hypothetical monopolist test. The geographical market is the area within which the demand side and/or supply side substitution can take place. If a price increase by a hypothetical monopolist in the narrowly defined area would encourage operators outside the area to begin to offer services to customers in the area and/or whether customers could switch to suppliers located outside the area then it is appropriate to expand the geographic market boundary.

2.149 However, in this analysis it is more relevant to consider whether there exists a common pricing constraint in determining the appropriate geographic market boundaries. BT's charges for retail asymmetric broadband access are geographically uniform with the exception of the Hull Area where BT does not provide such services. BT's decision to set national tariffs for its broadband internet access services is its own commercial decision, as are those of ntl and

Telewest to set geographically uniform broadband access prices in their franchise areas.

2.150 BT's uniform broadband access pricing (with the exception of the Exchange Activate Programme) means that any response by BT to broadband internet access competition in a given area in the form of lower prices would apply throughout the areas of the country where BT offered these services. This national common pricing constraint suggests that the geographical extent of the relevant markets should be regarded as the whole of the UK excluding the Hull Area. Therefore, it is appropriate to define a national market excluding the Hull Area where a single national pricing constraint holds. However, the Director notes that this national market exhibits local characteristics, in that BT's two material competitors only provide services in their cable franchise areas which do not overlap.

2.151 Information received from operators and Oftel's consumer survey information suggests that BT's market shares in the wholesale market compared between cable and non-cable areas are substantially different, with BT having a market share of around 30% to 35% in cable areas and near 100% in non-cable areas. This data suggests that there could be a significant difference in the competitive conditions between the cable and non-cable areas in broadband Internet access markets. This data may suggest that a case could be made for defining separate geographic markets, split by cable and non-cable areas.

2.152 However, as set out above, there is evidence to suggest that the market is indeed national in nature, with local characteristics. The main reasons for defining a national market are:

- BT has priced and continues to price on a national basis at both the retail and the wholesale level;
- the cable operators price on a national basis, even though their cable franchise areas are in geographically distinct locations;
- ISPs price on a national basis; and
- available evidence on advertising practices suggests that all operators in the broadband Internet access market advertise on a national basis.

2.153 All of the points above suggest that there exists a national market in the provision of broadband Internet access. This approach is also consistent with the Competition Commission's report into the proposed merger of NTL and Cable and Wireless Communications (CWC) in 2000.[7] In its report, the Competition Commission explicitly considered a hypothetical example where a national operator had a 20% market share in cable areas and a 100% market share in the rest of the country.

[7] "NTL Incorporated and Cable & Wireless Communications Plc: A report on the proposed acquisition", Competition Commission, 22 March 2000.

2.154 The Competition Commission concluded that a national market definition would reflect the greater size of the national competitor, due to its 100% market share in the rest of the country. It is this greater size that lies behind the pricing decisions in the cable areas. In addition, the Competition Commission considered in this hypothetical example that the national operator's small share in the cable areas may prevent it from increasing prices in other non-cable areas. The Competition Commission concluded that this mechanism suggests competition on a national level.

2.155 The Competition Commission's conclusion regarding the retail and wholesale market definitions for the pay TV markets relevant to the merger was that there is a:

- UK market for pay TV at the retail level, with some local characteristics in the case of cable operators; and
- UK market for pay TV at the wholesale level.

2.156 The Director recognises that neither a purely national market nor separate local markets truly captures all of the competitive constraints that exist. However, the Director considers that for the reasons set out above, that a national market definition with local characteristics better reflects these competitive constraints than separate geographic markets would.

2.157 For the reasons set out above, the Director believes that this proposed approach of defining the broadband Internet access market as national with local characteristics and recognising the local characteristics within the remedies is the most appropriate approach to ensure the development of effective competition in the downstream markets.

2.158 In response to his first consultation, both BT and Telewest have commented that the Director's defining of the geographic market by reference to commercial pricing behaviour in the market is not robust. They both argue that by considering only current pricing performance within the market (which parties are commercially free to change) the Director does not recognise the underlying structure of geographic choice and competition. In response, the Director reiterates that geographically uniform commercial pricing is (and historically has been) a fact in the broadband market. As set out above, the Director recognises that defining the market on a national basis may not fully reflect the competitive constraints within this market. However, as explained, this is preferred to the approach of local markets which would also fail to reflect the competitive constraints within the markets and where the possible remedies would likely be ineffective.

2.159 In the Hull Area, the only provider of retail fixed broadband access is Kingston. Therefore, Kingston is isolated from the competitive constraint deriving

from the operation of BT's geographical averaging described above because BT is not currently competing in the Hull Area.

2.160 On the demand side, in response to an increase in the price of retail broadband internet access in the Hull Area, it is unlikely that customers would seek to move their location to outside the Hull Area. Therefore, a broadband access service being offered outside the Hull Area would not be considered an effective substitute for broadband access within the Hull Area.

2.161 On the supply side, if the hypothetical monopolist in the Hull Area was to raise the price of broadband internet access, it may be feasible for a provider outside the Hull Area to enter the market by investing in the appropriate broadband internet access infrastructure. However, the cost of such investment would be very significant and involve considerable sunk costs. Therefore, the supply of broadband access services by suppliers outside the Hull Area is unlikely to constrain the pricing behaviour of a hypothetical monopolist in the Hull Area to the competitive level.

2.162 Therefore, the Director currently considers that there are two distinct geographic markets for retail asymmetric broadband internet access services the UK excluding the Hull Area; and the Hull Area. Kingston Communications has commented that it agrees with the Director that the Hull Area constitutes a separate geographic market in the current context.

Summary list of retail markets

2.163 In conclusion, the Director has identified the following relevant retail markets in this chapter:

- Asymmetric broadband internet access which includes services that are always on, allow both voice and data services to be used simultaneously and provide data at speeds greater than a dial up connection. This market includes both business and residential customers in the UK (excluding the Hull Area); and
- Asymmetric broadband internet access which includes services that are always on, allow both voice and data services to be used simultaneously and provide data at speeds greater than a dial up connection. This market includes both business and residential customers in the Hull Area.

Wholesale Markets

2.164 This section considers relevant wholesale market definitions in light of the conclusions of the relevant retail market definitions. As noted in the retail market definitions, the analysis focuses on asymmetric broadband internet access as this is the main broadband service being supplied in the UK.

Summary list of markets

2.165 This section will define the following three wholesale broadband markets:

- Asymmetric broadband origination in the UK excluding the Hull Area;
- Asymmetric broadband origination in the Hull Area;
- Broadband conveyance in the UK.

2.166 The wholesale economic markets of asymmetric broadband origination and broadband conveyance are defined in non-technology specific terms. Reference to any particular technology and network architecture will be for illustrative purposes only. What is important is the functionality provided by this type of wholesale service.

2.167 The particular use of its ATM and IP networks by BT in its provision of both intermediate services to ISPs and the use of its ATM network to provide wholesale asymmetric broadband origination is not the key issue for market definition, since competing wholesale services might provide similar functionality using a different mix of network elements or types.

ADSL and Cable Based Wholesale Services

2.168 This section considers whether ADSL and cable based wholesale services are in the same market. The Director recognises that cable operators do not currently offer a wholesale broadband product. Therefore, cable is unlikely to directly constrain the pricing behaviour of an ADSL provider at the wholesale level. This is because the Altnets cannot substitute from ADSL wholesale products into cable wholesale products in response to a price rise of an ADSL based wholesale broadband product., However, in defining the relevant wholesale markets for the purposes of this market review, it is appropriate (for the reasons set out at the beginning of this chapter in paragraph 2.16) to define the relevant markets, at the retail and wholesale level, in the absence of regulation.

2.169 In the absence of regulation, it is quite possible that a wholesale product would not be made available at all. Cable companies do not currently offer a wholesale product, and it is questionable whether BT would do so. It is, however, true that BT had provided a Datastream service prior to the ATM Direction that required BT to provide a new version of this product on a non-discriminatory basis. Thus, it might be argued that in the absence of regulation, a wholesale product would have been provided. However, in such a scenario, BT would have no obligation to continue to make such a product available or to ensure that it was commercially viable. Moreover, it is unclear whether BT would have made such a wholesale product available in the absence of the potential for a regulatory obligation being imposed on it. For both of these reasons, it would be

inappropriate to conduct the market analysis on the assumption that BT would provide a viable wholesale product in the absence of regulation.

2.170 In the absence of wholesale products (which is assumed to be the position without regulation), there would clearly be no direct competition between ADSL and cable at the wholesale level. However, it is still possible to consider the question of market definition at the wholesale level because competition would take place further downstream at the intermediate (e.g. IPStream + BT Central) and retail levels. The relevant question is whether a hypothetical monopolist of a wholesale service could profitably and sustainably raise prices by a small but significant amount. Retail prices can be regarded as being comprised of a number of input costs and one of these input costs can be characterised as the cost of a wholesale service. If the charge for this wholesale service were to increase, and all other elements of the retail service were priced at the competitive level, this would translate into a price increase at the retail level.

2.171 This means that, for example, a 10% price increase for the ADSL wholesale service would translate into a price increase (but of less than 10%) for the ADSL based broadband internet access product at the retail level. This retail price increase would be less than 10% because the wholesale element is only part of the initial retail price. Using data available from the regulated broadband access markets, the Director considers that wholesale costs constitute around approximately 45% of the retail price of ADSL based broadband. Therefore, a 10% price increase of the wholesale element would translate into a 4.5% price increase at the retail level.

2.172 Such a price increase would lead to some end users switching from ADSL to cable based broadband internet access at the retail level. The relevant question in terms of wholesale market definition is whether the scale of such switching would be sufficient to render the price increase unprofitable. Clearly, if the wholesale element of the retail price were very small, it would be unlikely that significant switching at the retail level would take place. There would thus be a case for regarding DSL and cable wholesale services as being in separate markets.

2.173 However, in the actual case under consideration, the wholesale element of this service comprises approximately 45% of the retail price, and, in principle, the services are essentially the same from the end user's perspective and therefore are very close substitutes at the retail level. On that basis, it is the Director's current view that such a 4.5% price increase at the retail level (i.e. one corresponding to a 10% increase at the wholesale level) should lead to sufficient numbers of customers switching to cable based broadband internet access to render the price increase unprofitable Therefore, in this unregulated situation, cable would be an indirect constraint on the behaviour of the ADSL based wholesale internet access provider to such an extent that the appropriate wholesale market definition would include both ADSL and cable.

2.174 It is also possible that in an unregulated market, both ADSL providers and cable providers would offer intermediate products (e.g. IPStream + BT Central). . If either wholesale provider were to increase its prices, this would feed through to the prices of the intermediate products. The price increase at the intermediate level would be less than the price increase at the wholesale level because the wholesale element is only part of the intermediate price. Using data available from the regulated broadband access markets, the Director considers that wholesale costs constitute around approximately 80% of the ADSL based intermediate service. Therefore, for example, a 10% price increase of the ADSL wholesale element would translate into an approximate 8% price increase at the intermediate level.

2.175 Such a price increase would lead to some ISPs switching to cable providers at the intermediate level. While this would involve end users switching their means of delivery, this might not constitute much of an obstacle to an ISP wishing to switch end users between DSL and cable (or the other way around)..The Director is of the view that an approximate 8% increase at the intermediate level is likely to lead to sufficient numbers of ISPs switching from ADSL to cable based intermediate products to render the wholesale price increase unprofitable. Therefore, in this unregulated situation, cable would be an indirect constraint on the behaviour of the ADSL based intermediate service provider to such an extent that the appropriate wholesale market definition would include both ADSL and cable providers.

2.176 In conclusion, the Director considers that the indirect effects via both the retail level and the intermediate level are sufficient to ensure that the appropriate wholesale market definition includes both ADSL and cable.

2.177 It is also possible to analyse this issue from a slightly different perspective, by focusing on the question of whether, absent regulation at the wholesale level, BT would be in a position of market power at the retail level because of implicit leverage from the wholesale level. As before, ADSL competes with cable in the broadband internet access market at the retail level, but the underlying assumption is that absent regulation no wholesale products would be provided. In the absence of wholesale products, it might be assumed that BT's retail market share would correspond to its current wholesale market share. That is, the overall split between DSL and cable at the retail level would be as it is currently, but BT would capture the whole DSL market share at the retail level The question would then be whether, on the basis of these market shares and other relevant considerations, BT would be in a position of SMP at the retail level (in a market which included both DSL and cable based retail services). The analysis which is relevant to this question has been conducted in the next chapter which attempts to assess BT's wholesale market position on the basis of retail market share data and the difficulties of replicating or acquiring the

underlying wholesale service in the absence of regulation. That analysis implies that BT would have market power at the retail level in the absence of regulation.

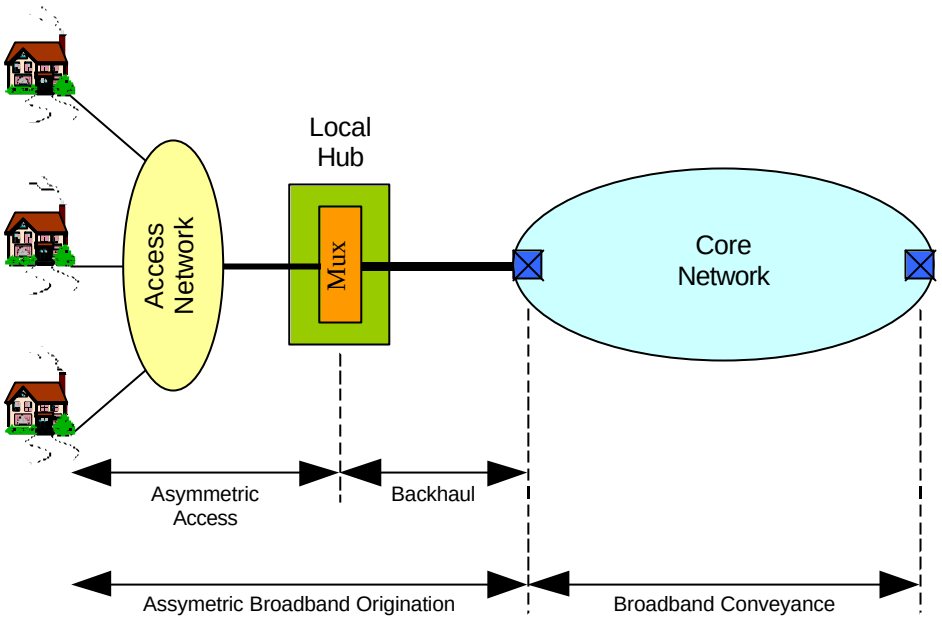
2.178 Following this, the relevant question would be whether BT's market power in the retail market was the result of BT leveraging its market power from the unregulated wholesale market (the leveraging taking the form of BT not providing a wholesale product). This would seem likely to be the case, since the barriers to entry are much more significant at the wholesale level than at the retail level. An appropriate remedy could therefore be to require BT to offer a regulated wholesale product in order to address the SMP in the retail market.

2.179 The Director has applied the first approach in the context of his market definitions as it explicitly defines wholesale markets and therefore is in keeping with the approach of the Commission in the sense that wholesale broadband access markets are identified. The second approach does not explicitly define a wholesale market. Rather, the second approach seeks to identify market power at the retail level and then suggest that this is a result of leverage from the wholesale level. The Director has set out the second approach primarily to aid understanding of the concerns about leverage of wholesale market power into retail markets.

Asymmetric Broadband Origination

2.180 The Director first considers whether there exists a wholesale market for asymmetric broadband origination. Asymmetric broadband origination extends from the end user's premises to the first suitable point of interconnection within the core network, ie the parent node. Asymmetric broadband origination therefore consist of asymmetric local access and backhaul, as illustrated in

Figure 2.1



2.181 As stated previously when discussing the retail markets, ADSL and cable are currently the predominant technologies used to support asymmetric broadband origination in the UK. Referring to Figure 2.1, for ADSL technology the "asymmetric access" service would be an ADSL enabled telephone line, the multiplexor (Mux) would be a DSLAM located in the local exchange and the "backhaul" would be a connection between the DSLAM and the core network. For the cable technology the " asymmetric access" service would be a combination of a fibre access ring and coaxial drops, the Mux would be a universal broadband router (UBR) located at the cable head end and the "backhaul" would be a connection between the UBR and the core network. Similarly, other technologies such as broadband fixed wireless, satellite, digital broadcast systems and power-line systems could be employed to supply these broadband services.

2.182 On the issue of residential and business customers, the Director notes that the wholesale market will include both business and residential customers regardless of whether they are in the same or separate markets at the retail level. This is because the Director considers that these services currently depend on the same asymmetric broadband origination input such that a common pricing constraint exists between asymmetric broadband origination for business and residential customers at the wholesale level.

2.183 Therefore, the Director concludes that residential and business customers are included in the same market at the wholesale level and that there exists a wholesale market for asymmetric broadband origination.

Responses to the consultation

2.184 Energis argues that the Director should have further divided this asymmetric broadband origination market into asymmetric broadband access (from the end user to the end of the DSLAM) and asymmetric broadband backhaul (from the end of the DSLAM to the parent ATM node). It argues that this further vertical division would allow for reflection of the potential differing competitive conditions that may exist between the two. Whilst in the longer term such a distinction may be informative of future market power assessments, for the timescale of the current review, the Director does not consider that either the access or backhaul elements of asymmetric broadband origination will vary between each other sufficiently in their competitive characteristics to warrant this further vertical distinction.

2.185 A further criticism of the Director's approach to defining the relevant wholesale markets has been made by Telewest and their consultants LECG. They argue that the Director's methodology of formally defining the relevant retail markets and considering their implications for wholesale market definitions is flawed and will potentially not capture all of the relevant wholesale market dynamics. They argue that the Director is not bound to commencing his analysis at the retail level and that his interpretation of the Commission's Explanatory Memorandum associated with the Market Recommendation in this regard is incorrect. LECG believes that the Commission's logic for starting with the retail markets is to enable consideration of whether the retail markets themselves require ex ante regulation. Given this, LECG develop an analytical framework which seeks to treat wholesale broadband as a derived demand, starting the analysis at the wholesale level and taking into account the effects of retail competition, rather than the other way round. This analysis leads Telewest to conclude that there exist two distinct sets of wholesale broadband markets. Those where BT and cable overlap geographically and those where BT is the only feasible terrestrial broadband network for the foreseeable future.

2.186 In response, the Director reiterates his interpretation of Recital (7) of the Recommendation. It clearly states that the starting point for market definition is a characterisation of the retail market over a given time horizon. 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 the Director.

2.187 Furthermore, the Director considers that his framework for defining wholesale markets is both logical and robust as a means to deriving the relevant economic markets to act as tools via which he can robustly identify positions of market power. The Director further notes that Telewest through LECG agrees with the approach of factoring in the constraining effect at the retail level of a price rise at the wholesale level. However, LECG consider that the appropriate starting point of the analysis is the wholesale level, rather than the retail level, as

implemented by the Director. The Director considers that whether the market definition process commences at either the retail or the wholesale level the same wholesale market definition would be attained. Although LECG's analytical framework commences at the wholesale level, it incorporates the derived demand nature of the wholesale services from the retail level. The Director commences his analysis at the retail level where the derived demand nature is projected onto the wholesale market.

2.188 The Director notes that LECG's analytical framework, similarly to his own, identifies the fact that the competitive constraint at the wholesale level is felt indirectly through the retail/intermediate services market. The Director has set this out above in paragraphs 2.168-2.179.

2.189 Given the Director's analysis of the relevant geographic market, an application of LECG's analytical framework would, in his opinion, lead him to the same SMP conclusions that he reaches via his own framework. His SMP conclusions would be unaffected whether he modelled the potential constraining affect of cable to be captured either following retail market analysis directly at the wholesale level or by starting at the wholesale level and factoring in retail competition. The Director also considers that his wholesale market definition, derived from the retail market starting point, allows for full illumination of the competitive conditions relevant in his SMP assessment to follow.

2.190 As noted above, the key difference (in terms of the conclusions reached) in the Director's and LECG's analytical frameworks relates to the treatment of the geographic market. Unlike the Director's, the LECG framework does not allow for the inclusion of the common pricing constraint mechanism. (Telewest's views about the retail geographic market have been noted earlier.) The Director reiterates that, as this common pricing constraint mechanism acts to allow UK-wide consumers the benefits of more localised competition, the Director considers it appropriate to maintain this mechanism in his analysis and hence his national market definition.

2.191 BT argues that whilst the Director's methodology of deriving upstream (wholesale) markets from the identification of corresponding retail markets may be applicable in an environment of PSTN services, it is not valid for broadband services which are a good deal more complex. It believes that this complexity is due to technical sources of wholesale services and downstream market conditions. BT identifies several dimensions that can be used to deliver broadband Internet access. BT argues that the factors that it has identified facilitate a wide variety of vertical chains of upstream supply. However, BT argues that the Director's analysis assumes one particular way in which these dimensions are put together. BT further argues that as the market develops and matures it is likely that a smaller number of supply options are likely to appear, but that it is not currently possible to tell what these will be.

2.192 In response, the Director considers that he has taken full account of the both the technical nature of wholesale broadband services and to what extent vertical and horizontal services compete with each other as well as fully considering the situation in the relevant downstream markets into which these, and other potentially competing wholesale services feed.

2.193 More specifically, BT argues that wholesale broadband access is capable of supporting many different applications, each of which has several means of delivery and not just DSL based access which is the subject of this review. In response, the Director has made plain that he considers internet access to be by far the most important retail services relevant to this review and it is into this market that the vast majority of wholesale broadband inputs flow. He has further listed all of the technologies that he is aware of that can be used to supply retail broadband internet access. This review is not just concerned with DSL based services. The Director's analysis is technology neutral, with full account being given of the competitive constraints provided by cable modem, FWA, satellite etc technologies. Whilst the Director couches his network explanatory text in terms of an ADSL network, this is purely for illustrative purposes.

2.194 BT argues that the Director's representation of the chain of upstream market (DSL/ATM) network inputs is arbitrary. For example, where the Director's chain has the DSLAM connected to the first ATM node via backhaul transmission, with ATM transmission then leading to the broadband access service (BAS), this arrangement is not unique. In practice, in some exchanges the DSLAM is directly terminated onto the BAS. The Director agrees that in reality his representation of the vertical chain of upstream network inputs will not always hold and may need reconsidering in the future should a different vertical chain of upstream supply become the default. However, for the timescale of this review, he considers that the vertical chain of network inputs he outlines in this consultation is likely to remain in practice the way that the vast majority of DSL broadband wholesale services are configured.

2.195 BT further argue that the ability of upstream products such as DataStream to deliver independent PSTN services can act to have a constraining affect on broadband prices. In response, the Director does not understand how this pricing constraint would come about at either the wholesale or retail level.

2.196 Turning to the demand side analysis at the wholesale level. BT agrees with the Director that ATM based broadband origination services (oriented towards retail internet access) are in the same market as cable modem originated services. However, BT also argues that narrowband internet origination, PSTN "origination" and PPC services should be included in this wholesale market on the demand side. The Director disagrees. In defining the retail market, the Director took account of switching from broadband internet access to all services. This analysis led to the Director concluding that there is a separate market for broadband internet access at the retail level. The Director

does not consider these alternative origination services proposed by BT to be cost effective substitutes for asymmetric broadband origination at the wholesale level.

Broadband conveyance

2.197 As set out above in **Figure 2.1**, broadband conveyance is the conveyance of broadband traffic across the core network. DSL based broadband conveyance is the conveyance of broadband traffic beyond the parent ATM node of the core ATM network. On a DSL based network, there is no distinction between symmetric broadband conveyance and asymmetric broadband conveyance. This is because the symmetric or asymmetric nature of the traffic is determined at the DSLAM.[8] The Director next considers whether broadband conveyance constitutes a separate wholesale market to asymmetric broadband origination.

2.198 The two services are neither demand side nor supply side substitutes. On the demand side the two services are complements, not substitutes. Broadband conveyance allows the onwards transit of asymmetric broadband origination traffic across the core network. The two services do not overlap. Therefore, a hypothetical monopolist in the supply of each services would not find SSNIPs above the competitive level rendered unprofitable by demand side substitution to the other service.

2.199 The same is true on the supply side. Supply side substitution is not possible given the considerable sunk investment in the form of network build that would be required to enable an existing supplier of one of the two services to enter into the supply of the other service.

2.200 Having concluded that broadband conveyance does constitute a separate wholesale market to asymmetric broadband origination, the Director now considers whether it is appropriate to define a single market for broadband conveyance. The Director understands that currently the networks that support this service tend to have a flat architecture. This architecture is flat in that it possesses no tiered levels of aggregation in the core network. The Director has previously (for example in the ATM Direction) defined two relevant broadband conveyance markets: trunk broadband conveyance and non-trunk broadband conveyance. The Director now considers that this distinction is not warranted when defining the market, given the flat architecture of broadband conveyance networks. In the context of other markets e.g. leased lines, where the network architecture is somewhat more hierarchical, it has been possible to separate out conveyance or 'trunk' elements which constitute separate markets. Such potential separation poses a much more difficult problem in the context of the flat broadband conveyance architecture.

[8]If the conveyance is of leased lines traffic, it is likely that the symmetric broadband conveyance will be over a different network to that of DSL traffic.

2.201 Moreover, BT has, on its own initiative, introduced a pricing structure for these broadband conveyance services which depends on distance but does not depend on the characteristic of the particular nodes used. This uniform pricing structure suggests that a common pricing constraint is likely generally to operate across the broadband conveyance services as a whole.

2.202 The Director thus considers that there is a single market for broadband conveyance which includes conveyance from the parent core network node to a distant node across the core network. This can be seen in Figure 2.1 above. For BT's ADSL services broadband conveyance extends between the first, or parent, ATM switch to an alternative, or distant, ATM switch elsewhere in the core ATM network. Energis's response to the Director's first consultation says that this is probably the correct approach to the analysis of this conveyance market.

2.203 SPC Network for the "Altnets" argues in favour of a closer parallel, in terms of market definition, with the treatment of conveyance in the Leased Lines market review. It argues that, if its understanding is correct, then since ADSL and SDSL based services use the same ATM core infrastructure, that ADSL and SDSL conveyance may be substitutable and that the two types of conveyance could therefore be regarded as being in the same market (on the demand side).

2.204 In response, the Director agrees with SPC Network's view that the broadband conveyance service that supports ADSL is technically the same product as the core conveyance product that supports SDSL services. Conveyance across the ATM network is not symmetric or asymmetric, since the degree of symmetry of traffic to and from end users is determined at the DSLAM. It is therefore the case that, in the case of supplying core conveyance for a number of end users, a solution based on conveyance across the ATM network (using SDSL tails) is potentially substitutable with one based on conveyance across a leased lines trunk network eg BT's tiered SDH network,. An SMP assessment relating to conveyance across the ATM network that is used to support SDSL might therefore arguably be conducted in either or both of the leased lines or broadband market reviews. The Director's view is that it is only appropriate to assess the market for these services in one market review. Since such downstream products mainly relate to the leased lines markets, Director's view is that it is it appropriate to review the associated conveyance in the Leased Lines Market Review. Meanwhile, it remains appropriate to review the broadband conveyance associated with the provision of asymmetric downstream services in this market review.

2.205 The Director considers that the potential substitutability of conveyance across the ATM network used to support SDSL based services with conveyance across an SDH based network that supports (eg) SDH based leased lines services does not remove the previously identified breakpoint between the markets for broadband conveyance and leased lines trunk segments. This is because SDSL downstream services do not currently constitute a significant part

of the associated leased lines trunk markets, and therefore the prices of broadband conveyance (mostly used to support ADSL based services) is unlikely to be constrained by the price of trunk segments, and vice versa. The Director considers that this is unlikely to change over the period of this review.

2.206 The relevant wholesale market defined in the Recommendation, wholesale broadband access, includes within it both of the markets of wholesale asymmetric broadband origination and broadband conveyance as defined in the current analysis. However, as set out above, these two markets are distinct on both the demand and supply side. They also possess the potential to exhibit different competitive characteristics such that the Director currently considers it is appropriate to have a separate market for asymmetric broadband origination and broadband conveyance.

Wholesale Geographic Markets

2.207 As in the retail markets, the Director provisionally concludes that it is appropriate to define a national market (excluding the Hull Area) as opposed to separate markets for cable and non-cable areas. This national market has local characteristics. As with the retail markets, the Director recognises that this market definition may not truly capture the competitive constraints present. However, he considers it the preferable approach, for the same reasons as set out under the retail markets.

2.208 Therefore, the Director provisionally concludes that there are two relevant wholesale geographic markets for asymmetric broadband origination: the UK (excluding the Hull Area) and the Hull Area.

Asymmetric Broadband Origination in the UK (excluding the Hull Area)

2.209 As stated in the retail geographic market definition, the geographic boundary of the relevant market is generally defined using the concepts of demand and supply side substitution. However, in this particular case, the common pricing constraint that exists is the more relevant determinant of a national market (excluding the Hull Area).

2.210 As at the retail level, BT's charges for its wholesale asymmetric broadband origination services possess geographically uniform prices where it is available, with the caveat of its Exchange Activate service. BT's decision to set national tariffs for its wholesale broadband origination services is its own commercial decision. Ntl and Telewest do not currently sell wholesale variants of their retail broadband access services to third parties.

2.211 BT's Exchange Activate service is designed to allow local communities to obtain wholesale broadband (ADSL) services through the enabling of BT's analogue local exchanges in areas where BT has decided it is not economic to

broadband enable exchanges in the absence of up-front recovery of the sunk costs involved. Exchange Activate involves the reimbursing of these investment costs to BT up front. Whilst the wholesale supply of Exchange Activate services clearly possesses a different pricing structure to the other areas of the UK where BT has decided it is commercial to roll out broadband services in the absence of up front cost recovery, the Director considers that this does not undermine the conclusion that the relevant geographic market is national.

2.212 This is because even with increasing take-up of the Exchange Activate service, which is currently at trial stage, the proportion of BT's broadband wholesale service customers being supplied through this service will be relatively small (the Director estimates no more than 20%) such that the great majority of BT's wholesale services will remain subject to the common national pricing constraint. The Director considers that whilst he could define geographically separate markets, the disaggregation from the national market of geographic areas supplied by BT via Exchange Activate services would not be informative in the assessment of Significant Market Power, the purpose of the definition of economic markets.

2.213 BT's uniform wholesale broadband origination pricing means that any response by BT to competitive constraints at either the retail or wholesale level in the form of lower wholesale prices would apply throughout the areas of the country where BT's access network has been broadband enabled, excluding the Hull Area. This common national pricing constraint leads the Director to provisionally conclude that the geographical extent of this market should be regarded as the whole of the UK excluding the Hull Area. Once more the Director notes that this national market exhibits local characteristics. These local characteristics relate to the fact that BT's current two most material competitors are the cable companies whose franchise areas do not overlap, but who also set geographically uniform retail prices for asymmetric broadband internet access in their franchise areas.

Asymmetric Broadband Origination in the Hull Area

2.214 The only provider of both retail and own supply wholesale fixed asymmetric broadband origination in the Hull Area is Kingston. Therefore, Kingston is isolated from the competitive constraint deriving from the operation of BT's geographical price averaging described above because BT is not currently competing in the Hull Area.

2.215 On the demand side, in response to an increase in the price of wholesale asymmetric broadband origination in the Hull Area, it is unlikely that customers would seek to move their location to outside the Hull Area. Therefore, a wholesale broadband origination service being offered outside the Hull Area would not be considered an effective demand side substitute for broadband origination within the Hull Area.

2.216 On the supply side, if a hypothetical monopolist in the Hull Area was to raise the price of asymmetric broadband origination above the competitive level, it may be feasible for a provider outside the Hull Area to enter the market by investing in the appropriate broadband origination infrastructure. However, the cost of such investment would be very significant and involve considerable sunk costs. Therefore, there is not sufficient potential for supply side substitution from outside of the Hull Area to constrain the pricing behaviour of a hypothetical monopolist in the Hull Area to the competitive level.

2.217 It is also the case that there is no common pricing constraint between the Hull Area and the rest of the UK. Thus the Director provisionally concludes that it is appropriate to define a separate geographic market for the Hull Area on the basis of lack of demand side and supply side substitution and the absence of a common pricing constraint with other areas in the UK.

Broadband conveyance in the UK

2.218 The Director provisionally concludes that the broadband conveyance market is UK wide. Once more, whilst the geographic boundary of the relevant market is generally defined using the concepts of demand and supply side substitution, in this particular case there again exists a common pricing constraint in the UK that is the more relevant determinant of a national market.

2.219 BT's charges for its wholesale broadband conveyance possess geographically uniform prices where it is available. BT's decision to set national tariffs is its own commercial decision. Ntl and Telewest do not currently sell wholesale broadband conveyance services to third parties.

2.220 BT's uniform wholesale broadband conveyance pricing means that any response by BT to competitive constraints in the form of lower wholesale prices would apply throughout the areas of the country where BT's ATM network exists. This common national pricing constraint suggests that the geographical extent of this market should be regarded as the whole of the UK.

2.221 The Director does not consider it appropriate to define a separate market for the Hull Area as Kingston's network size means that in practice the amount of broadband conveyance that interconnecting operators would ever require in the Hull Area is unlikely to be material.

Summary list of markets

2.222 In conclusion, this section sets out the full list of wholesale markets the Director has identified in this chapter:

- Asymmetric broadband origination in the UK excluding the Hull Area;

- Asymmetric broadband origination in the Hull Area;
- Broadband conveyance in the UK.

Forward look

2.223 During the analysis defining these wholesale markets, the Director has considered the likelihood of relevant competitive and technical developments that might affect these market definitions with respect to: the development of new broadband access technologies; potential trends in further increasing willingness to pay for broadband access services as customers become increasingly aware of and experience these higher quality services.

2.224 The Director will keep market conditions under review and considers that, given the available information, he has fully taken into account likely competitive and technical developments within the relevant markets for the next 18-24 month period.

The relationship between the market reviews and Competition Act 1998 and Enterprise Act 2002 investigations

2.225 The economic analysis carried out in this consultation 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 or the Enterprise Act 2002.

2.226 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…"

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 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".

- 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."

2.227 In addition, it is up to all operators 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 operators 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 or Enterprise Act 2002 applying to their conduct.

Chapter 3

Market Power Assessment

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" (ie: a specific market for electronic communications networks, electronic communications services or associated facilities). Accordingly, having identified the relevant market as discussed in Chapter 2, the Director 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 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."

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".

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.

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.

3.3 In the context of this market review, when assessing SMP it is appropriate to take account of the fact that there is regulation of a further upstream service to the wholesale level being considered. This relates to the existence of cost-based unbundled local loops (as required under the LLU Regulation 2887/2000) which can be used to assist entry into the relevant wholesale markets defined below. The existence of this current regulation needs to be taken into account in the present analysis in order to capture fully the competitive constraints at the (further downstream) wholesale level being considered.

3.4 The following analysis focuses on assessing whether BT, ntl, Telewest and Kingston possess single dominance or are collectively dominant in the relevant wholesale asymmetric broadband origination and broadband conveyance markets. If the Director considers no firm has SMP by itself or collectively, the markets will be found to be effectively competitive.

3.5 In assessing SMP in the wholesale markets for both asymmetric broadband origination and broadband conveyance the Director uses the most appropriate available information to inform the assessment. This evidence may relate to the wholesale markets directly or may be information on the retail markets that can inform the wholesale analysis. For example, in the analysis below the Director has estimated market shares at the wholesale level based on information available at both the retail level for end-to-end network providers and at the existing wholesale level.

3.6 This Chapter considers the assessment of significant market power (SMP) in the wholesale markets defined in Chapter 2. The SMP analysis is based on the evidence available to the Director and takes account of responses made to the previous consultation.

Summary list of SMP designations

3.7 This section will analyse whether any operator either individually or jointly possesses SMP in the relevant markets. This equates to concepts of single firm dominance and collective dominance in Competition Law. The Director provisionally concludes that:

- BT possesses SMP in the wholesale market of asymmetric broadband origination in the UK excluding Kingston upon Hull;
- Kingston possesses SMP in the wholesale market of asymmetric broadband origination in Kingston upon Hull;
- BT possesses SMP in the wholesale market of broadband conveyance in the UK.

Criteria used in assessing SMP in the markets for wholesale broadband access services

3.8 As explained in Chapter 2, it is the Director's view that markets can be identified as follows;

(i) asymmetric broadband origination market in the UK (excluding Hull);
(ii) asymmetric broadband origination market in the Hull area; and
(iii) broadband conveyance market in the UK

This section undertakes single firm and subsequently collective firm dominance (significant market power) assessments in relation to wholesale asymmetric broadband origination in the UK (excluding Kingston-upon-Hull). It also assesses SMP in relation to asymmetric broadband origination in Kingston-upon-Hull.

Single Firm Dominance in the UK (excluding the Hull Area)

3.9 In the Director's view the most important criteria for the assessment of SMP in these markets are:

- Market growth and market shares
- Future potential market shares
- Barriers to entry and expansion
- Economies of scale and scope
- Countervailing buyer power
- Assess to capital markets.

3.10 For a full discussion of all of the remaining criteria relating to assessment of single firm dominance in the market for wholesale asymmetric broadband origination see Annex B. The assessment of SMP in these markets as set out below is based on the evidence available to the Director and takes account of comments made in the first stage of consultation.

3.11 In response to his First Consultation, there was wide-spread agreement that the Director had used adequate criteria in this SMP assessments. However, BT suggests that the Director has not applied these criteria in a manner which recognises the nascent and dynamic nature of this market. BT comments that the Director should have considered the SMP criteria within a wider group of retail services (to include narrowband services). Nor does BT believe that the Director has adequately described the weights he has placed on various criteria or reflected the inter-relationships of pricing, market share and other competitiveness indicators. BT further consider that market shares are a poor indicator of market power in this new product market.

3.12 In response, the Director considers that his general weighting of the SMP criteria he uses is made clear by his incorporation of the salient indicators in this chapter and his listing of the remaining criteria in Annex B. The Director also

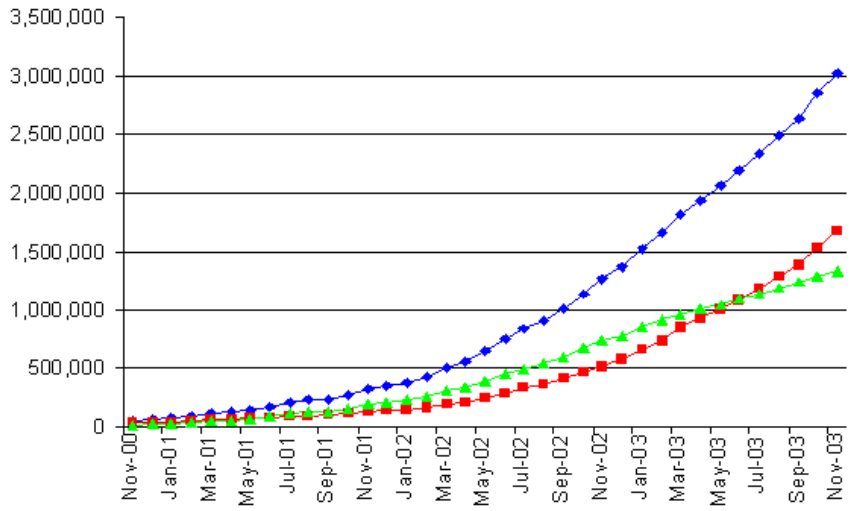
rejects the BT comment that he should have considered the SMP criteria within a wider group of retail services (to include narrowband services). He has explained the relevant market definition analysis and conclusions in Chapter 2.

3.13 Furthermore, he considers that his treatment of market shares demonstrates his recognition that he is designating SMP in a relatively new and dynamic market. He has not only considered past and present market shares and their trends. He has also considered BT's likely future growing market share trend during the time scale of this review in light of BT's continued broadband roll-out now allowing it access to over 80% more premises than cable broadband. It is also the case that the Director has not considered market shares in isolation. He has focused on this measure as an important indicator, which is informative both today and going forward, within the context of a number of other relevant indicators.

Market Growth and Market Shares

3.14 As can be seen from Figure 3.1 steep increases in broadband take-up have been experienced in the UK during 2002/3. In November 2003 the UK had in excess of 3 million broadband subscribers; and the retail broadband sector was worth around £1.1bn (inc-VAT) per year.

Figure 3.1, UK Broadband end-users by volume: November 2003



Source: End-user figures provided to Oftel by industry operators.

3.15 As noted in the OFT's *Assessment of Market Power* Competition Act Guidelines http://www.oft.gov.uk/NR/rdonlyres/e7ugn7kkhubh62jlrxurfhpvlhotzb5bdlmzyi6gmdxuzfgcra252mge4v5npeundb5p4ism2wfqz2rnojbmpu7lhma/oft415.pdf, it can be

informative in product markets possessing some degree of differentiation to analyse market shares both by revenue and volume. This is because revenue shares will capture the effects of any premiums above the competitive (cost-based) price level that operators are able to charge. Nevertheless, a higher share by revenue is not necessarily indicative of greater market power. For example, the supply of more costly services than competitors would also be consistent with a higher market share by revenue than volume.

3.16 In the following analysis the Director will only present wholesale market shares on volume basis, that is, the number of subscribers. Revenue market shares are not easily discernible since of the two UK cable operators only one has commenced the sale of an upstream broadband service to an ISP. It is the case that this is an intermediate, not a wholesale, service (as defined in this review) which is sold directly to an ISP and thus does not allow other operators to add upstream network elements. Furthermore, there are no published prices for this one cable intermediate service such that no explicit wholesale or intermediate prices are available.

3.17 In addition, there are likely to be considerable compositional effects caused by a substantial share of ntl's broadband customer base being composed of customers who take ntl's lower priced 150kbit/s service and associated lower costs. This means that a high revenue market share might simply be a reflection of the different compositional effect (i.e. selling higher quality/speed products) rather than a genuine indication of market power. These factors, coupled with the Director not possessing any evidence of excessive pricing in this wholesale market means that the most appropriate information available to him in measuring market shares is by volume.

3.18 As described in chapter 2, the wholesale broadband origination market includes BT, cable operators and operators using other broadband access technologies. Subscriber numbers by network (ie ADSL or cable and not ISP retail shares) at the retail level are used to proxy for wholesale market shares by volume. The main adjustment made is that customers supplied by LLU operators are excluded from BT's market shares and included in Others.

3.19 It is legitimate to use the network market shares at the retail level (ie the shares of retail customers that are provided their broadband internet access over ADSL or cable) to indicate wholesale market shares in this context. Since a purpose of the market reviews is to identify any proportionate ex-ante obligations, the SMP assessment should be undertaken assuming no remedies are in place at the wholesale level being considered. As discussed in the previous chapter, in the absence of wholesale regulation it is likely that no wholesale products would be provided. It is therefore, likely that three vertically integrated operators BT, ntl and Telewest would compete at the retail level. The relevant market shares in the implicit wholesale market would therefore closely reflect the network market

shares at the retail level. In other words, the network market shares at the retail level will be indicative of their market power at the wholesale level.

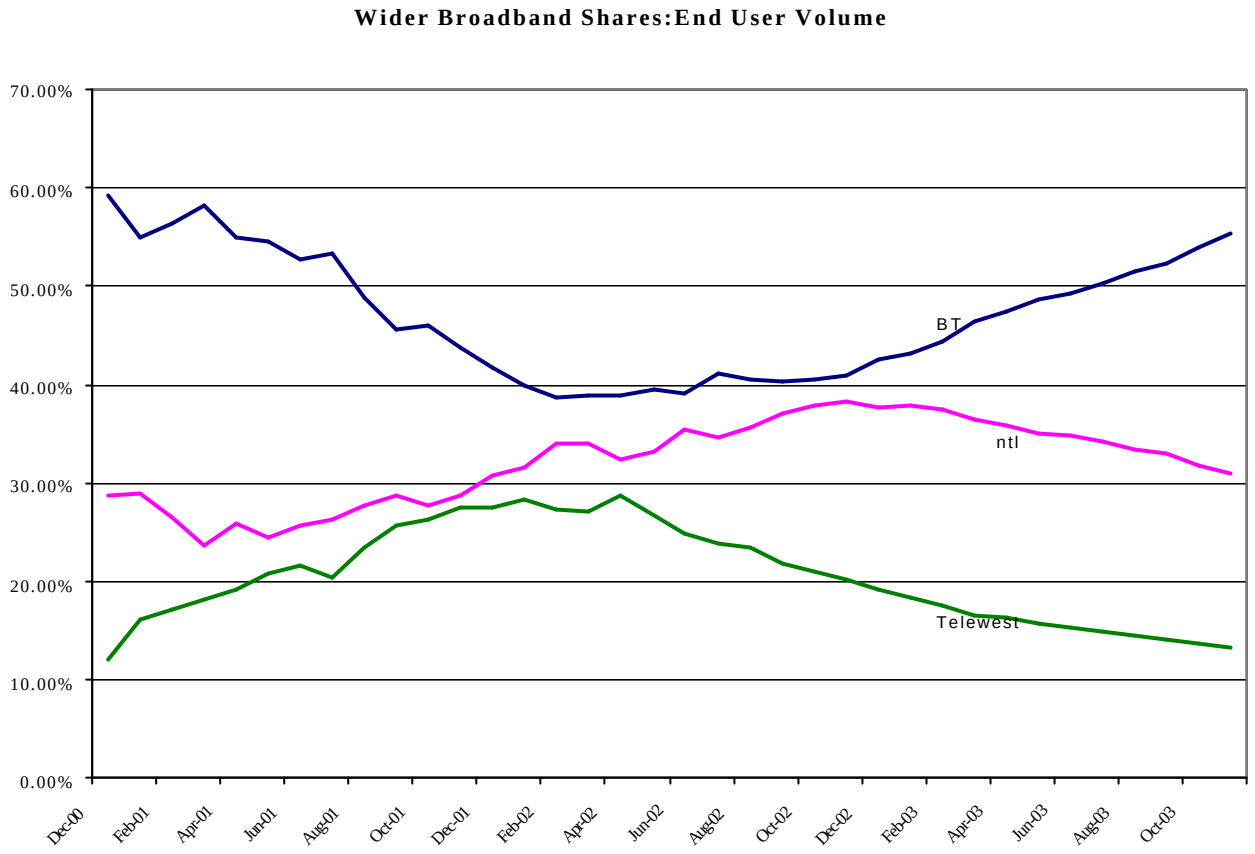
3.20 Table 3.1 and Figure 3.2 below show the current shares of UK broadband subscribers that are being supplied over BT's ADSL network, the cable companies' modem enabled networks or via other broadband access mechanisms such as fixed wireless access and satellite services.

Table 3.1, Network shares of broadband end-users by volume

	BT	ntl	Telewest	Others
December-00	59.2%	28.7%	12.0%	0%
January-01	54.9%	28.9%	16.2%	0%
July-01	53.3%	26.2%	20.4%	0%
January-02	39.9%	31.7%	28.4%	0.05%
April-02	38.8%	32.5%	28.7%	0.06%
July-02	41.1%	34.6%	23.8%	0.47%
October-02	40.4%	37.9%	21.1%	0.62%
January–03	43.1%	37.8%	18.5%	0.62%
April-03	47.4%	35.7%	16.3%	0.58%
July-03	50.3%	34.2%	14.8%	0.64%
October-03	52.5%	32.8%	14.1%	0.61%
November -03	55.!%	30.8%	13.2%	0.86%

Data at month beginning
Source: Asymmetric Broadband Customer Figures provided by industry operators.

Figure 3.2, BT, ntl and Telewest's market shares of broadband end-users by volume



Source: Asymmetric Broadband Customer Figures provided by industry operators.

3.21 The current (November 2003) shares of retail asymmetric broadband subscribers, for whom cable's and BT's wholesale asymmetric broadband origination is being used as an input to provide the retail service, show that BT currently possesses 55% of this wholesale market with ntl and Telewest having market shares around 30% and 13% respectively (ntl's 150kbit/s – formerly 128kbit/s - and Tiscali's 256kbit/s services are now included in these figures since they now fall inside the market definition for asymmetric broadband internet access). These market shares include those sales that are self provisioned to the downstream business of each operator.

3.22 As explained in chapter 2, paragraphs 2.168-2.179, in the absence of regulation, it is likely that wholesale products would not exist and that competition between ADSL and cable based broadband internet access would take place at the retail level. As discussed previously, in this scenario the pricing constraint at the wholesale level would be an indirect constraint via competition at the retail

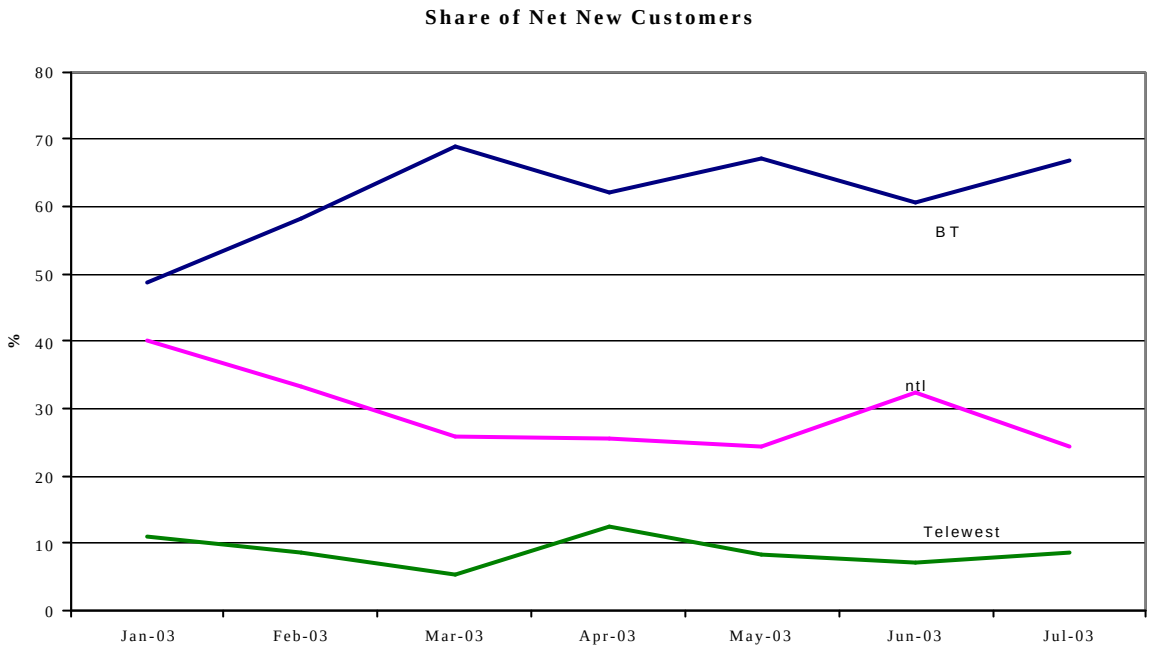
level. This suggests that the constraint at the wholesale level is weaker compared to constraints at the retail level.

3.23 If the indirect constraint were so weak such that distinct ADSL and cable wholesale markets were identified then it would be legitimate to consider separate ADSL and cable market shares at the wholesale level. If ADSL shares were considered at a wholesale level, then BT would have around 98% share of DSL services with around 2% accounted for by LLU operators. However, as set out in chapter 2, the Director considers that the indirect constraint is sufficient to ensure that the relevant wholesale market should include both ADSL and cable. Therefore, consideration of shares of ADSL services leads to an exaggerated assessment of the market position of BT in the wholesale market.

3.24 BT's wholesale market share had declined from a peak of 59% in December 2000 very early in the development of this market. But, its share commenced growing again from a nadir of 38.8% in February 2002 to reach its current share of 55% in a period of around 18 months. This increase in BT's market share has been directly mirrored by a reduction in the combined share of the cable operators. The total wholesale market share accounted for by LLUOs, satellite, fixed wireless access customers and other technology operators remains less than one percent in November 2003. Suppliers using other broadband technologies (i.e. other than ADSL and cable) and LLU operators are not currently providing services on a sufficient scale to affect competition materially in the wholesale market. Nor are they likely to do so during the period covered by this market review. This is because of the significant investments that are required to establish such mass market services (discussed further in the entry barriers section below) and the lead times between undertaking these investments and achieving a mass market presence. Refer to Annex A for a fuller discussion of other technologies used to provide asymmetric broadband Internet access.

3.25 Since August 2002 BT has acquired more new broadband subscribers at the wholesale level each month than cable. Between the end of January 2003 and July 2003 BT has acquired in excess of 500,000 new (net) subscribers compared to just less than 300,000 for cable. This trend is continuing with BT's share of new asymmetric broadband origination customers now over 60% as illustrated in Figure 3.3.

Figure 3.3 – Share of new customers by operator



Source: Asymmetric Broadband Customer Figures provided by industry operators.

3.26 The above information on market share levels and trend growth suggests that BT has SMP in the market for asymmetric broadband origination. However, the Director does recognise that given changes in market shares over time, BT does not appear to have an entrenched market power in this market.

3.27 Telewest believe that "BT could rightly argue that it does not possess SMP". Its reasoning for this is the Director's "unsatisfactory" consideration of the observed market share volatility. It notes that BT's market share has not been stable or persistently in excess of 50% and argues that the Director's consideration that BT's share has been rising and likely to increase due to BT's ubiquity and broadband roll out aspirations are vulnerable to attack by BT. As the broadband market is evolving rapidly and significantly increasing in size, it believes that the Director's SMP conclusions are speculative when set against the reality of a significant swing in market shares over the last 18 months.

3.28 The Director agrees with Telewest that the market share data has been volatile over the last 30 months and has accordingly indicated that he does not therefore consider that BT has an entrenched market position. However, as set out in the analysis above, BT's market share has been on an upward trend for the last 18 months i.e. since June 2002. In addition, as set out below, BT's future potential market shares are significantly higher than those available to the future potential market shares of the cable companies. Therefore, the Director

disagrees with the view that BT does not possess SMP in the market for broadband origination.

3.29 The Director considers that BT's market share of around 55% and its upward trend since April 2002 supports a finding that BT has SMP in the market for asymmetric broadband origination.

Broadband pricing

3.30 The Director considers that the substantial increase in BT's market share over the last year (from 39% in June 2002, to 55% in November 2003) has mainly been the result of three significant developments: BT's substantial price reductions of April 2002 for its intermediate services to ISPs and retail ADSL internet access prices; and BT's "hard-launch" of the retail BT Broadband service in the summer of 2002; and BT's decision to expand its geographic toll-out of ADSL, coupled with the fact that there was little provision of cable in those newly enabled areas.

3.31 BT introduced significant reductions in its ADSL intermediate service (IPStream and BT Central) charges during 2002 and early 2003, (with the biggest reductions occurring in April 2002) such that, for example, the price of IPStream 500 fell by around 40%-50% during the year from £30 in January 2002 to £14.75 in April 2003 for engineer install products and from £25 in January 2002 to £14.75 for self install products. This was in an early phase of development of the broadband market and was a stimulant to demand in the market. The price reduction had the effect of causing the removal of the large differences in retail prices between the asymmetric broadband internet access products provided over ADSL and cable. The further effect of this significant price reduction appears consistent with the marked and continuing increases in BT's wholesale asymmetric broadband origination market share.

3.32 The hard-launch of BT Broadband (BT Retail's no-frills asymmetric broadband internet access retail service) in the summer of 2002 was accompanied by a major advertising campaign and has given a spur to BT's wholesale asymmetric broadband origination market share growth.

Locally Disaggregated Customer Shares

3.33 The Director has previously noted that this national market possesses local characteristics where BT faces head-to-head competition with one of the cable operators in their respective franchise areas. The Director has been provided estimated customer volume market shares figures within the aggregate UK cable franchise area. BT believes that in cable franchise areas as a whole Rate-adaptive ADSL services account for 32% and cable modem customers for 68% of all broadband services. Telewest has provided the Director with market research information that it obtained in June 2003. This snapshot of Telewest's

share of broadband customers shows that whilst its share has been declining since mid-2002, when it possessed an 89% share of broadband customers in aggregate over its franchise areas, it still possesses an average share of 70%, with BT possessing (almost all of) the remainder. When broken down by regional franchise, Telewest's market research states that its broadband customer share varied from 53% in London to 81% in Birmingham. However, as explained earlier, the Director notes that on a national basis the cable companies currently possess a combined 44% market share compared to BT's 55% share.

Future Potential Market Shares

3.34 When considering the market share evidence, the developing nature of this wholesale market must be taken into account. It is thus appropriate to consider the firms' potential to obtain future customer shares in this new and dynamic market. A communications provider's ability to obtain future customers depends on the number of customers to whom it can potentially offer services i.e. the number of addressable premises.

3.35 In the Market Review of the fixed narrowband wholesale exchange line, call origination, conveyance and transit markets, consultation http://www.oftel.gov.uk/publications/eu_directives/2003/eu_narrow/index.htm the Director has stated that BT is dominant in the provision of wholesale narrowband analogue access where it possesses the vast majority of all PSTN access lines.

3.36 The total number of premises in the UK is about 27.3 million, approximately 24.9m households and approximately 2.4m business sites. Due to the ubiquity of BT's access network, BT is able to serve all of these premises. Whereas the cable access networks are able to serve a total of about 13.3 million premises, approximately 8.4m by ntl and approximately 4.9m by Telewest. The premises served by the cable access networks are predominantly households, as opposed to business sites. These numbers thus represent the potential number of premises that could be served broadband by BT and the cable operators if they were to broadband enable their entire access networks.

3.37 It should be noted that ADSL technology is reach limited and therefore a small percentage of BT's potential 27.3 million premises will be beyond the range of exchange based ADSL broadband. The exchanges that BT has so far broadband enabled serve about 80% of all UK premises (source: Oftel Internet & Broadband Brief – October 2003). This represents about 21.8 million premises in total. However, BT estimates that about 3% of these premises are beyond the range of its current service offerings. This means that BT's ADSL broadband service(s) are currently available to about 21.2million premises. In comparison 79% of ntl's cable network and 96% of Telewest's cable network is currently

broadband enabled, which represents 6.6 million and 4.7 million premises respectively.

3.38 It is therefore the case that BT's network can currently serve broadband to over three times as many premises than either of the cable networks. Given that the cable networks do not overlap it is useful to compare BT's broadband coverage with the combined broadband coverage of the cable operators, ie 21.2m v 11.3m. Thus, BT has the ability to provide broadband to over 85% more premises than the cable operators, given the current rollout. Or to put this another way, of all the premises that are in ADSL and/or broadband cable areas, 53% have a choice between the two whereas the remaining 47% are only supplied by BT.

3.39 However, BT announced in November 2003 that it has set a goal of rolling out ADSL broadband to over 99% of communities by 2005 (source: BT press release 17 November 2003). Achievement of this aspiration would result in approximately 26m premises being broadband addressable by BT. If cable operators were to broadband enable all the premises they currently pass this would increase their addressable premises to only 13.3m. Therefore, BT with its 99% reach would have the ability to provide broadband to 95% more premises than the cable operators, ie about 50% of premises will not have a choice between cable and ADSL.

3.40 The Director considers that BT's continued desire to roll-out its broadband availability when coupled with its ubiquity and dominance in the provision of wholesale narrowband analogue access services means that it has far greater ability to obtain increasing numbers of future asymmetric broadband customers and thus market share than its cable operator competitors. This future potential for gaining wholesale asymmetric broadband origination market share is an important consideration given that this market is still growing. As a result the Director expects BT's achieved wholesale market share to continue to increase from its present level of approximately 55% over the time scale of this market review.

3.41 The Director notes that this view is not affected by the existence of LLU. This is because at present LLU operators are primarily competing in the provision of symmetrical DSL technologies such that they do not provide a significant competitive constraint in the provision of asymmetric broadband services.

3.42 BT argues 5% of premises currently within the UK's Rate-adaptive ADSL and cable modem coverage area can only be supplied broadband by cable modem services. The Director notes this information but does not consider that this would affect his conclusions on his analysis of future potential market shares or SMP in this market. BT is still able to serve significantly more potential premises than either of the cable networks.

3.43 BT argues that its historic and projected market shares do not support a finding of dominance in this nascent and dynamic context. It does not believe that future supply materially affects the current comparison between cable and copper and that the dramatic changes in market shares over the past two years indicate a high degree of competitive activity. BT further argue that competition will intensify for broadband origination services as broadband volumes grow.

3.44 In response, the Director considers that whilst BT currently has the ability to broadband enable significantly more premises than the UK cable companies combined, BT's intention to continue its roll-out along its ubiquitous copper network is relevant as it indicates continuing growth in BT's enabled capacity. Furthermore, the Director considers that whilst there was significant market share fluctuation when the market was very new, he now considers that BT's share, which has been growing steadily for each month of the last three quarters, has developed along with the market to the extent that both its current share and likely future upward trend are illustrative of its possession of SMP. The Director considers that his accompanying analysis of other SMP indicators support this illustration such that future competitive pressures in this growing market, over the time scale of this review, will not be sufficient to undermine BT's possession of SMP.

3.45 The one respondent that commented on this issue, SPC Network for the "Altnets", agrees with the Director's conclusion of SMP. It agrees with the Director that under the revised definition of broadband BT still possesses single firm SMP in this wholesale market. In further agreement with the Director it states that, the underlying cause of BT's SMP is its ubiquitous (national) access network and hence its larger addressable market than other operators. SPC Networks expects BT's actual market share to expand over the period of this review in a similar fashion to the Director.

Barriers to Entry and Expansion

3.46 There are significant sunk costs for new operators seeking to offer asymmetric broadband origination services using both ADSL or cable modem technologies. These include the substantial sunk costs associated with building a local access network, enabling network elements to support broadband traffic (e.g. DSLAMs) and building further network from the DSLAM to the core network i.e. the backhaul element. Building network infrastructure is very costly, time consuming and is difficult for new entrants to duplicate.

3.47 The UK's cable companies (in the areas where they currently have local narrowband access networks) and BT have had to incur significant sunk investments in order to enter the wholesale asymmetric broadband origination market. But these have only related to the sunk costs associated with enabling narrowband network elements to support broadband traffic. Confidential information provided to the Director by asymmetric broadband operators suggest

that on an aggregated annual basis in the UK numerous tens of millions of pounds have been invested in the broadband enabling of analogue access networks.

3.48 Whilst these sunk costs are extremely large, total new build network operators will have to face these costs as well as significant sunk costs associated with building local access and backhaul networks. These further network build costs are likely to be an order of magnitude greater than the broadband enabling costs.

3.49 Notably, in areas where cable operators do not currently have local access and backhaul networks, they will face similar costs to new build operators. In other words, in order for a cable operator to expand the number of its addressable lines it needs to sink significant costs in rolling out network into new areas in addition to enabling its existing network to carry broadband traffic. BT, on the other hand, has only to invest in enabling local exchanges to cope with broadband traffic to expand the potential number of customers it can reach. This cost is of a much lower magnitude compared to that which would need to be incurred by cable operators who wished to expand their networks.

3.50 Whatever the pre-entry price set by incumbent broadband origination operators, what matters for the profitability of new entry is the price that would arise from competition between firms post-entry. If the expected post-entry price is such that the entrants' post-entry profits fail to recover the sunk costs of entry and if the entrant foresees this, then entry will not take place. Accordingly, the high sunk costs of entry and the potential for reduced prices post-entry are deterrents to new operators entering this wholesale broadband origination market.

3.51 BT argues that the Director should seek to evaluate sunk cost inputs against relevant lifetime revenues in this context. The Director's approach does evaluate whether entrants are able to recover the sunk costs over the lifetime revenues. However, what is important is to consider whether the lifetime revenues at the post entry price would be sufficient to recover the sunk costs. As set out in the paragraph above, the Director considers that the high sunk costs associated with entering this market and the potential for lower prices post entry act as significant deterrents to entry for potential entrants.

3.52 The Director notes that there may also be some first mover disadvantages. These include investments being made and sunk costs being incurred at a time when demand is uncertain. Moreover, those firms first in the market may be at a disadvantage relative to new entrants who have ability to purchase newer generations of equipment e.g. DSLAMs. These may be more efficient or offer more flexibility than the equipment that the first mover had access to when entering the market.

3.53 It has been suggested that it may be difficult for cable companies to upgrade their backhaul rings to enable them to expand broadband capacity in the absence of significant further investment. This would mean that they would face greater barriers to expansion than ADSL incumbent providers. However, this potential issue has not been raised by the two cable operators in the UK. The Director does not have robust information on this issue but notes that it would support his finding that there are significant barriers to entry and expansion in the market for asymmetric broadband origination.

3.54 The Director concludes that there are significant barriers to entry to the wholesale broadband origination market for potential new entrants using DSL or cable modems. These largely stem from the large sunk costs that are required to be incurred to enter the market. These introduce a significant deterrent to entry for potential entrants to the market.

LLU Operators

3.55 LLU operators (LLUOs) are currently able to obtain cost-based wholesale local access and backhaul as inputs from BT which they can then enable to constitute elements of wholesale broadband asymmetric origination. Access to these upstream regulatory inputs allow LLUOs the potential to compete with BT and cable companies in the market for asymmetric broadband origination without having to incur the substantial sunk costs of network build (although they do have to bear sunk costs associated with co-location, which non-LLUOs do not). However, LLUOs are unlikely, during the period of the current market review, to materially affect competition in the asymmetric broadband origination market. This is largely due again to the sunk investments that still need to be made, lead times and the economies of scale associated with deployment which act as significant barriers to entry and expansion. Notably, at the middle of November 2003, only 7750 loops in total had been unbundled and of these only 2700 were shared access and so being used to offer wholesale asymmetric broadband origination services.

3.56 However, the Director considers that in the medium to longer term, entry by LLUOs or the credible threat of entry by them may provide an increasingly important constraining effect on BT and cable operators. As demand by end users for asymmetric broadband services increases, LLUOs will become more confident of being able to recover sunk costs of entry and are more able to benefit from and exploit the economies of scale available in the provision of these services.

3.57 BT argues that the range of business plans currently being implemented by LLU operators shows that they are targeting distinct market segments with the most appropriate access technology. BT believes that over the lifetime of this market review, the capability of LLU operators (and other operators) to displace BT will increase markedly via the pressure which ISPs will put on alternative

network operators. BT present a forecast conducted for them in November 2002 by Gartner Group. This forecast shows a total of 89,000 unbundled loops (30,000 shared access) in 2003/4 and 275,000 (115,000 shared access) in 2004/5.

3.58 In response, the Director simply does not see any sign that such wide scale loop unbundling is likely within the next two years in the UK and BT provided no evidence in support of the forecasts it provided. Furthermore, even if this extremely optimistic figure of unbundled loops were met in 2004/5, 115,000 shared access loops being used to offer wholesale asymmetric broadband origination services would represent significantly less than 5% of the relevant market, based on current size.

Alternative Broadband Technologies

3.59 The main alternative technologies (to ADSL and cable modems) capable of providing asymmetric broadband origination, including fixed wireless access, and satellite, tend to be broadband specific access technologies, i.e. they are not based on the broadband enabling of an existing narrowband platform. Full details of these alternative technologies are provided in Annex A. These technologies require the creation of new (broadband) access methods. As such they do not need to incur the broadband enabling costs associated with DSLAMs or cable modems. However, these operators will need to make considerable sunk investments in the development of these technologies, and the building of the access and backhaul networks.

3.60 The Director considers that these alternative broadband technology access methods are medium to longer-term prospects that are unlikely to have a significant effect during the time scale of this market review. Respondents, including BT and Energis, agreed with the Director's view. This is because of the unproven nature of these technologies as commercial propositions on a large scale, the significant investments that are required to establish such technologies as mass market services and the lead times between undertaking these investments and achieving a material market presence.

Economies of scale and scope

3.61 The above discussed entry barriers to the wholesale broadband asymmetric origination market for an operator seeking to achieve a material network operating size are likely to be exacerbated by the significant economies of scale, scope and density that characterise telecommunications access networks.

3.62 As noted with reference to LLU operators, BT is able to benefit from considerable economies of scale that will not be available to many new operators. In particular, large economies of scale are present in both the DSLAM and backhaul elements of asymmetric broadband origination services. These scale economies are due to the nature of DSLAM and backhaul investments. For

example, this means that the greater number of end users at the concentrator level the lower the unit costs per line. The concentrator level supports only a finite number of customers, only a proportion of whom may be broadband customers. Thus a supplier of broadband services would need to secure a significant number of the broadband customers in order to achieve low and efficient unit cost per line. This effect acts to create a further entry barrier into the market for new operators, e.g. LLUOs, who are likely to possess higher unit costs than incumbents as they enter the market.

3.63 BT argues that these scale economies are equally available to competitors. The Director responds that whilst they are available to the cable companies in cable areas they are not achievable in the short to medium term in other areas or for many newer and smaller operators in this market.

3.64 BT and the cable companies also benefit from significant economies of scope in the wholesale asymmetric broadband origination market, as they do in other wholesale fixed access markets. The economies of scope relate mainly to duct infrastructure that supports a range of other telecommunications access services. These economies of scope act as a further barrier to entry to this market, as a new entrant would initially not have existing duct infrastructure in place.

3.65 BT argues that this is not a relevant source of competitive advantage given their requirement to offer line sharing. However, line sharing is only a requirement from the customers' premises to the concentrator site. There are economies of scope open to BT upstream from the concentrator site, eg in the operation of DSLAMs and backhaul facilities.

Countervailing buyer power

3.66 Current and potential future customers of BT's wholesale broadband asymmetric origination services are unlikely to possess sufficient countervailing buyer power to undermine BT's market power. BT's customers will be operators who will (have) enter (entered) the relevant downstream markets using the wholesale inputs proposed in Chapter 4 of this market review. These customers will have countervailing buyer power only if they have a credible threat to take their custom elsewhere, thereby forcing BT to offer its products at lower prices or higher specification. It is the Director's view that BT's customers are unable to provide such a credible threat and as such they are unlikely to be able to exercise significant countervailing buyer power over the time scale of this market review.

3.67 BT argues that, on the contrary, there is already vibrant countervailing buyer power. It notes that the cable companies are active in sourcing traffic over BT's network and are also capable of using their own access and core networks to displace BT. BT further argue that the ISPs are providing significant pressure

for it to reduce wholesale and intermediate prices, for example by requiring BT to tender against other network operators. It expects this pressure to intensify during this market review's time scale. BT further comment that through the exertion of this countervailing buyer power, third party network operators winning ISP business will be in a position to achieve similar scale economies to BT.

3.68 In response, the Director considers that BT's customers do not have the ability to construct a credible threat to take their custom away from BT and that they will not be able to develop such a credible threat over the time scale of this review. This is because cable companies are not offering a wholesale broadband origination product so BT's customers have no alternative source of supply. In addition, although ISPs are requiring BT to tender against other network operators, this relates mainly to intermediate services, which are not subject to analysis in this review.

Easy or privileged access to capital markets/financial resources

3.69 BT is a large and well-established company with a long track record and a relatively diversified business and is perceived to have stable cash flows. It has a good credit rating and investors are likely to view both the company in general terms and specific projects for which it seeks funding a less risky proposition than many relatively newer entrants. Therefore, it is likely that BT would face lower borrowing premiums than its competitors. This is a potentially important advantage for BT in the wholesale asymmetric broadband origination market given the substantial levels of capital investment that are required to broadband enable analogue networks on a large scale or to develop significant new build broadband networks.

3.70 BT comments that if finance markets are competitive and efficient then access to finance is not a relevant factor. It further argues that whilst the potential for BT to raise funds more easily and cheaply than competitors may yield it lower total costs, this is not necessarily a source of market power. The Director disagrees, he considers that lower borrowing premiums are a potentially important advantage for BT as would be potential access to any other input at costs unattainable by competitors.

Consultation responses on SMP

3.71 In response to the previous consultation, the majority of respondents (ten) agree that BT possesses single firm SMP in this wholesale market largely for the reasons outlined by the Director. The most salient of these reasons, in the general view of respondents, being, BT's current and potential future market share, its copper network ubiquity, and the absence of likely significant growth of either non-ADSL and cable technologies or LLU operators over the timescale of the review. However, it should be noted that these responses were made in the context of the previous (narrower) definition of retail broadband services.

3.72 Only BT and Telewest disagree that BT possesses SMP. Both believe that BT does not. BT's specific comments have been incorporated into the earlier part of this chapter. However, in general it believes that the Director has examined the key indicators separately rather than jointly and that too much weight has been given to market shares. The Director disagrees. He considers that he has considered a range of indicators and that his conclusions do not rely unduly on market shares, which is nevertheless an important indicator.

3.73 BT believes that SMP is not proven and that a wider market definition including narrowband services would undermine the SMP designation. In response, the Director has already outlined in full the reasons for his market definitions and SMP assessment.

3.74 BT further argues that competition will intensify for origination services as broadband volumes grow. Any first mover advantage which BT may have had will be quickly lost as newer technologies come on stream and third parties act jointly in exercising countervailing buyer power to displace BT in the provision of broadband services. In response the Director has considered each of these factors in his analysis presented above. He concludes that for the time period of this review they will not individually or in aggregate act to undermine BT's possession of SMP. Such factors may be more relevant to the next market review, expected in around two year's time.

3.75 Telewest argue that (in essence due to the market definition disagreements explained earlier in chapter 2) the Director's approach has the potential to overstate the market power of cable companies should they "enter" the wholesale market. The Director disagrees. As noted earlier, he has already taken full account of the wholesale market position of the UK's two cable companies by finding their in-house wholesale supply relevant within his analysis.

Draft Decision on SMP

3.76 After considering all of the comments received in response to the proposed finding of BT having SMP in this market, the Director provisionally concludes that BT possesses single firm SMP in the market for wholesale asymmetric broadband origination. This finding is based on: BT's current and growing market share of 55%; the further likelihood for this share to expand in the future given the ubiquity of its network and its continuing roll-out of broadband; the existence of extremely significant entry barriers; the existence of significant economies of scale and scope; the lack of countervailing buyer power; and BT's superior access to capital markets. While recognising the developing nature of this market the Director does not expect this conclusion to alter significantly in the next 18 to 24 months.

Collective dominance in the UK (excluding the Hull Area)

3.77 The Director provisionally concludes that collective dominance is not evident in the market for wholesale asymmetric broadband origination. For a full discussion of all of the Director's criteria relating to assessment of collective dominance see Annex B.

3.78 Although the market is characterised by high concentration with there being only three significantly sized wholesale asymmetric broadband originating operators in the UK, there is no evidence in this market that these companies are co-ordinating their activities either explicitly or tacitly. Furthermore, as can be seen in Annex B, most of the remaining assessment criteria suggest that the wholesale asymmetric broadband origination market is not characterised by collective dominance. In particular, BT and the two UK cable operators have not presented themselves as a collective entity within the market. The Director considers that the market is best characterised by the two cable operators seeking to compete with the SMP operator BT. Thus, the Director does not currently consider that BT and cable operators jointly possess SMP in the market for wholesale asymmetric broadband origination.

3.79 The Director received no comments in response to his conclusion of no collective dominance in the market for wholesale broadband origination.

Single Firm Significant Market Power in Kingston-upon-Hull

3.80 The Director provisionally concludes that Kingston Communications possesses SMP in the market for wholesale asymmetric broadband origination in the Hull Area.

Market shares

3.81 Kingston is the sole supplier of retail broadband asymmetric access in the Hull Area (Source: Oftel Market Information). It can therefore be assumed to have 100% of the market for wholesale asymmetric broadband origination in the Hull Area.

Other criteria

3.82 The overall size of the relevant wholesale asymmetric broadband origination market in the Hull area is much less than in the rest of the UK. (There are currently approximately 10,000 end users). The assessment of the other SMP criteria of: barriers to entry and expansion; economies of scale and scope; and countervailing buyer power as applied above to BT, Telewest and ntl in the rest of the UK, also relate to Kingston in the Hull Area. The assessment of the remaining criteria relating to single firm SMP detailed in Annex B with reference

to the rest of the UK also applies to Kingston. However, the Director accepts that due to its smaller size Kingston does not possess the same capital market advantages as BT.

3.83 In response to the First Consultation Kingston argues that the Director's market power analysis is flawed and his designation of SMP to Kingston in the Hull Area unwarranted. It argues that competitive pressures in the Hull Area are increasing with the threat of short term local market entry by other operators as it believes the Hull Area is not characterised by enduringly high entry barriers.

3.84 Kingston says that it does not fundamentally quarrel with the overall analysis that it currently possesses some degree of market power in broadband internet access. Where it does diverge from the Director is as to whether or not this position is likely to endure. Kingston argues that new radio access broadband technologies such as FRA and Wi-Fi are sufficiently cheap to allow the Hull Area to be covered by new entrants at relatively small cost. It further considers that the LLU regulations allow for LLU operators to access the Hull Area at the present time without the requirement to invest in a new access network. As such Kingston disputes the Director's claim that considerable sunk costs would be required to enter and compete in the wholesale broadband origination market in the Hull Area. In essence Kingston considers the broadband internet access market in the Hull Area to be fully contestable (on an end-to-end basis).

3.85 In response, the Director disagrees that the wholesale asymmetric broadband origination market in the Hull Area is contestable. The Director notes that in a contestable market, potential entrants face no barriers. Competition takes the form of the threat of entry from potential entrants and this is sufficient to restrain the pricing behaviour of the incumbents and ensure the removal of supernormal profits. However, the tests for a market to be contestable are extremely tough, in particular there must be no sunk costs at all. The Director does not believe that these tests are met for Kingston in the market for asymmetric broadband origination. Moreover, the Director considers that sufficient entry into the Hull Area by other operators to provide an effective competitive constraint on Kingston is very unlikely over the timescale of this review. As such Kingston (who possesses 100% of the relevant market) holds a position of SMP.

3.86 The Director reiterates his view that entry into the Hull Area to supply wholesale asymmetric broadband origination on a significant scale by a competing operator would involve considerable sunk costs that act as a significant entry barrier into this market. In theory if any sunk costs are required to allow entry to a market then the market cannot be deemed to be contestable. This aside, the Director considers that the costs that would need to be incurred by a significant new entrant into the Hull Area would be substantial in relation to the revenues achievable. This would be true for both new access technologies

and LLU operators. As explained earlier, LLU operators would require to make considerable investments in DSLAM and conveyance technologies and networks.

Draft Decision on SMP

3.87 The Director provisionally concludes that Kingston has SMP in the wholesale broadband origination market in the Hull Area. Further, the Director considers it unlikely that his conclusion will significantly alter in the next 18 to 24 months.

Broadband Conveyance

3.88 This section undertakes a single firm SMP assessment in relation to broadband conveyance in the UK. The Director provisionally concludes that BT possesses SMP in this market. When assessing SMP in this market the Director assumes that his proposed remedy to BT's SMP in wholesale asymmetric broadband origination (being consulted on via this current document, see chapter 4), ie the provision of access, has been adopted.

This section considers the following key indicators of SMP:

- Market growth and market shares
- Future potential market shares
- Barriers to entry and expansion
- Economies of scale
- Countervailing buyer power
- Assess to capital markets.

For a full discussion of all of the remaining criteria relating to assessment of single firm dominance in the market for wholesale broadband conveyance see Annex B.

3.89 In response to his first consultation, the majority of respondents (again ten) agree that BT possesses single firm SMP in this wholesale market. Again, only BT and Telewest disagree. These comments are discussed in the relevant sections below.

3.90 BT argues that actual and potential competition for broadband conveyance is substantial and that this competition will intensify for these services as broadband volumes grow. Any first mover advantage which BT may have had will be quickly lost as newer technologies come on stream and third parties act jointly in exercising countervailing buyer power to displace BT in the provision of broadband services.

3.91 In response the Director disagrees that BT's possession of SMP in this market will be undermined during the time scale of this review. These reasons are set out in the relevant sections below. In addition, the Director would highlight the evidence that shows that most service providers are purchasing the 'service B' form of ATM interconnect, which includes conveyance and not the 'service A' type of interconnect, whereby the service provider would provide its own conveyance. This further suggests that actual competition for broadband conveyance is not substantial.

Market Growth and Market Shares (Present and Future)

3.92 As was explained in detail in the earlier single firm SMP assessment relating to wholesale asymmetric broadband origination, the current network market shares of asymmetric broadband subscribers at the retail level show that BT currently possesses around 55% with ntl and Telewest having market shares of 31% and 13% respectively, on a subscriber number basis. Furthermore, BT's share is increasing rapidly in this growing market. The Director's estimate of conveyance shares by capacity, rather than subscriber volumes, in July 2003 are that BT had a market share of around 55%, with ntl and Telewest having market shares of 26% and 18% respectively. Again, the Director expects that BT's capacity based market share is growing in this market.

3.93 In a similar way that network market shares at the retail level were projected to inform the asymmetric broadband origination wholesale market shares, they can also be projected to provide details of the market shares pertaining to the wholesale broadband conveyance market in the UK.

3.94 However, there is a caveat to this method. Following the June 2002 ATM Direction http://www.oftel.gov.uk/publications/broadband/dsl/atmi0602.htm there currently exists two interconnection services that allow access to broadband origination traffic. 'Service A' – interconnection at the parent ATM switch – does not include BT providing any of the accompanying broadband (ATM) conveyance. 'Service B' includes both broadband origination and conveyance – interconnection at the distant ATM node. However, the Director understands that there are as yet very limited amounts of (excluding cable company) OLO self provision of broadband conveyance services, ie OLOs buying ATM interconnection are currently mostly purchasing service B.

3.95 The UK's cable operators do not provide a wholesale access service that would allow other operators to self-provide broadband conveyance. The service that ntl have recently started selling to AOL is an intermediate service incorporating broadband conveyance. This suggests that network market shares at the retail level following an adjustment for DataStream sales, are likely to be a reasonable indicator of market shares for wholesale broadband conveyance. The Director notes that the demand for broadband conveyance will come from ISPs and OLOs without a ubiquitous core network.

3.96 The Director has received information from BT that in August 2003 less than 20,000 broadband end users in the UK were provided their service via a DataStream (commercial or interconnect) service. This equates to less than one percent of the current UK broadband market. Accordingly, the Director estimates that BT has a broadband conveyance market share in the region of 55%, ntl 31% and Telewest 13%

3.97 The Director notes that the inclusion of Kingston in the current analysis would not materially effect the market share figures set out above, as the UK customer base would only widen by approximately 1%.

3.98 Since BT and cable operators self provide broadband conveyance, there is a large proportion of the market that is not available to other operators to compete for. Therefore, it is important to consider the shares of different operators for the share of the broadband conveyance market that is open to competition. As noted above, most OLOs purchase Service B rather than parent node interconnection. This suggests that, at present, OLOs are greatly reliant on BT to provide their broadband conveyance and that BT's current share of broadband conveyance that is open to competition between BT and OLOs is extremely high. However, the Director notes the take up of DataStream services is still relatively new and that the take up of Service A may increase over the period of this review. However, the Director considers that take up will be insufficient to undermine BT's SMP. This is because the Director considers that OLOs will not undertake sufficient roll-out to parent ATM nodes. This is discussed in the barriers to entry and expansion section below.

3.99 For completeness the Director notes the comments received by some respondents to his first consultation arguing that the cable companies' in-house conveyance activities should be removed from the SMP analysis. However, for the detailed reasons explained in Chapter 2 in the earlier analysis of the wholesale asymmetric broadband origination market (and its relation to the relevant retail markets) the Director disagrees.

Barriers to Entry and Expansion

3.100 In assessing whether BT possesses SMP in wholesale broadband conveyance, a key consideration is the level of entry barriers, principally the ease or difficulty of self-provision of broadband conveyance by other operators. This depends crucially on the sunk costs that other operators will need to incur in order to build out their networks to replicate or interconnect with a national ATM equivalent network such as BT's. The Director believes that it is essential for competing operators to offer significant geographic coverage in order to possess a commercially viable service when seeking to compete with a national operator such as BT.

3.101 Given the ability, through regulation of asymmetric broadband origination, of other operators to interconnect with BT's ATM network, these operators can provide a competing broadband conveyance product. However, to do so they need to build out their networks to BT's ATM switches in order to pick up broadband traffic. BT's ATM network consists of approximately 120 switches. When deciding on which ATM switches to build out to, other operators will assess the costs of such build and the volume of traffic which they are likely to obtain at a given switch. This traffic volume will in turn depend on the demand characteristics of the area served by the switch, i.e. whether there is likely to be a high demand for broadband retail services.

3.102 If an operator built out to all of BT's ATM switches it would have no need to purchase broadband conveyance from BT as it would be able to totally self-provide this conveyance. However, the fewer of BT's ATM switches to which build out is achieved the greater remains the dependence on BT's provision of broadband conveyance.

3.103 The Director notes that the economics of build, in terms of sunk costs and volumes, will make interconnection to some of BT's ATM switches more likely than to others. However, he does not possess sufficiently robust information to distinguish between ATM switches to which other operators can be expected to build cost effectively and those to which it is not economic to build due to the sunk costs of entry. This is despite the information provided by BT and explained below. The Director's lack of robust information is related to the relatively new nature of both the broadband retail markets and the broadband interconnection services.

3.104 The Director further considers that in order to provide a viable geographically spread service it is essential to have access to customers connected to all ATM switches, some of which it will not be economic to build out to for other operators. These requirements to build to numerous ATM switches thus constitutes a significant barrier to new entry and expansion within the wholesale broadband conveyance market.

3.105 It is also the case that non-ATM broadband conveyance expansion by the UK's two cable companies would require considerable further investment to be sunk in these networks and this investment would also only be undertaken as a complement to further geographical expansion of the broadband access network.

3.106 BT has informed the Director that its ATM switches are generally located at DLE or DMSU sites. According to BT there are currently three OLOs who possess points of presence at a large percentage of BT's ATM node sites, Energis, AT&T and Mediaways. These companies cover 100 (84%), 103(87%) and 101 (85%) of BT's ATM node sites respectively. There are 16 BT ATM nodes that are not currently covered by any OLO. At these sites the voice switch is only a RCU such that voice interconnection is not possible.

3.107 However, the Director does not consider that the mere presence of these OLOs at ATM nodes is sufficient to undermine BT's possession of SMP. For example, the companies named above have connected to a large number of BT DLEs in order to pick up narrowband traffic (especially FRIACO). However, in many cases they will have done so using IECs (Interconnect Extension Circuits) - these are essentially leased lines purchased from BT. They are a cost-effective means of picking up narrowband traffic, but cannot be used for broadband conveyance. The existence of this form of narrowband interconnect does not necessarily mean that these operators have a real physical presence (ie fibre) at these nodes, which could be used to pick up broadband traffic in the absence of further significant cost. Further analysis undertaken by the Director shows that even those operators with extensive infrastructure would have to dig several tens of kilometres to obtain a presence at most of the ATM switches. The Director considers that this represents a substantial barrier to entry.

3.108 In order for it to be economical for OLOs to interconnect with BT's broadband origination, such that they can compete in broadband conveyance, they will require sufficient densities of broadband origination to justify interconnection and the extra costs that this would incur. As is clear from the consideration of current market shares such densities do not currently exist, nor are they likely to exist for the timescale of this review.

3.109 BT disagree that a presence at all of BT's ATM switches is necessary to provide a viably spread geographic service. They believe that the three companies named above already possess a significant geographic presence and that to match BT's footprint they would only require to build to an additional 16-19 ATM nodes. BT has calculated that from their existing points of interconnect, 100% coverage of BT's ATM nodes could be achieved by these three companies with only an additional 140-170km's worth of build (by line of sight). BT suggests that this does not represent a substantial sunk cost investment for these operators.

3.110 In response, the Director reiterates his consideration that access to all switches is essential to achieve a viable geographically spread service, as appears to be supported by BT's second sentence in the preceding paragraph. The Director continues to consider that the additional required network build of OLOs to replicate BT's geographical footprint for broadband conveyance is prohibitively significant. This is for two reasons. The first is that given that upon build-out operators will only be able to take ATM traffic and not share the incurred sunk costs with voice and other traffic. The second is that given the density of traffic argument set out above, it will not be economically viable for operators to interconnect at all switches. Energis, in its response indicated that it will not be interconnecting with more ATM nodes in the broadband conveyance market given the current virtual path pricing structure (and pricing methodology).

3.111 In its response to the first consultation, Energis argues that for the time scale of this review it is extremely unlikely that it will interconnect at significant numbers of BT's ATM nodes to take ATM Direction's Service A, ie the "handover" service. It argues that it only currently has a few connection points with BT's broadband network and that it purchases regional and national Virtual Paths (VPs). Energis believes that other operators are in a similar position.

3.112 Energis argues that BT's current interconnection prices of conveyance services (VP prices) do not incentivise build-out to minimise the number of national and regional VPs that it needs to purchase. Indeed, even where it possesses an existing point of presence, infrastructure cannot be shared and further costs are incurred. This mitigates against interconnecting with the ATM network even at these points given the current VP pricing gradient. The uncertainty related to the issues regarding self build, as described above supports a finding of SMP.

3.113 Energis agrees with the Director's SMP assessment and argues that he should ensure that his treatment of the wholesale broadband conveyance market power is consistent with his treatment of the other core network services networks such as trunk segments (typically used for leased lines). Especially with his view that trunk segment market remains not effectively competitive due to the OLOs not intending to expand their current trunk network coverage for the time scale of that review.

3.114 In response, the Director has taken a consistent approach in assessing SMP in the trunk segment and broadband conveyance markets. The Director considers that this has ensured that the SMP findings have been made on a consistent basis.

Economies of scale

3.115 The economies of scale that characterise telecommunications conveyance networks are likely to exacerbate the problem of high entry barriers for a new operator seeking to enter the market for broadband conveyance.

3.116 BT is able to benefit from economies of scale that will not be available to many new operators as they enter the market. These economies of scale relate to high fixed/ sunk costs and the ability to recover these over high volumes which result in lower unit costs for BT's broadband conveyance when compared to a new operator with small traffic volumes. This effect acts to create a further entry barrier into the market for new operators who are likely to have higher unit costs than incumbents as they enter the market.

3.117 Again, BT argues that these conveyance scale economies are equally available to competitors. The Director responds that whilst they are available to the cable companies in cable areas on some scale they are not achievable in the

short to medium term for many newer and smaller operators in this market. In addition, for an operator with a ubiquitous UK network, when considering the conveyance market, the benefits from economies of scale will be greater than in the origination market. This is because conveyance is generally across any local boundaries such as the cable areas so BT will be able to benefit from its presence throughout the UK in a way that is not possible for other operators, including cable operators.

3.118 One respondent argues that BT's possession of a significant share of retail customers acts to enable it to achieve significant economies of scale in broadband conveyance via its self-provision. It argues that via its position at the retail level BT has achieved a scale in the wholesale conveyance market that other operators will find difficult to match. The Director disagrees with this respondent's comments. BT Openworld/ BT Broadband is not dominant at the retail level and its market share is susceptible to erosion through the competitive process. Therefore, there is no guarantee of economies of scale through self-provision.

Countervailing buyer power

3.119 Current and potential future customers of BT's wholesale broadband conveyance are unlikely to possess sufficient countervailing buyer power to undermine BT's market power. As set out for wholesale broadband origination, countervailing buyer power is related to the extent to which BT's customers (OLOs) can credibly threaten to take their custom elsewhere. The Director considers that BT's customers are unable to provide such a credible threat within the timeframe of this review because of the issues around rolling out their networks to parent ATM nodes discussed in the barriers to entry and expansion section above. As such they are unlikely to be able to exercise significant countervailing buyer power over the time scale of this market review.

3.120 One respondent argues that BT is in a unique position due to its size and financial strength and stability such that it will be the operator most likely to offer secure large-scale conveyance services.

Easy or privileged access to capital markets/financial resources

3.121 BT is a large and well-established company with a long track record and a relatively diversified business and is perceived to have stable cash flows. It has a good credit rating and investors are likely to view both the company in general and specific projects for which it seeks funding a less risky proposition than many relatively newer entrants. It is therefore likely that BT would face lower borrowing premiums than its competitors. This is potentially an advantage for BT in the wholesale broadband conveyance market given the substantial levels of capital investment that are required to build out broadband conveyance networks on a large scale. BT's and the Director's earlier noted comments also apply here.

Conclusion

3.122 The Director provisionally concludes that BT possesses single firm SMP in the market for wholesale broadband conveyance. This finding is based on: BT's current and growing market share of 55%; its very much higher share of broadband conveyance that is open to competition (ie not in-house sales of BT or the cable companies); the further likelihood for this share to expand in the future; the existence of significant entry barriers; the existence of significant economies of scale; the lack of countervailing buyer power; and BT's superior access to capital markets.

Summary list of SMP designations

3.123 In conclusion, this section sets out the full list of wholesale markets in which the Director has provisionally concluded SMP designations:

- BT possesses single firm SMP in the wholesale market of asymmetric broadband origination in the UK excluding Kingston upon Hull;
- Kingston possesses single firm SMP in the wholesale market of asymmetric broadband origination in Kingston upon Hull;
- BT possesses single firm SMP in the wholesale market of broadband conveyance in the UK.

Forward look

3.124 During the SMP analyses undertaken in this chapter, the Director has considered the likelihood of relevant competitive and technical developments that might affect these provisional SMP designations with respect to: the development of new broadband access technologies; likely future trends in broadband customer take-up; likely future trends in broadband enabling investment; and likely future trends in market shares.

3.125 The Director will, however, keep market conditions under review and considers that, given the available information, he has fully taken into account likely competitive and technical developments within the relevant markets for the next 18-24 month period.

Definition of the dominant provider

3.126 Section 46 of the Act provides that a person to whom an SMP services condition is applied must be a "communications provider" or a "person" who makes associated facilities available and a "person" who the Director has determined to have SMP in a specific market for electronic communications services, networks or associated facilities.

3.127 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 significant market power 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,[9] for example, where a company within that group is not independent in its decision making.

3.128 The Director considers it appropriate to prevent a person to whom an SMP service condition is applied (i.e. the dominant provider) which is part of a group of companies, exploiting the principle of corporate separation. That is to say, the dominant provider should not use another member of its group to carry out activities or to fail to comply with a condition, which would otherwise render the dominant provider in breach of its obligations.

3.129 The Director is of the view that it is appropriate, reasonable and proportionate to define the Dominant Provider in this way. It is right that, in principle, the regulated entity should include all of the economic entities that are under the control of the person who has been deemed to have SMP in the relevant market. However, the Director does not intend to use this definition as a means of increasing the dominant provider's obligations in an inappropriate manner. Rather, the Director will look to see which persons are operating in the relevant market and whether it is necessary to enforce the SMP obligations in relation to that person by virtue of the fact that it is controlled by the Dominant Provider. This definition is intended simply as a mechanism to prevent the Dominant Provider from avoiding its regulatory obligations. Its purpose is not dissimilar to the previous PTO Condition 35.

3.130 Accordingly, the Director considers it appropriate that the obligations detailed in this consultation document and draft notification shall apply to:

- British Telecommunications plc, whose registered company number is 1800000, and any of its 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.

- Kingston Communications (Hull) plc, whose registered company number is 2150618, and any of its 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

as appropriate.

[9] *Viho v Commission* Case C-73/95 P [1996] ECR I-5447

Chapter 4

Regulatory remedies – SMP services conditions

The legal framework for imposing regulatory remedies

4.1 As explained in Chapter 3, the Director proposes that BT has SMP in the markets for wholesale broadband access, i.e. asymmetric broadband origination in the UK (excluding Hull) and broadband conveyance in the UK, excluding the Hull area, and that Kingston has SMP in the market for asymmetric broadband origination in the Hull area. In this chapter, the Director proposes the SMP conditions to be set as the regulatory remedies to deal with BT's and Kingston's SMP.

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

4.3 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, the Director is under an obligation to impose at least one appropriate SMP condition where SMP is confirmed.

4.4 The Act (sections 45-50 and 87-92) sets out what obligations the Director can impose if he 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; and*
- *cost accounting and accounting separation.*

4.5 Recital 27 of the Framework Directive 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 order to provide a full analysis, the Director has, therefore, also considered the option of no *ex- ante* regulation, and whether it would be sufficient to rely on competition law alone, while noting the obligation referred to in paragraph 4.3.

4.6 Section 4 of the Act sets out the Community duties on the Director which flow from Article 8 of the Framework Directive. The Director in considering

whether to propose any conditions has considered all of these requirements. In particular, he has considered the requirement to promote competition in relation to the provision of electronic communications networks and electronic communications services.

4.7 In particular, 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.

It is the Director's view that the proposal contained in this chapter satisfies the relevant requirements specified in the Act and relevant European Directives. This view is explained in detail in the following paragraphs.

Relative efficiency of competition law and complementary ex ante regulation

4.8 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* regulations 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.

Characteristics of telecoms markets in general

4.9 Generally, the case for ex ante regulation in telecoms 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 being 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.

4.10 The European Commission has also stated that ex ante regulation is justified,"[…] where the compliance requirements of an intervention to redress a market failure are extensive (eg the need for detailed accounting for regulatory purposes, assessments of costs, monitoring of terms and conditions […]" (See page 11 of the Commission's Recommendation.) 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.

Aims of the conditions being proposed

4.11 In Chapter 3 and Annex B of this document, the Director explains why he considers currently that BT holds a position of SMP in the wholesale broadband access markets and that Kingston holds a position of SMP in asymmetric broadband origination in the Hull area. 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…"

4.12 As mentioned in paragraph 4.6, in considering his section 4 duties the Director considers that, in view of these findings, ex ante regulation of the wholesale broadband access markets is required in order to promote the development of competition in downstream broadband services. He considers that a failure to regulate BT and Kingston in these markets is likely to result in competition in downstream services (in terms of price, rapidity of rollout, service quality and product differentiation) developing significantly more slowly in the absence of regulatory intervention. Other providers would be unlikely to enter to provide intermediate or retail services as they would require access to be provided by BT and Kingston and, in the absence of regulation, BT and Kingston would have little incentive to do so given their dominance. The consequence of this would be a restriction of competition in those services. Therefore ex-ante regulation is required to ensure that the benefits of competition in terms of price, product differentiation, choice of supplier and quality are available to retail consumers of broadband internet services.

4.13 The Commission has noted, and the Director agrees, that in most cases it is preferable to apply regulation at the wholesale level. This will serve a twofold purpose: it will address SMP problems in the relevant wholesale market and it will in turn feed through to the level of competition in the downstream markets that rely on these wholesale inputs.

4.14 The application of regulation at the wholesale level rather than at the retail level, also fits with the Community requirement that National Regulatory

Authorities (NRAs) take measures which meet the objective of encouraging efficient investment in infrastructure and promoting innovation. The introduction of regulation in wholesale markets will encourage providers to purchase wholesale products and combine them with their own networks and where possible create products in competition with both BT and Kingston. These may be in competition with either intermediate services or retail services.

4.15 It will also help to ensure that the objectives of Sections 4 (7) and (8), of the Communications Act are met, namely that NRAs take measures which encourage the provision of Network Access and service interoperability for the purpose of securing efficiency and sustainable competition and the maximum benefit for the persons who are customers of Communications Providers and of persons who make such facilities available. Regulation at the wholesale level will, as noted above, help to increase the level of competition in the downstream market and this will in turn help to ensure that the benefits in terms of price, choice and quality are optimised for retail consumers of broadband internet services.

4.16 In assessing the level of regulation to be applied in this market, the Director 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 provider cannot use its market power to restrict or distort competition on the relevant market or leverage market power on to adjacent markets .

4.17 The Director has also taken full account of his guidelines, dated 13 September 2002 (the "Access Guidelines"), on the imposition of access obligations under the new EU Directives.These guidelines can be found at www.oftel.gov.uk/publications/ind_guidelines/acce0902.htm .These describe the circumstances in which the Director would consider the imposition of wholesale access obligations to be appropriate, give guidance on the nature of the wholesale products the Director 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.

Remedies considered

4.18 In the First Consultation the Director considered and rejected the option of not imposing any ex-ante regulation. The Director considered what regulation to impose on BT and Kingston in the markets for wholesale broadband access and specifically considered the following possible remedy options separately:

1. a general obligation to provide Network Access on reasonable request;
2. LRIC plus pricing approach for such Network Access;

3. retail minus pricing approach for such Network Access;
4. requirement not to discriminate unduly;
5. requirement to publish a reference offer;
6. requirement to notify terms and conditions;
7. requirement to notify technical information;
8. requirement to provide quality of service information;
9. obligations relating to new Network Access;
10. accounting separation;
11. a direction under the general Network Access obligation to provide ATM interconnection on specific terms and conditions

The Director's preferred option as set out in the previous consultation document was to impose options 1 and 3-11 above in relation to BT in the markets for asymmetric broadband origination in the UK (excluding Hull) and broadband conveyance in the UK and 1, 4-7, and 10 in relation to Kingston in the market for asymmetric broadband origination in the Hull area.

Draft decision

4.19 Therefore the Director's draft decision is that for BT, options 1 and 3-11 and for Kingston, options 1, 4-7 and 10, are the appropriate level of regulation to meet the aims set out above. Each condition within these options is considered below in relation to BT and, where applicable, Kingston. However, overall, for the purposes of section 87(1) of the Communications Act, the Director considers that these options are appropriate. He also considers that they meet the tests set out in Section 47 of the Communications Act. That is,

- They are **objectively justifiable** as they would potentially allow communications providers to compete with BT and Kingston in offering downstream broadband services similar to those currently offered by BT and Kingston eg. IPStream.

- They do not **unduly discriminate** against or between BT and Kingston. The majority of SMP conditions apply appropriately to both operators since both have been deemed to have SMP. Where obligations have been differentially applied, this is where the circumstances of BT and Kingston have differed. The objective reasons provided mean that any discrimination between BT and Kingston is not undue.

- The requirements proposed are **proportionate** in that they are necessary to address BT's and Kingston's market position and facilitate sustainable competition and the maximum benefit for end users. They form a coherent set. None is dispensable without undermining the effectiveness of regulation.

- They are also **transparent** as the proposed requirements are set out clearly on an individual basis in the remainder of this chapter.

Requirement to provide Network Access on reasonable request – SMP condition 1

4.20 Section 87(3) of the Act authorises the setting of the SMP services conditions requiring the dominant provider to provide network access as the Director 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, the Director 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 proposed network access.

4.21 The definition of 'access' and the way in which the Director might assess reasonable demands for 'access' is set out in the Director's document: *Imposing access obligations under the new EU Directives,* September 2002. The Director considers that it is appropriate to impose an access obligation formulated in terms of a provider being obliged to meet all reasonable requests for Network Access within the relevant wholesale market in which it has been found to have SMP on fair and reasonable charges, terms and conditions.

4.22 The Director is of the view that it is appropriate to amend slightly the Network Access condition proposed in this document in order to clarify the nature and extent of this obligation. Accordingly, the condition has been amended to read:

> *"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 the Director may from time to time direct."*

The amendment is intended to make it clearer that the Dominant Provider must comply with the condition by providing Network Access that is the same as that which has been (reasonably) requested by the Third Party. The condition continues to include the power to make a direction about the provision of Network Access and the terms and conditions on which it is provided.

4.23 As the market analysis in the previous chapter has shown there are considerable sunk costs associated with building networks to provide broadband services. It is unlikely to be economically viable to build direct access networks in some areas or backbone networks on sufficient scale to provide a viable

geographically spread service. Therefore, the Director is currently of the view that a requirement on BT to provide access to its network in the markets for wholesale broadband access is appropriate as it facilitates competition in downstream markets by enabling operators to compete without the need to invest in a ubiquitous network.

4.24 Similarly, in the case of Kingston, the Director considers that it is unlikely to be economically viable to build the networks necessary for the provision of wholesale broadband access in the Hull area and therefore he considers that a requirement on Kingston to provide access to asymmetric broadband origination services in the Hull area is necessary to promote competition in downstream markets.

4.25 Under this condition, the Director has the power to make certain directions. It is envisaged that this power will be used to deal with issues relating to specific forms of access or the particular terms and conditions on which access is provided. Paragraphs 4.212-4.235 set out the Director's proposed Direction which he has decided to make under this condition in relation to the provision of ATM interconnection by BT. Finally, this condition requires the dominant provider to comply with any such directions. Any contravention of a direction may therefore result in a contravention of the condition itself and thus subject to enforcement action under sections 94-104 of the Act.

Responses to the consultation

4.26 BT says it is prepared to negotiate reasonable requests in accordance with the Access and Interconnection Directive but is concerned that demand has to be demonstrable and that industry should prioritise its requirements. BT has also set out in its response, scenarios in which it believes it would be reasonable to object to particular proposals and that a fixed period to offer a service would be unreasonable and impractical. Although Kingston has argued that markets in Hull are contestable and that there is no justification for any ex ante regulatory intervention, it has said that if the Director proceeds with this obligation, requests should be judged against the commercial viability of the associated business case.

4.27 The non-SMP operators support this obligation but some of the respondents have questioned the scope of the proposed general Network Access obligation. It has been suggested that the scope is too narrow and that it should also cover intermediate services such as IPStream and BT Central. The SPC Network, on behalf of the "Altnets" says that it assumes that the Director's regulatory obligations will include BT's VideoStream services.

The Director's response

4.28 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. The Director considers the markets defined in the review 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.

4.29 Recital 19 of the AID explains that an obligation to meet all reasonable requests means that requests should *only* be refused on the basis of objective criteria such as technical feasibility, economic viability or the need to maintain network integrity. If matters are not resolved during a commercial negotiation and the Director is presented with a dispute over the 'reasonableness' of a request, he will follow the relevant dispute resolution provisions set out in the new Directives having regard to his Access Guidelines.

4.30 As set out in the previous consultation, the Director has the power to make directions, when necessary, and he would consider in detail whether the provision of such services was reasonable.

4.31 The scope of the proposed general Network Access obligation is defined by reference to the scope of the wholesale broadband access markets identified in Chapter 2; asymmetric broadband origination and broadband conveyance markets. As set out in Chapter 1, this excludes intermediate services such as the bundle of IPStream and BT Central. As explained above, the Director agrees with the Commission that in most cases it is preferable to apply regulation upstream in order to promote competition downstream, in this case in intermediate services, rather than directly regulate the downstream services. This will address two things: SMP problems in the relevant wholesale market; and the level of competition in the downstream markets that rely on these wholesale inputs. This also fits with the Community requirement that NRAs take measures which meet the objective of encouraging efficient investment in infrastructure and promoting innovation. One of the main purposes of the regulation of wholesale broadband access markets, in particular the requirement on BT to provide ATM interconnection, is to promote competition at the intermediate services level. A regulatory regime is proposed whose intention is to encourage operators to purchase wholesale products, combine them with their own networks and, where possible, create products in competition with both BT and Kingston; these may be intermediate services or retail services. Therefore, the Director considers that it would be disproportionate at the present time to regulate intermediate services such as IPStream and BT Central in addition to regulating wholesale broadband access markets. The Director is aware of the argument that even if the regulation of wholesale services is ultimately successful in promoting effective competition downstream, there may nevertheless be distortions of competition in the period until effective competition takes hold. In this case, the Director is not persuaded that such a problem is likely, given his approach to pricing of wholesale products

(see below) and the requirements of competition law. However, the Director will be monitoring developments carefully and will consider further ex-ante remedies if experience indicates that they are necessary.

4.32 In response to the Altnets comments the Director notes that suitable asymmetric broadband origination services could be used to provide retail video services. Accordingly, a reasonable request to provide such services may be within the scope of the general obligation. However, the Director does not consider it necessary to propose explicit remedies at this stage and would consider a specific request on its merits to assess if they were.

The Director's initial conclusion

4.33 The Director has considered all of the Community requirements detailed in Section 4 of the Communications Act. In particular, the proposed condition satisfies the Community requirements, set out in Sections 4 (3), (7) and (8) of the Communications Act . That is, it promotes competition in relation to the provision of electronic communications networks and encourages the provision of Network Access for the purpose of securing efficiency and sustainable competition in the downstream markets for electronic communications networks and services, resulting in the maximum benefit for retail consumers of broadband internet access services.

4.34 With regard to the tests in section 47 of the Communications Act, an obligation to provide Network Access is objectively justifiable in that it will encourage greater access to BT's and Kingston's networks and will therefore foster competition. Furthermore, it does not unduly discriminate between providers. That is, these obligations are imposed on BT and Kingston as the dominant providers in the respective markets and both are subject to such a condition. It is also proportionate in what it is trying to achieve since it is directly targeted at addressing the market power which BT and Kingston hold in these markets and it does not require an SMP provider to provide access where it is not technically feasible or reasonable. The condition also passes the requirement of transparency since it is clear that the condition is designed to achieve access to BT's and Kingston's networks in order to facilitate competition.

4.35 Finally, the condition meets the requirements of section 87(4) of the Act. In particular, it provides that the SMP provider needs only to meet requests that are reasonable, by which it is meant, *inter alia*, that they must be technically and economically viable, and feasible. As set out in paragraph 4.25 of the Access Guidelines, the Director has taken account of the technical and economic viability of installing and using facilities; and the need to ensure effective competition in the long term.

Migration

4.36 Under the SMP access obligation the Director proposes to impose, he has the power to make directions. He envisages that this power will be used to deal

with issues relating to specific forms of access or the particular terms and conditions on which access is provided. This section sets out an issue which it is proposed will be subject to such a direction.

4.37 In the previous consultation document the Director highlighted the fact that there was considerable concern amongst market players about the arrangements and terms for migration of customers between wholesale and intermediate products and between different operators and service providers. The Director was not at that time in a position to reach a final view. Since then, he has considered the issue in much greater depth, partly as a result of responses to the First Consultation and partly in response to a dispute that was referred to him. He will be setting out his draft proposals on the migration issue in the form of a draft direction shortly.

Pricing methodology for access to BT's network – retail minus pricing

4.38 Without some intervention in pricing, dominant providers, particularly where they are vertically integrated may have an incentive to margin squeeze. That is, they may have an incentive to price wholesale services and downstream services in such a way as to prevent others from competing with them at a downstream level.

4.39 In the First Consultation Document the Director proposed to set charges in the markets for wholesale broadband access on a retail minus basis. The Director is still of the view that retail minus is the most appropriate pricing rule for the wholesale products covered by this review. The Director considers that, even though these markets are not effectively competitive at the moment, there is uncertainty as to future market developments, i.e. beyond the period of time considered in the review. In a situation where market power is not entrenched, cost based regulation appears disproportionate and may even deter the development of greater competition.

4.40 The Director believes that, since these are still immature markets, setting cost-based charges would be a risky exercise which may lead to charges that do not provide the correct economic signal to entrants. In immature markets there is a high degree of uncertainty with regards to costs, and issues such as the timing of cost recovery and the appropriate rate of return on the capital employed are more complicated than in established markets. The downsides of setting incorrect charges, particularly if they are set too low, are significant. It would deter investment in broadband access technologies by the existing operators ie. BT and the cable companies who are still rolling out their networks, and it may also act as a disincentive to investment in alternative access technologies. This would, in the long term, affect the development of competition. Accordingly, the Director considers that regulating charges on a LRIC+ basis would be premature and potentially harmful to investment decisions and that, given the specific nature of the markets, retail minus appears to be the most appropriate pricing rule.

4.41 Such a pricing rule does not set the absolute level of the charges, but requires that a margin exist between the wholesale charges and the relevant downstream prices (i.e. the prices of retail and intermediate products) which covers the necessary additional costs of providing the downstream products. This allows other providers to purchase access services and compete effectively against the regulated firms' downstream arm by ensuring that no margin squeeze takes place. Retail minus, hence, should in principle guarantee that no discrimination takes place between independent service providers and the service providers of the operators with market power, while allowing for the regulated firms to set charges according to their commercial judgment.

4.42 In the First Consultation, the Director set out his belief that it was not necessary to include a specific condition to implement his proposed pricing approach in addition to the general Network Access condition which requires charges for Network Access to be fair and reasonable. This is because for a Network Access charge to be fair and reasonable it must not result in a margin squeeze. He does, however, consider that where specific forms of access are required it may be necessary to set more detailed rules to implement the pricing approach and, as explained below, in relation to ATM interconnection such a rule is proposed.

Responses to the consultation

4.43 BT does not believe it should be subject to any pricing rule but, if one is to be imposed, BT agrees that retail minus is preferable in the markets for wholesale broadband access. Kingston believes that the relevant market in Hull is contestable but that if it were to accept that some form of general service obligation should apply, cost-plus pricing would be unwarranted and "retail minus" pricing for wholesale services should be adopted.

4.44 Many of the respondents, however, have asked that the Director reconsider his proposals since they prefer cost-plus pricing over retail minus pricing. In the previous consultation the Director also asked respondents to comment on the issue of using entrants' costs as opposed to BT's costs in considering whether or not a margin squeeze was taking place. Many of the respondents who were in favour of cost plus pricing commented that if the Director were to continue with his proposals to have retail minus pricing, then it should operate any margin squeeze test on the basis of entrants' costs.

4.45 The key points that have been made are that:

a) the Director has overstated the case for competition in the future;
b) Setting a retail minus is as problematic as setting cost-plus pricing;
c) Current margin squeeze test is a heavy regulatory burden;
d) The current proposed option lacks transparency and certainty;

e) Retail minus would result in excessively high charges;
f) The proposed option is not consistent with regulation of other access mechanisms;
g) Using entrants' costs is the most appropriate approach to assess costs; and
h) Suggestions on how to devise a test based on efficient entrants' costs

a) The Director has overstated the case for competition in the future.
4.46 One of the arguments used to justify the Director's proposed approach is that this was a market in which competition could develop. It has been suggested that the Review overstated the prospects for competition and a respondent has requested evidence of the Director's view that competition from alternative technologies is credible. It has also been suggested that BT's increasing market share at the retail level reduces the available market for backhaul operators. C&W also suggested that trying to ensure that competition from alternative technologies develops is contrary to Oftel's technology neutral position. Ericsson has said that any regulation should not distort competition between different technologies. If ATM is the only relevant interconnect offered then it could discriminate against deployment of other innovative technologies.

The Director's response
4.47 The Director's views on the prospect for competition in the markets for broadband access and conveyance are, by their very nature, speculative so 'hard evidence' about this is difficult to provide. However, the Director considers that the fact that both BT and the cable operators are still rolling out their networks and that alternative forms of access are also being introduced shows that these are fast changing markets, where market power is not entrenched as in some narrowband markets (see Chapter 3). In addition, the high rate of growth (60% between December 2002-June 2003 (1)) of the retail market for asymmetric broadband services and the still low level of take-up, in absolute terms, are a further sign that these markets will continue growing at fast pace in the near future. Given that there is the possibility that competition could develop, it is necessary to avoid imposing regulation which might risk deterring this

4.48 In immature markets such as wholesale broadband access markets, there is a significant risk of regulatory failure i.e. setting an inefficient cost-based change. This is due to the complexity of the task of setting cost-based charges. There are 3 key analytical difficulties to be addressed in setting cost plus charges. These are:

- determining the risk-adjusted cost of capital;
- how quickly the costs of large up front investments (eg DSLAMs and backhaul) should be recovered; and
- the contribution to common cost recovery that should be made by broadband internet access.

4.49 While it is possible to derive answers to all three, this would only be possible with a relatively high risk of error, so that cost plus charges might be set too high or too low. If the charge were to be set too low, for example, there is a risk it will discourage investment by current incumbents such as BT and the cable companies in product development and upgrades to incorporate the latest technical advances as well as rollout more generally; and potential entrants, such as operators using LLU or alternative technologies such as fixed wireless, powerline, 3G or satellite.

4.50 The second outcome would have an adverse effect on the development of competition in wholesale broadband access. The Director does not know precisely the extent of future competition but the key issue is to avoid, through regulation, the elimination of that competition.

4.51 By contrast, if the charge is set too high there is a risk it will discourage take up of the service and, therefore, investment in downstream services by competing providers. It would also be likely to raise the overall level of broadband internet access prices at the retail level.

4.52 In these circumstances, the Director prefers to rely on a methodology that protects downstream competitors, while leaving the regulated firms to set the charges according to their commercial judgement.

4.53 In addition, the Director does not agree that a policy that tries to ensure the development of infrastructure competition contradicts Oftel's technology neutral stance. He believes that it is more likely to indicate the opposite as it guarantees that the correct price signal is given to all those who enter the markets for wholesale broadband access.

b) Setting retail minus is as problematic as setting cost-plus pricing

4.54 France Telecom says that the problems in setting cost plus prices are not necessarily greater than the problems of setting retail minus pricing. It also says that LRIC plus prices can be set so as to take account of the problem of margin squeeze.

The Director's response

4.55 The Director is fully aware of the difficulties involved in implementing either type of pricing policy. He believes that while both involve complex analysis, setting cost based charges involve a greater risk of regulatory failure. This is principally because under a retail minus approach the starting point for the analysis is a commercially set charge which is not the case with a cost based approach. The Director does not believe that the introduction of cost plus pricing would, of itself, address the potential for an incumbent to margin squeeze since it does not control the margin with the relevant downstream charge.

c) Current margin squeeze test is a heavy regulatory burden

4.56 Energis has said that the current margin squeeze test is a heavy regulatory burden and that LRIC+ would be less resource intensive since it is a one-off exercise that only needs to be undertaken every four years. A service provider has also raised the issue of lengthy disputes in relation to operating the margin squeeze test. It has been argued that devolving decisions to BT will lead to delays, as BT is unlikely to propose a reasonable minus which clearly avoids a margin squeeze and the matter will have to be referred back to Oftel or Ofcom. The outcome of this is that this will delay the emergence of competition for consumers, while reinforcing BT's first mover advantage in the retail market.

The Director's response

4.57 Having just undertaken a lengthy and detailed margin squeeze investigation in relation to the relative prices for IPStream and DataStream http://www.oftel.gov.uk/publications/comp_bull/cases/closed_cases/cw_607.htm, the Director is fully aware of the burden involved in conducting such a test. Hence, as discussed above, the Director intends to apply the no margin squeeze rule in a different manner. He is proposing to specify the margins between ATM interconnection charges and the prices of IPStream services, so as to try to avoid getting involved in regular lengthy investigations. The Director is aware that he is not proposing to set the margin with respect to all BT's downstream services, however he considers that it would be disproportionate to perform such an exercise and that IPStream is the main group of products the operators compete with. These proposals are set out in more detail at the end of the chapter. The general requirement for the access charges to be fair and reasonable will still apply to all those products for which a margin has not been predetermined. And the Director expects that the methodology employed and the information collected in setting the margin with respect to the IPStream prices will support and simplify any investigation on margin squeeze that may involve another broadband internet access product.

4.58 In any event these difficulties would not be resolved by adopting a cost plus approach. This is because, as explained above, such an approach would not address the margin squeeze and therefore some form of regulation of the margin would still be required.

d) The current proposed option lacks transparency and certainty

4.59 Energis has said that LRIC+ will result in correct price signals in the wholesale access market. Further it has argued that the lack of transparency and general uncertainty (that IPStream prices may be reduced without a parallel change in interconnection prices) represent a barrier to entry. Altnets have requested "a transparent, predictable methodology …to provide regulatory certainty of Altnets and BT."

The Director's response

4.60 The Director recognises the need for transparency and certainty in this market and that the absence of these can represent a barrier to entry. For this

reason the Director is now intending to set the margin between BT's ATM interconnection charges and IPStream prices. The Director considers that this revised approach, which is set out in more detail at the end of this chapter (paragraphs 4.228-4.231) should provide greater certainty and transparency to both the OLOs and BT and that avoids some of the implementation difficulties with the current approach.

e) Retail minus would result in excessively high charges

4.61 Energis has suggested that retail minus pricing will result in prices being kept artificially high. Another respondent has alluded to the potential risk of BT, in the absence of cost plus pricing, charging excessive prices. C&W suggest that the Director should accept that LRIC+ might lead to higher prices in the short run but recognise that it would result in more competition and therefore lower prices in the medium to long term. C&W also suggest that retail minus pricing reduces incentives to reduce retail prices to reflect any efficiencies or cost reductions and therefore that only BT benefits.

The Director's response

4.62 In certain markets in which LRIC plus prices have been set the issue of excessive prices was a key consideration. However, these markets were relatively mature compared with the wholesale broadband access markets. The issue of what constitutes excessive profitability in immature markets such as wholesale broadband access markets is a difficult question to answer with any degree of certainty for the reasons explained above in relation to the difficulties of setting a cost based charge. Respondents have not provided any information to substantiate their views that excessive profitability is a problem in the current circumstances. Given the difficulties in establishing costs and profitability in wholesale broadband access markets and the adverse consequences of setting too low a price, as discussed in paragraphs 4.49-4.50, the Director believes that in the current circumstances the focus of his intervention should be on leverage into downstream markets rather than the potential risk of excessive pricing.

f) The proposed option is not consistent with regulation of other access mechanisms

4.63 Cable & Wireless has argued that DSL is an access mechanism in the same way as PPCs are and therefore should be price controlled in the same way.

The Director's response

4.64 As the Director has clearly set out above, the markets for wholesale broadband origination and conveyance are less mature markets than the one for Partial Private Circuits. There are significant risks of regulatory failure in setting cost plus prices for wholesale broadband access and given the still immature markets associated with asymmetric broadband services this may unduly hinder the development of competition.

g) Using entrants' costs is the most appropriate approach to assess costs;

4.65 Many of the respondents supported using entrants' costs in any margin squeeze test, because a test based on BT's costs and volumes would deter market entry of an efficient new entrant. Relying on an assessment of entrants' costs will prevent BT from gaining an unfair advantage from its legacy monopoly position. It was held that new entrants are disadvantaged in the following ways:

- by not having the volumes which result in economies of scale;
- because their cost of consumer acquisition is higher; and
- due to the absence of economies of scope.

In addition, a respondent has alleged that the Director has provided very little justification for using BT's costs, other than saying that that is what has been done traditionally.

The Director's response

4.66 The Director is continuing to consider these issues in formulating a revised margin squeeze test and will respond to these points in his proposals for such a test.

h) Suggestions on how to devise a test based on efficient entrants' costs

4.67 Energis suggested that the Director could draw up a model of a hypothetical 'typical' efficient new entrant's network through a consultation exercise with industry. Furthermore, it claimed that any such bottom-up model should include a sensitivity analysis conducted using different discount rates, payback periods and rates of return. Thus has argued that any margin squeeze test should be based on volumes realistically achievable by new entrants. The test should also allow a fair rate of return and be applied over a reasonable period of time period (3 years has been suggested). Thus argued that it BT's unit costs could be employed as a proxy for many of the efficient entrant's costs if appropriate adjusted to take account of economies of scale.

The Director's response

4.68 As stated above, the Director is considering these points in devising a new margin squeeze test andwill respond to these points when he sets out his proposals. The Director intends to include the actual figures for the margin and further details on the parameters of the test and on the structure of the bottom-up model in a draft Direction expected to be published for consultation early in the first quarter of 2004.

The Director's initial conclusions on pricing approach

4.69 The Director continues to consider that retail minus is the most appropriate pricing approach. The Director fully recognises that many respondents would prefer that LRIC-plus was used to set the charges in the markets covered by this review. It is clear that respondents think it will provide them with greater

transparency, stability and certainty. There is also the perception that it may, in some cases, lead to lower prices. The Director believes that, given the nature of the market, a correct and reliable assessment of the cost and of the rate of return would be difficult and that there is too high a risk of incorrectly determining a charge so as to be materially damaging to the prospects for competition in the market. He is of the view that the main concern is that, since BT is vertically integrated, it could squeeze the margin between the wholesale products, in whose provision it has market power, and the downstream ones, thus preventing other operators from competing in downstream markets. Hence he believes that retail minus is the most appropriate pricing approach since it is addresses the primary concern about the margins between the relevant products rather than absolute level of charges. In addition, retail minus avoids the risk of adversely affecting investment in wholesale broadband access markets.

4.70 However, the Director recognises the concerns raised by respondents relating to firstly, the certainty and predictability of the test to all players and secondly, whether economies of scale might predetermine the outcome of the competitive process. Accordingly, the Director has taken these into account under his proposals to set the margin between IPStream and Datastream charges. This is set out in more detail later on in this chapter (paragraphs 4.212-4.235). This approach will ensure that the margin between ATM interconnection charges and IPStream prices is not subject to adverse unpredictable changes, thereby fundamentally altering the basis of competition in the Wholesale Broadband Access market. This should provide the market with the certainty necessary to plan future investments.

4.71 The geographic extent of the product markets defined in Chapter 2 were defined as being national in nature with local characteristics. In considering the options for remedies the Director considered whether it would be possible to reflect the nature of local characteristics in his remedies. He does not believe that locally imposed remedies, for example those that were restricted to non-cable areas, would be effective. The main reasons for this are:

- it would create inefficiencies as operators wishing to compete with BT would have to interconnect with both cable and BT;
- evidence shows that operators in this market wish to provide a service on a national basis; accordingly a national remedy is the only way of addressing BT's market power; and
- if BT is not required to provide ATM interconnection in cable areas then this may result in business customers within these areas being unable to access a competitive broadband internet access market as much of the cable companies' networks by-pass business locations.

4.72 The decision to adopt a retail minus approach meets the requirements of Section 88 of the Act. From the market analysis it appears to the Director that

there is a relevant risk of adverse effects arising from pricing distortions. In particular, the market analysis has shown that BT or Kingston might be in a position to impose a price squeeze so as to have adverse effects for end users by reducing the choice available to them downstream. In the light of this analysis, the Director is of the view that such an approach is appropriate. In particular, such an approach ensures little risk of any adverse effects on the market arising from price distortion. The pricing approach is also appropriate for the purposes of promoting efficiency, sustainable competition and conferring the greatest possible benefits on the end users of public electronic communications services. The Director has also taken into account the extent of the investment required to meet this condition and has concluded that it does not impose an undue burden on BT. The pricing approach addresses the risk that BT will impose a price squeeze which might have adverse consequences for end-users of public electronic communications services.

Requirement not to discriminate unduly – SMP condition A2

4.73 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.

4.74 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.

4.75 Where dominant providers are vertically integrated, like BT and 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.

4.76 In the absence of a non discrimination condition, the Director 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.

4.77 It could be argued that the Competition Act might provide adequate provision to address allegations or evidence of discriminatory behaviour. However, the Director 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 the Director to place a greater emphasis on promoting competition (for example by restricting the ability of an SMP operator to target segments of the retail market).

4.78 The Director 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 broadband access markets.

4.79 A prohibition of discrimination might have disadvantages if it prevented discrimination that was economically efficient or justified. However, the proposed condition provides that there should be no *undue* discrimination. Oftel has considered how it might treat undue discrimination in its Access Guidelines. 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 statement also notes that in the Director's view, there is a rebuttable presumption that a vertically integrated SMP operator discriminating in favour of its own retail activities or between others of its own activities would have a material adverse effect on competition. This view would also apply to discrimination in relation to the underlying components of services. Proposals for setting margins between ATM and IPStream will also limit this problem and should help in assessing any allegation of non-discrimination.

Responses to previous consultation – no undue discrimination

4.80 In their responses, a number of operators suggested that the Director should remove the word "undue" from this condition. Those operators took some comfort, however, that Oftel had stated in its Access Guidelines and elsewhere that there is a rebuttable presumption that a vertically integrated SMP operator discriminating in favour of its own downstream business would have a material adverse effect on competition, and that such discrimination would be deemed undue unless the SMP operator proved the case otherwise. Non dominant operators asked the Director to include this interpretation in the condition which prohibits undue discrimination.

4.81 BT does not believe the case for dominance has been proved and so in principle does not accept this obligation. However, BT also says that there is no *per se* rule against discrimination and agrees with the concept of 'objective justification' referred to by the Director in the previous consultation document. BT comments, however, that the Director has taken quite a narrow view as to the grounds of permissible discrimination and that although cost differences are cited as an acceptable justification the Director has not explained the notion of costs in sufficient detail. In principle, assuming obligations are to be made, Kingston says it supports an undue discrimination obligation although the interpretation of what constitutes 'due' is key.

4.82 The response of non-SMP operators was generally supportive of a condition preventing BT and Kingston from discriminating. There was some concern amongst respondents that the burden of proof in showing that discrimination was 'undue' was too high and similar to that required by ex post regulation. Many respondents therefore supported the idea that there should be a rebuttable presumption that any discrimination by a vertically integrated SMP operator in favour of its own retail activities would have a material effect on competition. C&W suggested that structural separation would address the potential for discrimination. A respondent also argued that LRIC plus pricing would remove the potential for discrimination.

The Director's response

4.83 The Director agrees with BT that there will be occasions where differences in treatment between undertakings can be objectively justified in the basis of, for example, differences in underlying costs of supplying different undertakings. The Director does not believe, however, that he should set out in advance what type of costs might be considered acceptable in determining whether or not discrimination was 'objectively justifiable'. The Director also accepts that in many instances there will be a rebuttable presumption that a vertically integrated SMP operator that discriminates in favour of its own retail activities will have a material effect on competition. As such the Director will consider any allegations of discrimination on a case by case basis on its own merits.

4.84 While the Director understands the concerns of BT's competitors, and recognises that effective control of anti competitive discrimination is an essential part of the ex ante regulatory framework, the Director does not believe it is appropriate or necessary to amend the condition to make reference to this interpretation. The Act, in transposing the requirements of Article 10 of the Access Directive, provides for the Director to impose conditions which, amongst others, prohibit "undue" discrimination. Oftel's Access Guidelines make plain the Director's interpretation of this concept, and this view is supported by the Access Directive which states that obligations of non discrimination:

"*shall ensure that ..... the operator applies equivalent conditions in equivalent circumstances to other undertakings providing equivalent services, and provides services and information to others under the same conditions and of the same quality as it provides for its own services, or those of its subsidiaries or partners*".

The Directors initial conclusions

4.85 In conclusion, therefore the Director's current view is that, having considered the responses made to the previous consultation, a requirement not to unduly discriminate should be imposed on BT and Kingston in relation to each of the proposed relevant markets in which they have been found to have SMP. The proposed conditions, EA.2 and EB.2 for BT and Kingston, respectively, at Annex E meet the tests set out in the Act.

Communications Act tests

4.86 The Director has considered all the Community requirements set out in section 4. In particular, because it requires BT and Kingston to provide the necessary access products, the proposed condition encourages the provision of network access and service interoperability for the purpose of efficiency and sustainable competition in the downstream markets. As BT and Kingston both have market power in the provision of wholesale asymmetric broadband origination, it controls a key input into a range of downstream services – principally asymmetric broadband internet access. In requiring this condition, the Director is promoting competition and the interests of consumers and maximising choice in the markets for those downstream services.

4.87 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The Director considers that this proposed condition is objectively justifiable, in that it provides safeguards to ensure that competitors, and hence consumers, are not disadvantaged by BT and Kingston discriminating in favour of their own retail activities or between their own different activities. It does not unduly discriminate, as it is imposed on BT and Kingston and no other operator has SMP in these markets. 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 and Kingston do not unduly discriminate. In addition, Oftel has given guidance as to how it might treat undue discrimination in its Access Guidelines.

4.88 Further the Director considers that imposition of this condition satisfies the conditions set out in Section 87 of the Communications Act. In particular, that it is fair and reasonable to impose this condition in the interests of effective competition, as it will ensure that other operators are able to make effective use of wholesale inputs and offer products based on these wholesale inputs in

competition with BT and Kingston. In addition it will address the goal of ensuring that services based on wholesale broadband access are provided throughout the UK .

Transparency

4.89 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 the Director may direct, all such information for the purpose of securing transparency. Section 87(6)(c) of the Act authorises the setting of SMP services conditions requiring the dominant provider to publish, in such manner as the Director may direct, the terms and conditions on which it is willing to enter into an access contract. Section 87(6)(d) of the Act also permits the setting of conditions requiring the dominant provider to include specified terms and conditions into the reference offer. Finally, section 87(e) of the Act permits the setting of SMP conditions requiring the dominant provider to make such modifications to the reference offer as may be directed from time to time. This section considers the following transparency requirements:

- requirement to publish a reference offer;
- requirement to notify charges;
- requirement to notify technical information; and
- transparency as to quality of service.

Requirement to publish a reference offer – SMP condition 3

4.90 The Director believes that it is appropriate to impose a requirement on BT and Kingston to publish a reference offer (RO). Such an obligation has two main purposes: to assist transparency for the monitoring of potential anti-competitive behaviour and to give visibility to the terms and conditions on which other providers will purchase wholesale access services. This helps to ensure stability in markets as without it, incentives to invest might be undermined and market entry less likely. The proposed condition at Annex E requires BT and Kingston to publish a Reference Offer, and specifies the information to be included in that Reference offer and how that Reference Offer should be published. It prohibits BT and Kingston from departing from the charges, terms and conditions in the Reference Offer and requires BT and Kingston to comply with any directions the Director may make from time to time under the condition.

4.91 The published RO must include, amongst other things:

- 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 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 agreements and guarantees). 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.

4.92 The publishing of a RO will allow for speedier negotiations and might avoid possible disputes. Together with the non-discrimination requirement it would give confidence to those purchasing wholesale services that they are being provided on non-discriminatory terms.

4.93 The requirement to publish a RO meets the Community requirements set out in Section 4 of the Communications Act. In particular, it meets the requirements of section 4(3) of the Act in that it promotes competition; and sections 4 (7) and (8) in that it encourages the provision of Network Access and service interoperability for the purpose of securing efficiency and sustainable competition and the maximum benefit for customers of Communications Providers. This is because it allows other Communications Providers to have the necessary information to allow them to make informed decisions about entry into the market.

4.94 The Director considers that the proposed condition satisfies the tests set out in section 47 (2) of the Communications 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 unduly between different operators since it applies to both BT and Kingston, who, the Director proposes, both have SMP. It is proportionate in that only information that is necessary to ensure that that there is no material adverse effect on competition is required to be provided. The condition meets the test of transparency set out in the Communications Act since it is clear that the condition is designed to ensure that potential competitors have sufficient information to make investment decisions about entry into this market.

Responses to the consultation

4.95 BT favours publishing the details of a widely available service but does not support the imposition of ex ante regulation to this end. BT also says that there may be circumstances where a service provider might seek a contract which varies from the basic published information and asks whether suitable reporting arrangements could be put in place in order to facilitate all this. Kingston accepts the need to publish some form of service description and associated terms and conditions but believes that those currently provided at the retail level should suffice.

4.96 Non-SMP respondents welcome the transparency a RO would provide and the majority have agreed with the Director's suggestions for what an RO might include. MCI has also suggested that it might include delivery times for DSL circuits, availability guarantees, mandatory repair times, together with penalties for late delivery or repair. C&W has suggested that BT should publish its own internal RO so that operators can identify whether BT is charging itself on a different basis from the way in which it charges other operators. Energis too has suggested that third parties should have access to the RO provided by BT Wholesale to BT Retail. It has also been suggested that there should be a consolidated single contract on a similar basis to the Standard Interconnect Agreement because there will be many terms and conditions that should be the same irrespective of the product being provided, such as credit vetting, billing, dispute procedures and termination.

4.97 Communications providers suggest in their combined response that BT should be required to publish the equivalent of a reference offer for services provided to itself. They point out that this will provide transparency and allow the Director to determine whether BT is discriminating in favour of its own downstream businesses.

4.98 BT also states that it is inappropriate for internal transfer charges to be published as part of the reference offer. The Director considers that this is necessary to ensure that BT's competitors have visibility of the prices BT Retail is paying for the services it receives on an ongoing basis, in order to ensure that the condition preventing undue discrimination is being adhered to. Retrospective publication in BT's statement of regulatory accounts would be insufficient in this context. 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 accounts.

4.99 Finally, BT states that conditions EA3.2 (h) and (j) appear to be PSTN related conditions which it does not consider applicable to wholesale broadband access.

The Director's response

4.100 The Director recognises that it is in BT and Kingston's interests to ensure that its customers have sufficient information to make full and effective use of its service. However, he also believes that industry needs the certainty that an ex ante regulation requiring the publication of a reference offer will support.

4.101 In relation to BT's assertion that certain conditions proposed for inclusion in the reference offer are PSTN related and do not apply to wholesale broadband access, the Director agrees that details of traffic and network management, measures to ensure compliance with requirements for network integrity, and the relevant network tariff gradient are not relevant for this review and they have been removed from the proposed condition.

4.102 While, the Director notes that the proposed conditions do already require BT to publish a reference offer in relation to the network access that it provides to itself, where the manner of provision differs from that detailed in its reference offer for other communications providers, he has added the additional wording in EA3.3 and EB3.3 (for Kingston) to make this obligation clearer. The Director would expect the former to contain, amongst other things, full details of the service provided, together with details of network components and usage factors, in equivalent language to that used in its reference offer to other communications providers, in order that proper comparisons can be made.

4.103 In addition, the Director has put in place several performance measures and reports in this market which, amongst other things, will provide information on BT's standards of service in delivery of wholesale broadband access to communications providers and equivalent access to its retail arm. The Director considers that these will be of additional benefit to communications providers in establishing whether any discrimination is taking place. In addition, the Director will of course give appropriate consideration to any allegations of anti-competitive behaviour in this area.

The Director's initial conclusions

4.104 In conclusion, therefore, the Director's current view is that, having considered the responses made to the previous consultation, Conditions EA3 and EB3, requiring publication of a RO should be imposed on BT and Kingston in relation to each of the proposed relevant markets in which they have been found to have SMP, in the form set out in Annex E.

4.105 The Director has considered all the European Community requirements set out in Section 4. In particular, the proposed 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. It promotes the interests of purchasers of wholesale asymmetric 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. Finally, it will allow the Director to monitor discrimination, more easily, so ensuring competition in the downstream markets.

4.106 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The proposed condition is objectively justifiable in that it requires that terms and condition are published in order to encourage competition and provide stability in markets. 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.

4.107 The Director considers that imposing this obligation satisfies the conditions set out in section 87 of the Act. In particular, the Director 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

Requirement to notify charges, terms and conditions – SMP condition 4

4.108 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 the Director may direct, all such information for the purpose of securing transparency. Section 87 (6)(c) of the Act authorises the setting of SMP services conditions requiring the dominant provider to publish, in such manner as the Director may direct, the terms and conditions on which it is willing to enter into an access contract (e.g by the publication of a reference offer).

4.109 BT and Kingston are 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 obligation would create a requirement for advance notification of changes to prices, terms and conditions of wholesale asymmetric broadband origination services.

4.110 Both BT and Kingston have 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.

4.111 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 wholesale broadband access market. However, given that the Director's primary aim is to address the consequences for downstream markets of BT's market power in this market, he does not believe that this consideration will undermine imposition of this obligation.

4.112 The Director therefore considers that BT should be obliged to provide advance notice of changes to the prices terms and conditions of its wholesale asymmetric broadband origination services, which are an essential input for products in the downstream markets.

4.113 As noted above, the Director 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 consultation

4.114 BT states that it voluntarily includes a notice period within its broadband contracts and that irrespective of whether or not it is designated as having SMP an ex ante obligation is unnecessary. Kingston accept there is a need to notify changes, but see no material advantage on applying a 28 day rule, although they do not specify what a more appropriate time period might be.

4.115 The Altnets agree with the proposed obligation but say that there should be an explicit reference to a similar obligation regarding the terms and conditions under which BT Wholesale provides products to BT's retail businesses. C&W say that a price publication obligation allows operators to make a more informed judgement about BT's pricing behaviour and that it will have a deterrent effect on BT since anti-competitive pricing behaviour will be easier to detect. C&W also say that this obligation must be supported by a non-discrimination obligation. MCI is concerned that price publication obligations will be removed at the retail level. NIACT is concerned that the 28- day period suggested by the Director is too short and that it could be used by a SMP operator to hinder other providers.

The Director's response

4.116 The Director recognises that BT may voluntarily provide advance notification irrespective of whether or not an ex ante obligation is imposed. He believes, however, that it is important for industry to have certainty regarding this issue in order to inform its behaviour.

In response to the Altnets concern the Director has added the additional wording in EA4.5 and EB4.5 (for Kingston) to make this obligation clearer. The Director would expect the former to contain, amongst other things, full details of the service provided, together with details of network components and usage factors, in equivalent language to that used in its reference offer to other communications providers, in order that proper comparisons can be made.

The Director's intial conclusions

4.117 Having considered the responses to the consultation the Director's current view is that a requirement to notify terms and conditions, including charges, 28 days in advance should be imposed on BT and Kingston in relation to each of the proposed relevant markets in which they have been found to have SMP.

Communications Act tests

4.118 The Director considers that the proposed 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 operator's prices is needed to enable the Director 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 operator in the market with SMP; the behaviour of other operators is not capable of having a materially adverse effect on competition as these operators do not have market power. The remedy is proportionate, as it is the least burdensome means of achieving the objective, and the requirement is made fully transparent in Annex E.

4.119 The Director has considered all the Community requirements set out in section 4. In particular, the proposed condition encourages compliance with transparency, for the purpose of facilitating service interoperability and securing freedom of choice for the customers of communications providers. It promotes the interests of purchasers of wholesale asymmetric 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 asymmetric broadband origination market by allowing BT's competitors in the provision of asymmetric broadband origination services to make appropriate changes to their products. Finally, it will allow the Director more easily to monitor discrimination, thereby ensuring competition in the downstream markets.

4.120 The Director considers that imposing this obligation satisfies the conditions set out in section 87 of the Act. The Director 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 wholesale broadband access are provided throughout the UK.

Requirement to provide transparency as to the quality of service information – SMP condition 5

4.121 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 the Director may direct, all such information for the purpose of securing transparency. The condition proposed by the Director in Annex E (EA5) requires BT to publish such information in the manner and form required by the Director. This obligation requires BT to publish certain information relating to the quality of the service it delivers in providing services falling within the wholesale broadband access markets. 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 operators including itself, but this level of service falls short of the service generally offered in comparable countries, most notably within the EU.

4.122 The Director is considering these and other potential benefits in detail in his forthcoming consultation document on quality of service in all markets, to be published later this year (see below). The principle of no undue discrimination is intended to ensure that operators 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 operator, with market power in a particular wholesale market, supplies services to other operators with whom they compete in a downstream retail market.

4.123 Section 87(6)(a) of the Communications Act allows the Director 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 E 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.

4.124 It might be argued that a dominant operator should meet this condition by providing wholesale services to other operators 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, the Director considers that the most objectively justifiable and proportionate means of meeting this condition is to require that a dominant operator delivers the same operational performance to other operators 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.

4.125 The Director 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, the Director believes that it would be impossible to monitor whether the different operational processes used by the dominant operator were delivering an equivalent quality of service.

4.126 The Director believes that the need for this ongoing monitoring means 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 the necessary information after the event; operational performance cannot be measured retrospectively in response to an ad hoc information request.

4.127 The Director therefore concludes that this obligation should be imposed. The specific condition set out in Annex E proposed by the Director would require BT to publish data on a specified set of KPIs in relation to Network Access, with a format and frequency to be determined by Oftel (and, going forward, Ofcom). This condition follows Section 87(6)(b)) which allows the Director to impose a condition of transparency whereby the Director can require a dominant provider to publish all such information as directed by him to secure transparency in relation to matters such as non-discrimination.

4.128 It is the Director'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. For this review, as with most other market reviews, the Director set out his proposals for the specific KPIs to be covered by the proposed condition, as well as the publication process and frequency, in a separate Consultation Document issued on 11 July 2003 – see www.oftel.gov.uk/publications/eu_directives/2003/kpis0703.htm. The Director intends to issue draft Directions for consultation later this year.

4.129 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 the Director to make Directions requiring BT to publish specific quality of service information.

Responses to the consultation

4.130 Notwithstanding its belief that there should not be an ex ante obligation to publish such information BT comments that regulatory intervention should only occur where industry discussion has been unsuccessful and that it should be limited to the requirement to show non-discrimination. BT agrees with the Director's belief that it would be impractical to presume that identical processes and systems should be used for services provided to other operators as for those employed for BT's own services.

The Director's initial conclusions

4.131 Having considered the responses to the consultation and the evidence available to him, the Director concludes that this obligation should be imposed on BT. This condition remains in the same terms as the condition previously consulted on and is not limited to the requirement to show non discrimination. He does not consider it should be imposed on Kingston, since it does not currently supply wholesale asymmetric broadband origination services at the moment and therefore there would not be sufficient volumes for the data to be statistically meaningful. He would, however, expect Kingston to consider the issue if and when it engages in commercial negotiations to offer such services. The proposed condition would require BT as the dominant provider to publish data on a specified set of KPIs, with a format and frequency to be directed by the Director. This condition follows Section 84(6)(b) which allows the Director to impose a condition of transparency in relation to matters such as non-discrimination.

4.132 The Director considers that the proposed condition meets the tests set out in the Act. The Director has considered all the Community requirements set out in section 4. In particular, the proposed 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. 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.

4.133 It is the Director's current view that the quality of service condition proposed in this consultation satisfies the relevant requirements specified in section 47 of the Act. In particular, the Director has considered the duty to promote competition. In addition, the Director considers that

- The condition is objectively justifiable because it is the only means of ensuring that a dominant operator provides an equivalent quality of service to other operators as it provides to itself or that its standards are reasonable, taking into account international benchmarks. This is necessary in order to prevent a vertically integrated operator, 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 Director considers that this is not the case in relation to Kingston.
- The condition is proportionate to what it is intended to achieve because the dominant provider will only be required to publish data on a small number of KPIs representative of key business processes, rather than a complete set of KPIs, covering all aspects of operational performance.
- 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.

4.134 In addition, the Director considers that imposition of this condition satisfies the conditions set out in Section 87(4) of the Communications Act. In particular, given the potential for the development of alternative facilities in the current market, the Director 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 wholesale broadband access
4.135 in competition with BT. It will also, amongst other things assist monitoring of BT's compliance with a non discrimination condition.

Requirement to notify technical information – SMP condition 6

4.136 Section 87(6)(c) of the Act authorises the setting of SMP services conditions requiring the dominant provider to publish, in such manner as the Director 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 the Director may direct, all such information for the purpose of securing transparency.

4.137 Under the proposed 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 asymmetric broadband origination services it must publish an amended version 28 days before the amendment comes into effect. However, the proposed 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.

4.138 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.

4.139 The proposals in this Condition are important to ensure that communication 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.

4.140 The Director'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, the Director proposes that in the market for wholesale asymmetric 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, unless the Director consents otherwise.

Responses to the consultation

4.141 Again, as in relation to the previous obligation to publish a reference offer, BT has commented that it is in its own commercial interests to publish the technical interface information relating to it services and that ex ante regulation is unnecessary. BT recognises that 90 days is consistent with BT licence condition 15 on interface notification periods but suggests that this should only apply where the equipment is non-standard and that for equipment that meets international or industry standards 28 days would be sufficient. BT requests that the condition is specifically reworded to reflect this rather than rely on the Director's discretion as proposed in the Condition as currently drafted. Furthermore, BT argues that the

UK has excessive notification periods compared to the rest of Europe and that the UK should be more aligned to other NRAs.

4.142 The Altnets have suggested that a blanket figure of 90 days may not be appropriate in all circumstances and a longer period may be required in some cases. The Altnets recommend that all proposed changes to technical terms are pre-notified for a period of 30 days. If, during this period, no objections are raised, then a formal 90 days notice period can commence. If there are objections then there should be a full consultation and review period through such channels as NICC.

The Director's response

4.143 Although the Director agrees that standardised interfaces are now much more common, even where a standardised interface is used, the Director would consider it unusual for a period of 28 days to be appropriate. This is because even where standardised equipment is available, implementation of a new interface in 28 days is unlikely to be practicable and thus reasonable. For example, even where standardised equipment is available, this would still require procurement, installation and testing. The Director does however retain the option of consenting to shorter notification periods in exceptional circumstances.

4.144 In response to the Altnet's request, the Director notes that the BT Interconnect Contract already provides for longer notification periods for major "System Alterations" and changes such as the closure or modification of a switch and agrees that BT should continue to use longer notification periods for these major changes.

4.145 For other major changes, the Director considers that consultation with industry through the NICC would continue to be the best way for BT to meet its obligations in relation to the provision of Network Access on fair and reasonable terms. Therefore, the Director considers that the onus is on BT to ensure that it provides longer notification and, where appropriate, consults on major changes so that it complies with its Network Access condition as well as the technical notification condition.

4.146 If operators considered that a technical change notified by BT was not consistent with its requirements to provide Network Access on fair and reasonable terms, then they would, as always, have the option of referring a dispute to the Director for resolution, or of making a complaint regarding breach of an SMP condition.

The Director's initial conclusion

4.147 Having considered the consultation responses the Director proposes, therefore, to impose condition EA6 and EB5 on BT and Kingston respectively,

which requires a minimum of 90 days for provision of technical information. This condition remains in the same terms as the condition previously consulted on.

Communications Act tests

4.148 The Director considers that the Condition meets the tests set out in the Act. The Director in proposing the Condition has considered all the Community requirements in section 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.

4.149 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The proposed condition is objectively justifiable in that it enables competing operators to make full and effective use of Network Access. It does not unduly discriminate in that it is imposed on both BT and Kingston and no other operator 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 and Kingston notify technical information as set out above.

4.150 The Director considers that imposing this obligation satisfies the conditions set out in Section 87 of the Communications Act. In particular, the Director 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 wholesale broadband access are provided throughout the UK.

Consultation on interfaces

4.151 Current PTO licence condition 15 includes a requirement to consult on interfaces where so directed by the Director. This was to ensure that BT and Kingston could not impose unnecessary costs on competing operators by specifying a proprietary interface.

4.152 However, the Director recognises that Communications Providers are constrained in their choice of interface by the standardised nature of most communications equipment. In addition, the Director 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 operators and equipment manufacturers increasingly look to other technologies.

4.153 Therefore, the Director 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, the Director does not believe that imposing a condition requiring consultation on interfaces would be proportionate.

Requirement relating to requests for new Network Access – SMP condition 7

4.154 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. The Director's previous consultation invited comments on his proposals for regulation of the statement of requirements ("SOR") process. The Director stated that if regulation of the SOR process were necessary, the following obligations would be worth considering:

a) the publication of reasonable guidelines on requesting a new product;
b) the provision of information for the purpose of making a request for a new product; and
c) a process for dealing with requests for new products.

4.155 The SOR process forms part of BT's obligation to provide Network Access in all markets in which it has SMP. The SOR process and associated timescales are the same in all of these markets. In revising the proposed condition, the Director 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 on 26 August 2003 ("the narrowband statement").

Responses to previous consultation – requests for new network access

Responses supporting the proposals
4.156 Respondents other than BT and Kingston, support the Director's proposal to regulate the SOR process, commenting that clarity is necessary to help identify when there is a dispute and to enable the Director to resolve disputes in four months. Respondents also comment that in order to reduce BT's incentive to delay there should be regulation of the process, which will allow for penalties under the new regime.

4.157 Cable & Wireless states that over the last three years, the major fixed line communications providers have submitted more than 100 SORs, and estimates that out of these less than five have been accepted without Oftel involvement. Both Cable & Wireless and Energis refer to previous negotiations for PPCs as evidence to suggest that BT's current SOR process is not working.

4.158 In addition Cable & Wireless comments that with previous SORs submitted, BT has subsequently replied that the understanding of BT's network is incorrect. This has resulted in the need to amend the SOR and to start the process again from the beginning. Cable & Wireless and Energis also support the proposal for a timeline for the dominant provider to provide requested technical information.

4.159 Cable & Wireless and Fixed Alternative Networks state that in BT's current process there is sufficient latitude to allow BT to be able to introduce delays and to put other obstacles into the process. The following term in BT's current process is referred to "The Parties shall use their reasonable endeavours to ensure that BT shall be in a position to confirm the sufficiency of the statement of requirements (with clarification, if any) within such 30 calendar day period". There is also comment that BT will advise at the latest possible moment within this 30 day target, that an SOR cannot be considered because it is based on an incorrect understanding of the BT network or alternatively that the SOR needs further work.

4.160 Both Cable & Wireless and Energis also state that the same regulated process should apply to different markets, and that trying to manage different processes for different product sets would be likely to make the requirement unworkable. Respondents also comment that a regulated SOR process should apply not just to new requests, but should also include product, pricing and billing modifications. Cable & Wireless states that BT already has a policy of requiring communications providers to conform to BT's existing SOR process in cases where requests are made for minor amendments to terms and conditions or changes to the billing process. Cable & Wireless and Energis also mention that the same process should apply equally to requests from BT Retail. In addition it is suggested that a register of SORs should be kept, and that there should be regular reporting on Key Performance Indicators. Energis states in its response that the Director should make more widespread and consistent use of retrospection. The Director confirms that retrospection is a consideration factor in the resolution of disputes and is applied where the Director considers it appropriate.

4.161 No particular comments were received about SOR dealings with Kingston.

Responses against the proposals

4.162 Both BT and Kingston state that they already have internal SOR processes in place and that specific ex-ante regulation is not appropriate. Kingston confirms that its SOR process had never been used.

4.163 BT does not accept that specific regulation of the SoR process is appropriate and is concerned that any SoR process which is mandated should

not adversely affect the work of existing organisations such as UK industry and international standardisation bodies.

4.164 BT highlights that in September 2002, following feedback from communications providers about the SOR process, BT's internal processes were improved to ensure that responses are provided within agreed timescales. This process is found in the new services section of BT's standard interconnection agreement. BT states that out of 27 SORs received, between April 2002 and March 2003, approximately 92% were responded to within the 60-day timeframe. Of these 25% were accepted, and of the 75% rejected only 10% of these were referred to Oftel as a dispute.

4.165 BT argues that the short timescales proposed are inadequate to allow for proper consideration of new requirements and that the time limits could lead to disputes in situations where a more considered discussion of the new requirement would be more productive.

4.166 BT's view is that the amount of time required does depend on the complexity of the issue and that this is relevant to all the proposed stages. BT expresses concern about reducing maximum timescales, but has put forward suggested average response times.

Responses to the narrowband statement

4.167 As noted at paragraph 4.155 above, the SOR process is the same for all markets. The Director has made further changes to the proposed condition following responses to the narrowband statement, as follows.

Feasibility studies

4.168 In its response to the narrowband statement, the UK Competitive Telecommunications Association (UKCTA) expressed concern that BT may use feasibility studies to delay the process up to the maximum target. It also asked for greater clarity about the circumstances in which BT will require a feasibility study and what is involved in such a study. In addition, UKCTA commented that as a general rule BT has not made available its feasibility studies to operators that have submitted SORs.

4.169 The Director considers that there is a cost implication for BT to conduct a feasibility study. In addition, BT can only carry out a feasibility study where one is reasonably required and will have to give objective reasons why it is needed. The Director proposed that BT should be required, in the event of a refusal, to provide the requesting operator with a non-confidential version of the feasibility study and to provide Oftel with a copy of the feasibility study (Condition EA7.8 (b)) BT has commented that it would prefer this requirement to apply only where the refusal becomes the subject of a dispute.

4.170 The objectives of introducing regulation into the SOR process include the need to increase transparency and ensure that requests for access are not subject to unnecessary delay. The Director considers that in the event that BT has taken the extra time needed to complete a feasibility study and then has refused the request, it is reasonable for BT to provide a copy of the feasibility study to the requesting party. This should aid the requesting party to formulate any necessary dispute submission. The proposal that BT should be required to provide the feasibility study to Oftel would allow Oftel to monitor the reasons for refusal. This may be particularly important when much of the information in the feasibility study is withheld from the requesting parties on the grounds of confidentiality.

4.171 The Director considers that the completed version of the feasibility study should include the following:

- a breakdown of BT's estimated development, operational and other costs associated with the provision of the requested service;
- a description of the technical characteristics of the requested service including different technical options for meeting the request and the cost implications of these options; and
- a full description of the billing arrangement of the requested service.

The Director would also expect BT to include other relevant information on the scope of feasibility studies in its published guidelines.

4.172 UKCTA suggested that BT should inform the requesting party that it will be conducting a feasibility study at the 15 working day deadline, rather than at the 35 working day deadline, so that the requesting party is aware at an early stage how long the overall process is likely to take.

4.173 The Director considers that, generally, BT will have to decide whether to conduct a feasibility study earlier than 35 working days, in order to allow time to complete the feasibility study and other requirements within the overall target of 60 working days. Therefore, the Director does consider it appropriate to reduce the proposed target for BT to notify that it will be conducting a feasibility study, to 15 working days. However, there may be limited circumstances where BT, due to a genuine error of fact, decides at a later point in time that a feasibility study is required. In such limited circumstances, BT will have until 35 working days from date of receipt of request to notify the requesting party that a feasibility study is reasonably required and give objective reasons why this is the case. Accordingly, the Director has amended draft Condition EA7. In such circumstances, BT must carry out the feasibility study within 45 days of informing the requesting communications provider of the need to do so. This may be extended up to 70 working days, if circumstances have arisen which prevent BT from completing the feasibility study, or if BT and the communications provider agree to such an

extension, as set out in Condition EA7.10. Further, the period can be extended past 70 working days with the agreement of the Director or the requesting party.

Transparency, KPIs, and register of SORs

4.174 UKCTA expressed its view that discrimination is a key issue affecting markets in which alternative operators compete, and that lack of transparency means that alternative operators have no visibility as to whether BT's retail activities get preferential treatment in the SOR process over other communications providers. It added that applying the requirement to publish KPIs on the SOR process will give Oftel and alternative operators the transparency to determine whether any discrimination is taking place and will also act as a discipline on BT to avoid discrimination. UKCTA also recommended that BT be required to keep a register of SORs to enable it to track where each one is in the process. UKCTA would, however, expect this to be confidential to BT and Oftel only.

4.175 The Director agrees that visibility of BT's performance in handling requests from other communications providers and BT's retail activities would benefit all parties, including BT. Transparency is likely to lead to greater co-operation between BT and other communications providers and reduce the need for regular regulatory intervention. BT has indicated to the Director a willingness to publish KPIs on a voluntary basis. Should this fail to lead to a satisfactory outcome, the Director will consider extending regulation to cover KPIs on the SOR process. The Director expects BT to set out in its guidelines what information it will publish.

The Director's response

4.176 The Director's revised (following the first consultation) draft condition is set out at Annex E and is further described below. The Director has taken into account comments received and has reviewed disputes referred to him since April 2002. The Director considers that there is evidence in the markets in this review that BT's current SOR process is not working sufficiently well and that there is a need to improve BT's response to requests for Network Access. There is evidence from disputes referred to the Director since April 2002 of instances where the introduction of new products and services has been delayed by the unavailability of feasibility studies and other information which the Director would normally expect to be collected during the SOR process. These disputes include, 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.

4.177 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, the Director considers that *ex ante* regulation of BT's SOR process is appropriate.

4.178 The Director considers that the process should apply to modifications of existing Network Access as well as to completely new forms of Network Access. He would not, however, expect the process to apply to requests for standard Network Access products offered by BT but where the requesting electronic communications provider does not already have the product. He also notes that requests for modifications of existing Network Access are likely to be less complex and should be able to be dealt with relatively quickly.

4.179 The regulated process set out is designed to accompany the obligation for BT to meet all reasonable requests for access in specific markets. The Director 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, the Director 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.

Revisions to the proposed condition

Publication of reasonable guidelines on requesting a new product

4.180 Condition EA7.1 would oblige BT to publish the required content and form of a request for new Network Access. In view of comments received, the Director considers that it is appropriate to require BT to produce reasonable guidelines on requesting new Network Access. The Director believes that such guidelines will contribute to an efficient process by ensuring that BT receives accurate product descriptions in the necessary detail and give requesting communications providers confidence that requests are handled in a fair and consistent manner. The Director considers that BT should consult with the Director and relevant third parties before finalising the initial version of these guidelines to ensure that the guidelines meet the reasonable needs of stakeholders. The Director would expect BT to make the proposed guidelines publicly available and to engage with stakeholders as appropriate to enable them to contribute to the development of the final guidelines. The Director also considers that BT should finalise the initial

guidelines within two months of the date the condition enters into force. In addition, BT would be obliged to keep these guidelines under review and consult with relevant third parties and the Director before making any amendments.

Provision of information for the purpose of making a request for a new product

4.181 The Director proposes that BT, on receipt of a reasonable request, should be required to supply sufficient technical and network information to enable third parties to construct proposed product specifications that are efficient and meet their reasonable requirements (Condition EA7.3). The Director would require that the information should be supplied within a "reasonable timescale". If a dispute were to arise about timescales, the Director would consider what is reasonable on a case-by-case basis, taking into account the complexity of the information request.

4.182 The Director considers that BT should not refuse access to any such information on the basis of confidentiality, although BT may require a nondisclosure agreement. BT has argued that it may be constrained in its ability to supply information to requesting operators due to confidentiality agreements with its suppliers. While the Director appreciates that there may be certain circumstances where BT finds itself constrained, communications providers will obviously be concerned that by signing confidentiality agreements with suppliers, BT can effectively deny access to its network. The Director considers that in signing confidentiality agreements BT must consider its obligations to meet all reasonable requests for access and to provide information to requesting operators. If necessary, BT should review confidentiality agreements with its suppliers.

4.183 Section 87(4)(e) of the Communications Act requires the Director to take account of, inter alia, any relevant intellectual property ("IP") rights in considering whether it is proportionate to mandate or attach conditions to an access obligation.

4.184 The Director recognises that IP rights will protect some types of information, but where that information is essential to allow BT's competitors to request and make use of reasonable access products, the Director would expect BT to explore whether such information could be made available and protected with nondisclosure agreements.

4.185 As set out in the *Access Guidelines*, in the event of a dispute about the provision of information, the Director will identify IP rights on a case-by-case basis. The Director notes, however, that:

- the information must be secret, identified (recorded) and substantial; and
- IP includes patents, know-how, and software copyright.

Process for dealing with requests for new products

4.186 Amendments have been made to the proposed condition in respect of the process for dealing with requests for new products. The following is a summary of the proposed process:

• BT must acknowledge receipt of the request within five working days (Condition EA7.5).

• BT must give a first written response to the request at the latest within 15 working days of its receipt. At this stage, it is envisaged that the response will not be an initial offer of terms and conditions, although nothing would preclude such a response at this stage. If the request is not adequately formulated, the Director would expect BT and communications providers to be able to discuss constructively how a request should be formulated, and this should be covered in BT's guidelines. If the request is refused on the basis of specified objective criteria or the need to maintain network integrity, BT shall detail its reasons for refusal. If the request is sufficiently well formulated BT shall state either that the initial offer of terms and conditions will be prepared, or that a feasibility study will be required (and objective reasons why a feasibility study is required). BT should also at this stage confirm preparation of a timetable for the agreement of technical issues (Condition EA7.6).

• Rejection – BT may reject a request on the grounds that it is not reasonable, is not technically feasible, requires BT to provide something which is not within its power to provide, or would compromise the integrity of BT's network. Oftel has set out, in the Access Guidelines (at paragraph 2.28) the procedure it intends to use to resolve disputes about what is a 'reasonable request' for Network Access.
Oftel considers that a request is unreasonable if it imposes an undue burden on BT, ie BT would be unable to recover its costs of providing the requested access.

• Where no feasibility study – At the latest, 35 working days after receipt of the request, BT must provide an initial offer of terms and conditions and timetable for new Network Access and the resolution of technical issues (Condition EA7.7).

• Where, BT has said that no feasibility study is required but, due to a genuine error of fact, BT decides after 15 days that a feasibility study is reasonably required, it may inform the requesting party within 35 working days that a feasibility study is required (Condition EA7.8) and give objective reasons why the study is required. The Director expects that this condition will apply in limited circumstances only, and generally BT will be required to decide whether a feasibility study is required within 15 working days.

• Where feasibility study is undertaken – At the end of 60 working days, BT must be able to respond fully to the majority of requests for new Network Access (Condition EA7.12)The condition allows provision for this time to be extended to 85 working days, where, despite using its best endeavours, BT is unable to complete the feasibility study within 60 working days or when BT and the requesting operator agree that more time is needed. The Director does however acknowledge that in certain circumstances, BT might reasonably require even more time to respond fully to a request. Such circumstances might include multiple or conflicting requests from different providers, extremely complex requests covering a number of different technologies areas or requests requiring wider industry consultation. The condition therefore includes provision for the overall deadline to be extended to over 85 working days, with the agreement of the requesting party, or with the Director (Condition EA7.14). Where BT wishes to extend the 60 day deadline to 85 working days (Condition EA7.13), it is for BT to show that circumstances exist which prevent it from responding to the request within 60 working days.

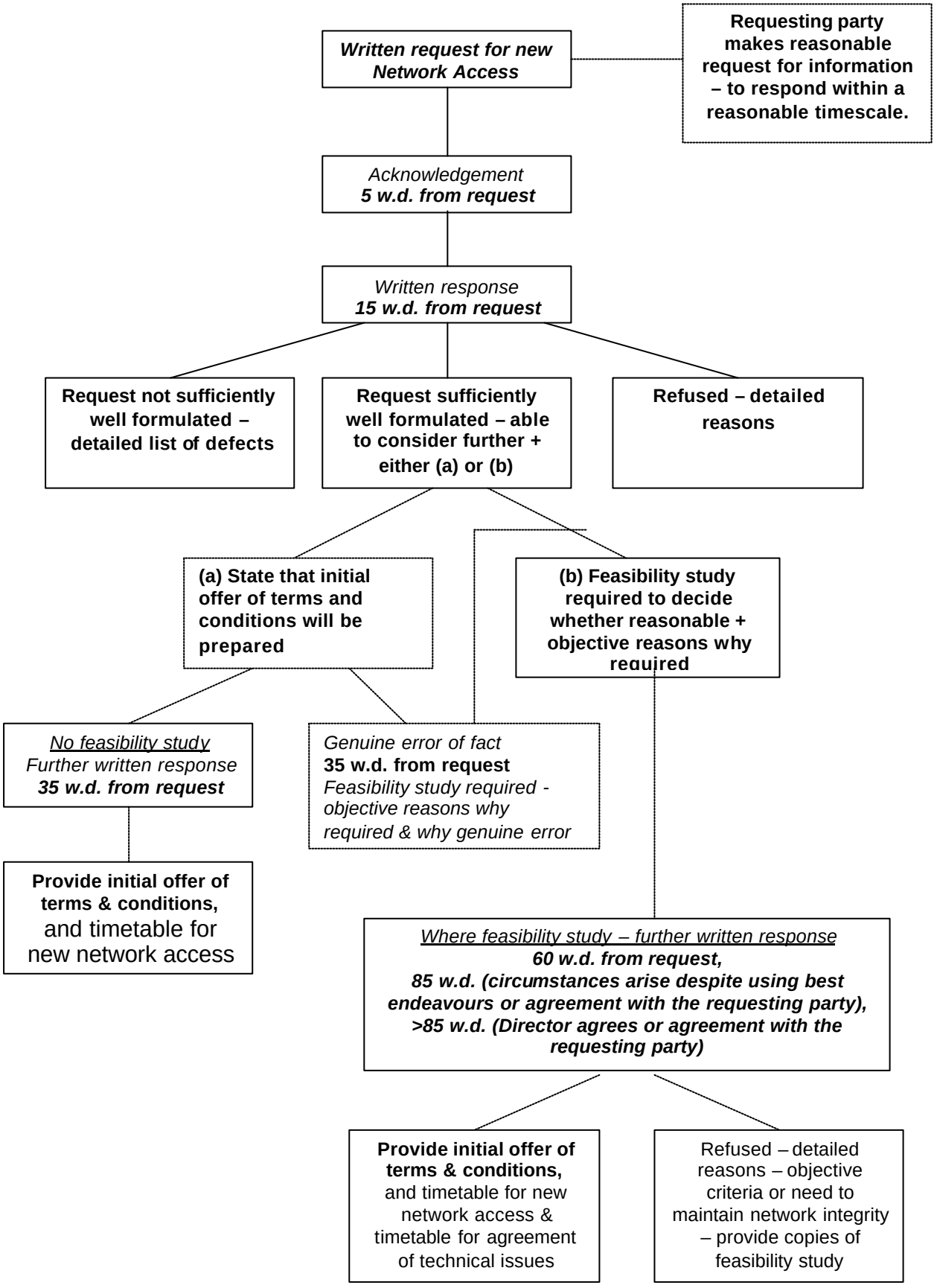
Communications Act tests

4.187 The Director proposes to impose this condition pursuant to section 87 (3) and 87(5) of the Act. Specifically, under section 87(5)(a) the Director 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) he considers that the proposed 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 propose condition.

4.188 The Director has considered the matters set out in section 87(4). In particular, under section 87(4)(d) he 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.

4.189 The Director has also considered the test for setting conditions set out in section 47 of the Act, namely that this condition is objectively justifiable, does not unduly discriminate, is proportionate and transparent. The Director considers that his proposed 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 Director does not consider that the obligation should be imposed on Kingston since there is not the same

level of demand for Network Access in the Hull Area. 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. 5.122 Finally, the Director, in imposing this condition, has considered all the Community requirements set out in section 4 of the Communications Act. In particular, under section 4(8) the Director 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.
A flowchart of the proposed conditions is set out below:


Written request for new Network Access
Requesting party makes reasonable request for information – to respond within a reasonable timescale.
Acknowledgement
5 w.d. from request
Written response
15 w.d. from request
Request not sufficiently well formulated – detailed list of defects
Request sufficiently well formulated – able to consider further + either (a) or (b)
Refused – detailed reasons
(a) State that initial offer of terms and conditions will be prepared
(b) Feasibility study required to decide whether reasonable + objective reasons why required
No feasibility study
Further written response
35 w.d. from request
Genuine error of fact
35 w.d. from request
Feasibility study required - objective reasons why required & why genuine error
Provide initial offer of terms & conditions, and timetable for new network access
Where feasibility study – further written response
60 w.d. from request,
85 w.d. (circumstances arise despite using best endeavours or agreement with the requesting party),
>85 w.d. (Director agrees or agreement with the requesting party)
Provide initial offer of terms & conditions, and timetable for new network access & timetable for agreement of technical issues
Refused – detailed reasons – objective criteria or need to maintain network integrity – provide copies of feasibility study

Imposition of Accounting separation - SMP condition 10

4.190 This section covers regulatory financial reporting obligations that can be imposed on the proposed Dominant Providers, BT and Kingston, to ensure that a number of the proposed obligations set out in this chapter 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. In particular, this section covers the imposition of obligations for cost accounting systems and accounting separation.

4.191 The Director 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 why these financial reporting obligations are required.

4.192 The processes of regulatory financial reporting are complex and cover many issues such as accounting standards and methodologies, audit, transparency, disaggregation, reconciliation and publication of information. These practical issues are distinct from the questions such as the level of regulation in a market and the types of remedies to be employed, which have been addressed in the market reviews. However, these practical processes should be consistent across all markets susceptible to regulation to ensure that there is certainty both for the regulator, Dominant Providers and other players in the market.

4.193 Therefore, on 22 May 2003, the Director published the consultation document Financial reporting obligations in SMP markets. This document can be found at http://www.oftel.gov.uk/publications/eu_directives/2003/cost/index.htm. This consultation closed on 31 July 2003 and responses to the consultation can be accessed at http://www.oftel.gov.uk/publications/responses/2003/cost0503/index.htm.

4.194 The scope of financial reporting in SMP markets 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. The Director intends to publish the explanatory statement and formal notifications on regulatory financial reporting at 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 individual reviews.

Accounting separation

4.195 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.

4.196 In paragraph 4.85, the Director is proposing that Dominant Providers should have an obligation to not unduly discriminate in certain markets. 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.

4.197 Therefore, given the importance of this issue in ensuring an effectively competitive marketplace in the UK, the Director believes that it is necessary that BT and Kingston should be obliged to have accounting separation obligations. These obligations will enable Oftel to monitor whether they are unduly discriminating against or between other providers or not, by making visible the wholesale prices and internal transfer prices of their services and products. Therefore, the accounting separation obligations for BT and Kingston will apply to the markets that are subject to the obligation to not unduly discriminate.

4.198 In relation to BT, these are: asymmetric broadband origination in the UK excluding the Hull area; and broadband conveyance in the UK.

4.199 In relation to Kingston, the accounting separation obligations will apply to the market for asymmetric broadband origination in the Hull area.

4.200 In the document *Financial reporting obligations in SMP markets*, the Director has proposed the details of the accounting separation information required for these purposes from BT and Kingston. This information can be found at Annex H of the document Financial reporting obligations in SMP markets.

Communications Act tests

4.201 Section 4 of the Communications Act sets out the Community requirements for regulation. The Director has considered all of the criteria in Section 4 of the Communications Act. In particular, the imposition of an accounting separation obligation would specifically be justifiable and proportionate to promote competition in relation to the provision of electronic communications networks and services; to ensure the provision of network access and service interoperability for the purpose of securing efficient and sustainable competition and the maximum benefit for the persons who are customers of communications providers. 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.

4.202 Section 47 of the Communications Act requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The Director believes that given the importance of non-discrimination in these markets (as described in paragraphs 4.73-4.79) 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 the Director is able to monitor the obligations via an accounting separation obligation. Furthermore, the accounting separation obligation does not discriminate between operators of the same class. That is, BT and Kingston are the only Dominant Providers identified by this market review and are the only providers with proposed obligations to not unduly discriminate in their relevant markets.

4.203 The proportionality and transparency of the financial reporting obligations is dealt with in more detail in the separate consultation on financial reporting in SMP markets. In that document, the Director has proposed the amount of information required and the processes needed to ensure that the information is fit for purpose, relevant and reliable. The Director will ensure that any accounting separation obligation imposed is both proportionate and transparent.

4.204 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 the Director to identify whether products and services are being provided on a non-discriminatory basis.

Responses to the previous consultation

4.205 Nearly all respondents stated that they would reserve their substantive comments for responding to the consultation document Financial reporting in SMP markets. Additionally, there was no substantive disagreement regarding the necessity of accounting separation and cost accounting obligations; the debate concerned the extent and detail of the obligations. This chapter will only address certain points; the more detailed issues have been consulted on in more detail in Financial reporting in SMP markets and will be considered in the context of that consultation.

BT

4.206 While reserving substantive comments for the consultation on financial reporting, BT did express concerns regarding the level of granularity for product reporting.

4.207 The Director considers that the consultation document *Financial reporting in SMP markets* addresses the issue of the level of detail required by the financial reporting obligations and that this subject has been dealt with fully in

that consultation, and will be dealt with in the explanatory statements and formal notification to that consultation.

Kingston

4.208 While reserving substantive comments for the consultation on financial reporting, Kingston did express concerns regarding the proportionality of the obligations. Kingston urged the Director to be "mindful of potential cost and resource burden this might represent if taken too far". Kingston also claimed that there is "no evidence that any ISP or operator has any concerns about non-discrimination or pricing levels".

4.209 As stated above, the Director considers that accounting separation is an appropriate and proportionate obligation on Kingston in this market. The consultation document *Financial reporting in SMP markets* addresses the issue of the implementation of the financial reporting obligations, and that this subject has been dealt with fully in that consultation, and will be dealt with in the explanatory statements and formal notification to that consultation.

Other respondents

4.210 Other communications providers also stated that they would respond in full to the financial reporting obligation consultation. However, a common theme of their initial comments was that the financial reporting obligations should cover all areas of BT's business not just those upstream markets with SMP and certain downstream markets with SMP.

4.211 The Director considers that the European Directives only allow the imposition of financial reporting obligations on providers in markets where that provider has SMP, and only in downstream markets where remedies in upstream markets are not sufficient.

A proposed direction to provide ATM interconnection

4.212 Option 11 in the first Consultation Document proposed that BT should provide ATM interconnection services on a retail minus basis. The *Direction to resolve a dispute between BT, Energis and Thus concerning xDSL interconnection at the ATM switch* specified in detail the type of interconnection that BT should provide. As a result, since August 2002, BT has been offering ATM interconnection to Communications Providers in general as well as the two parties to the original dispute. The Director believes that it is important and appropriate that BT continues to have a specific obligation to provide ATM interconnection on the terms set out in the Direction. The major provisions of the draft direction include:

- the product specification (basic services and additional functionality);
- the pricing rule.

Product specification

4.213 Service A and Service B (the "Basic Services") shall have the technical characteristics described in Annex 2 of the ATM direction at Annex F. Service A consists of an ADSL enabled EUDP and ATM backhaul and Communications Providers will access this service by interconnecting with BT's ATM network at the relevant Parent ATM Switch. Service B consists of an ADSL enabled EUDP, ATM backhaul (to the Parent ATM Switch) and ATM conveyance (to a Distant ATM Switch) and the Communications Providers access this service by interconnecting with BT's ATM network at the Distant ATM Switch. Therefore, Service B is the same as Service A plus ATM Conveyance.

4.214 The Basic Services will only be available in areas that are served by a local exchange that BT has enabled with a DSLAM, as a result of BT's DSL roll-out. To enhance the basic interconnection services, additional features were requested.

4.215 This additional functionality consists of the following:

- scaleable virtual paths (VPs);
- removal of the limits for the maximum number of EUDPs that can share a single VP; and
- additional classes of service.

4.216 The original ATM interconnection Direction implemented specific obligations which have led to changes in the way in which other providers can compete with BT. Since August 2002, BT has offered ATM interconnection in the form of its DataStream series of products. As a result other providers have been able to compete with BT in the provision of intermediate services and retail services.

4.217 This Direction, proposed as part of this review, would be made under the Network Access obligation for the wholesale broadband access markets, if imposed. The Direction would require BT to provide interconnection upon reasonable request. It would specify obligations, which would carry forward the existing requirements to provide ATM interconnection brought into force by the original ATM interconnection Direction, as explained in the paragraphs that follow.

4.218 An obligation to provide ATM interconnection will provide more certainty than just a more general obligation to provide Network Access, as BT will be required to continue to provide products to a detailed specification agreed by providers. Putting this *ex ante* obligation in place, therefore, will avoid the possibility of the Director being required to resolve multiple and successive

complaints, the resolution of which would duplicate work already undertaken for the ATM Interconnection Direction. There has been no subsequent material change in market conditions to suggest that the requirement should not exist. Carrying forward this recently introduced regulation, therefore, will add to the certainty in this market provided by continuity of the market conditions under which BT and other providers operate. This will help to encourage appropriate investment decisions which will maximise the level of competition in downstream markets.

Pricing Rule

4.219 In the First Consultation, the draft direction set out how BT should charge for the ATM interconnection services. In line with the general approach requiring BT to provide ATM interconnection on fair and reasonable charges, terms and conditions, it was proposed that the charge should be set on retail minus basis. This was to be implemented through a specific rule which prohibited a margin squeeze. The proposed rule was set out on the basis that BT's costs were used in deriving the minus. The Director consulted on whether there was a more appropriate way in the broadband access markets of assessing the minus.

Responses to the consultation

4.220 BT argued that part of the Director's proposed remedies in the relevant wholesale broadband origination market, the roll-forward of the ATM Direction and thus BT's requirement to provide 'Additional Functionality services', has no relationship to the Director's retail market analysis. BT argues that these additional functionalities (compared to BT's intermediate services) are inapplicable to broadband internet access but applicable to other retail products such as PSTN, leased lines, and video services.

4.221 Colt argues that in order to encourage new entrants to the broadband conveyance market it is essential to retain the "flat" pricing structure. SPC Networks argues that BT's current "flat" broadband conveyance pricing structure does not potentially reflect the cost of such conveyance thus distorting potential OLO investment decisions and undermining long term competition in conveyance. This would be especially true if the underlying costs of leased line conveyance were the same or similar to those of broadband conveyance. It suggests similar "Tier 1" pricing as is being consulted on in the leased lines review should also be imposed in the present context. It does not believe that the non-hierarchical natures of BT's ATM network when compared to its SDH network is a relevant consideration when formulating an efficient pricing structure.

The Director's response

4.222 In relation to BT's response on additional functionality, the Director disagrees. He considers that whilst the additional functionalities that he requires

BT to provide via this element of his proposed remedies may indeed facilitate the provision of end-to-end products such as video services, they will primarily allow for the creation of innovative intermediate services that will in turn allow the provision of innovative and differentiated broadband internet access retail services.

4.223 The Director does not propose to set broadband conveyance charges on a cost basis. Therefore, it is not appropriate to consult on implementing a similar tiered pricing structure as being consulted on in the Leased Lines market review. It is proposed that the conveyance charges be subject to a no margin squeeze obligation. Therefore, whether the conveyance charges are flat or tiered is matter for BT, subject to the requirement of the remedies set out in this chapter, in particular the need to avoid a margin squeeze for both Service A and B.

The Director's initial conclusions

4.224 Having considered the responses to the consultation, the Director has now formed the view that, even though retail minus is the appropriate pricing methodology for these products, his original proposal of simply relying on this general pricing rule is not the appropriate means of implementing that methodology for ATM interconnection. The Director appreciates that the proposal made in the previous consultation did not address in full the operators' and BT's concern about the lack of predictability regarding the outcome of this rule. In addition, he agrees with the industry that his previous proposal relied on lengthy investigations and that it only allowed for limited transparency in its application.

4.225 Hence, the Director is proposing an approach which will allow greater certainty and faster implementation by specifying the level of the margin such that there is no price squeeze between BT's ATM interconnection charges and its prices for the relevant downstream services (i.e. to set the minus). He considers that this revised approach should provide greater certainty and transparency to both the operators and BT on the conditions that ATM interconnection charges should satisfy, so as to allow operators to compete effectively in the provision of intermediate and retail broadband services. It is, however, a less flexible approach and might not reflect the most up to date situation at any one point in time. The Director is aware of this limit and intends to revise the margin periodically so as to reflect any change in circumstances, although he is not yet in a position to determine what that time period will be. He is, however, of the view that this disadvantage will be more than outweighed by the higher degree of certainty provided to all the players in the downstream market.

4.226 The Director does not, at present, intend to set the margin with respect to all existing relevant downstream products (e.g. the retail products offered by BTOpenworld), because it would be a complex exercise, extremely time-consuming and resource-intensive. Instead he intends to limit himself to specifying the margins between ATM interconnection and IPStream services and

this should be sufficient to provide stability and certainty to the industry, since this is the main group of products the operators compete with. He will keep the need to set other margins under review. In the meantime, the issue of a margin squeeze between ATM interconnection services and all the remaining downstream services (both intermediate and retail) will be covered by the proposed SMP condition that the charge for Network Access be fair and reasonable. This obligation would still prevent BT pricing ATM interconnection Service A or B in such a way that results in a margin squeeze when compared to the price of any BT broadband internet access ('BIA') service, which includes an EUDP and one or more of the other network elements making up the Services A and B.

4.227 This is because as set out in paragraph 4.42 for a Network Access charge to be fair and reasonable it must not result in a margin squeeze. This obligation would also cover any new BIA service BT may introduce in the future. In addition, the Director expects that the methodology employed and the information collected in setting the margin with respect to the IPStream prices will support any investigation on margin squeeze that may involve another BIA product. This will simplify and speed up any investigation process, as well as provide more clarity on how the margin squeeze test will be performed in such a case.

The revised proposal in more detail

4.228 Hence, as a result of this revised proposal, the Director intends to specify:

> i) a set of margins relative to the existing IPStream products ie each margin will reflect the additional costs necessarily and efficiently incurred by BT or a reasonably efficient new entrant, over and above the relevant ATM interconnection charges, in order to supply a service equivalent to each IPStream service (e.g. the costs of the IP network or sales and marketing overheads); and
>
> ii) a set of usage factors to apply to ATM interconnection charges. ie. the usage factors will allow the translation of those ATM interconnection charges, which are not priced on a per end user basis, to charges on a per end user basis, so as to be comparable to the prices for IPStream services

4.229 Once these figures are set, the proposed pricing obligation requires that the sum of all the relevant ATM charges converted on a per end user basis (through the usage factors) should be less than or equal to the IPStream price minus the specified margin (for each existing IPStream variant and for both ATM Service A and Service B). Hence, the formula that guarantees that upstream prices are set on a retail minus basis, which prevents margin squeezing in relation to ATM interconnection charges, is:

$$\sum_{i=1}^{n} a_i p_i \leq p_{IPStream} - x$$

where:
p_i = the relevant ATM interconnection charges
a_i = the usage factors
n = the number of relevant ATM interconnection charges
$p_{IPStream}$ = the price of the IPStream service
x = the margin

4.230 The Director believes that this pricing rule should provide all operators and ISPs with the necessary certainty about the absence of a margin squeeze, thus creating the conditions for the development of competition in downstream markets. The size of the margins and the usage factors will be re-assessed periodically to avoid the formula becoming out of date. He will set out the first date for review when the Direction setting the margin is issued in the new year.

4.231 In relation to the margin squeeze test, this document is, therefore, only consulting on the general approach that will be used to determine the margins. The actual figures and the details of the methodology used to determine them will be the subject of a separate draft Direction that the Director intends to publish early next year.

Communications Acts tests

4.232 The Director considers the proposed ATM interconnection Direction meets the tests set out in the Act. In proposing to carry forward this Direction the Director has considered all the Community requirements set out in Section 4 of the Communications Act. In particular, he has considered the requirements to promote competition and secure the maximum benefits for end users in encouraging the provision of network access and service interoperability. The Director considers that it is reasonable to carry forward the obligation on BT to provide ATM interconnection because the provision of network access on this basis will secure efficiency and sustainable competition by enabling communications providers to compete effectively with BT by utilising more of their own networks. Although the Director is proposing to revise his approach to the margin squeeze test, as set out on paragraph 4.225, it is proposed to carry forward the existing arrangements for ensuring no margin squeeze in relation to the pricing of ATM interconnection.

4.233 In proposing a Direction that affects the operation of a condition imposed under Section 49 of the Act, the Director must first be satisfied that to do so is objectively justifiable, does not discriminate unduly and is proportionate and transparent. The Director considers that this Requirements is objectively justifiable since it is designed to promote greater competition in downstream markets and prevent leveraging of SMP from the markets for wholesale broadband access. The obligation does not unduly discriminate between different

operators. The Direction only applies to BT. However; the Director does not think it is necessary for Kingston to be subject to the same obligations as BT in relation to this specific type of interconnection. This is because, as far as the Director is aware, there is no demand for such a product in the Hull area and to impose any such obligations would be disproportionate. The obligation on BT is, however, proportionate in relation to the objective it is intended to achieve since it is focused on promoting competition in downstream markets. The draft Direction sets out, amongst other things, details of the product and how it should be priced and therefore meets the test of transparency since it is clear that the obligations are intended to remove entry barriers and encourage alternative communications providers.

4.234 The decision to retain a no margin squeeze rule meets the requirements of Section 88 of the Act. From the market analysis it appears to the Director that there is a relevant risk of adverse effects arising from pricing distortions. In particular, the market analysis has shown that BT might impose a price squeeze so as to have adverse effects for end users by reducing the choice available to them downstream. In the light of this analysis the Director is of the view that such a rule is appropriate. In particular such a rule ensures little risk of any adverse effects on the market arising from price distortion. The pricing rule is also appropriate for the purposes of promoting efficiency, sustainable competition and conferring the greatest possible benefits on the end users of public electronic communications services. The Director has also taken into account the extent of the investment required to meet this condition and has concluded that it does not impose an undue burden on BT. The pricing rule addresses the risk that BT will impose a price squeeze which might have adverse consequences for end-users of public electronic communications services.

The Access Guidelines

4.235 The Access Guidelines state that obligations relating to the supply of wholesale products must be based on the nature of the problem identified, proportionate and justified in the light of the objectives in Article 8 of the Framework Directive. The Direction has been formulated in accordance with the nature of the problem identified which is BT's SMP in the provision of wholesale broadband access. Section 4 of the Communications Act gives effect to Article 8 of the Framework Directive. As section 4 of the Act has been considered above, further analysis of the objectives of Article 8 is not required. Furthermore, it has already been stated why the ATM Interconnection Direction is proportionate.

1. Table 5.3 of Oftel's International Benchmarking Study of Internet Access (dial-up and broadband) October 2003

CHAPTER 5

Representations

5.1. The Director is publishing the Notification at Annex E to allow interested parties, and the European Commission and other national regulatory authorities, to make any representations. After considering any such representations, the Director will, if appropriate, give effect to these proposals by publishing a further and final notification.

5.2 Representations must arrive at Ofcom **no later than close of business on 6 February 2004.** Representations received after this time will not be taken into account, and no extensions of the deadline will be permitted.

5.3 Where possible, comments should be made in writing and sent by email to naaz.rashid@ofcom.org.uk. However, copies may also be posted or faxed to the address below. If any parties are unable to respond in one of these ways, they should discuss alternatives with:

Ms Naaz Rashid
Competition & Markets
Ofcom
Riverside House
2a Southwark Bridge Road
London SE1 9HA
tel: 020 7783 4156
fax: 020 7783 4109

Further copies of this document

5.4 This document can be viewed on Ofcom's website, www.ofcom.org.uk. Hard copies can be made available on request from the Ofcom Contact Centre by telephoning 0845 456 3000 or sending an email to contact@ofcom.org.uk.

Publication of representations

5.5 On this occasion, the Director is not inviting interested parties to comment on the representations made by others. However, in the interests of transparency, all representations will be published, except where respondents indicate that a response, or part of it, is confidential. Respondents are therefore asked to separate out any confidential material into a confidential annex which is clearly identified as containing confidential material. Ofcom will take steps to protect the confidentiality of all such material from the moment that it is received at Ofcom's offices. In the interests of transparency, respondents should avoid applying confidential markings wherever possible.

5.6 Non-confidential representations can be viewed on Ofcom's website.

Annex A

Supplementary Market Analysis

This Annex contains further information and analysis relating to the market analysis set out in chapters 2 and 3 of the consultation document. It is divided into three parts: The first part sets out the detailed analysis of current prices in the wholsale broadband internet access in the UK; the second part contains the derivation of the formula for the critical loss calculation used in the SSNIP test. the third part contains an analysis of the broadband access technologies other than ADSL and cable modems referred to in chapter 3.

Part 1 Analysis of prices

Current Prices

The Director here sets out the available information which may inform demand side substitution issues between broadband internet access and the available disaggregated range of narrowband internet access services. The analysis considers on a disaggregated basis current relative prices of residential broadband and narrowband services and customer survey evidence which together inform broadband customers' likely response to a small, significant, non-transitory increase in price (SSNIP) above the competitive level by a current hypothetical monopolist in the supply of residential broadband internet access. The prices used in the comparisons are set out in Table A. Subsequently, the analysis also discusses business customers and considers whether or not the retail price trends in residential broadband internet access inform market definition issues.

Table A: Current narrowband and broadband prices

	Connection fee	**Monthly fee**	**Modem cost**	**Other charges**
Narrowband access				
Unmetered, flat rate (24/7) dial up narrowband Internet access (non-dedicated line)	None	£13-17	-	

Unmetered, flat rate (24/7) dial up narrowband Internet access (dedicated second line)	£75 for the second line connection charge	£13-17	-	Line rental £31.49 / quarter (£10.50/ month)
Broadband Internet access – ADSL				
BT Broadband (512kbit/s)	£30; but subject to special offers	£27.00	£50; but subject to special offers	
BT Home 500 Plug and Go (self-install)	£65 activation fee; but subject to special offers	£29.99	£85; but subject to special offers	
Pipex (512kbit/s)	£58.75; but subject to special offers	£23.44		
Tiscali (256kbit/s) always on internet access	£50	£19.99		
Broadband internet access – Cable				
Ntl Broadband Home (150kbit/s)	£75; but subject to special offers	£17.99		
Ntl Broadband Home (600kbit/s)	£75; but subject to special offers	£24.99		
Ntl Broadband Home (1Mbit/s)	£75; but subject to special offers	£34.99		

Telewest Blue Yonder (512kbit/s)	£50; but subject to special offers	£29.99 or £25 (including modem cost) if other services are subscribed to.		

Source: Suppliers' web-sites. If not stated otherwise all prices include VAT.

Price trend

In addition to examining current relative prices faced by residential customers, it is also useful to examine price trends over time. Over the period of 2002, the Director estimates that the relative price of residential broadband internet access prices for rental generally reduced in the region of 20-30%. However, this reduction in the relative price of broadband to narrowband internet access does not on its own provide evidence that a SSNIP by a hypothetical monopolist in the provision of broadband internet access would be unprofitable. Following the responses he has received to his consultation regarding this issue, the Director acknowledges that not only was this fall in prices likely to be driven (in part) by (wholesale) scale economies, but other factors will also have played a part. These are likely to have included underlying, non-scale related cost reductions and potential retail pricing pressure from narrowband internet access services. However, as the Director has no evidence to suggest that current retail broadband prices are below cost he considers that the price reductions that occurred in 2002 allowed for movement in the nascent market towards the competitive price level. Therefore, in this case the Director considers that these price falls do not necessarily inform the issue of demand side substitution between narrowband and broadband internet access from competitive pricing levels.

Part 2: Critical Loss Derivation

Outline of methodology

The critical loss is the percentage reduction in demand for which the SSNIP leaves profits unaffected. So a larger loss of demand than the critical loss makes the SSNIP unprofitable.

The change in profit equals the change in revenue less the marginal costs saved (assuming constant marginal cost, c):-

(1) $R_1 - R_0 = p_1q_1 - p_0q_0 - c\,(q_1 - q_0)$

where R is profit, c is marginal cost

$p_1 = p_0\,(1 + s)$ where s is the size of the SSNIP

$q_1 = q_0\,(1 + L)$ where $L < 0$ is the percentage loss of demand

$c = ap_0$ ie a is the ratio of marginal cost to the initial price

Substituting these definitions in (1), specifying $R_1 - R_0 < 0$ and rearranging gives the critical loss:-

(2) $$\tilde{L} < -\frac{s}{1+s-a}$$

Examples

Assume s = 10%

(i) c = 0% x p_o
implies $\tilde{L}$ = -9.1%

(ii) c = 50% x p_o
implies $\tilde{L}$ = -16.7%

(iii) c = 60% x p_o
implies $\tilde{L}$ = -20%

(iv) c = 70% x p_o
implies $\tilde{L}$ = -25%

Conclusions of analysis

In the Director's previous consultation on the 'Review of the Wholesale Broadband Access Market' of the 28 April 2003, he estimated that a 10% SSNIP would give rise to a critical loss in the range 14% to 19%. At this time the Director assumed a weighted average retail price, before the SSNIP, of £26 pcm (inc VAT) and estimated the marginal cost of supplying broadband Internet access services to be in the range £10 to £15 pcm.

The Director has reconsidered his estimation of the critical loss in light of:

- Further cost information gained since the previous consultation.
- The revised definition of broadband Internet access services which now includes all Internet access services that are always on, allow simultaneous voice use and provide faster access than dial-up.

The Director has also reconsidered whether or not it is appropriate to consider LLU shared access charges when calculating critical loss values. The Director believes that a case can be made for including LLU shared access charges or for using only the marginal costs associated with a vertically integrated provider. The reasoning for this is set out below.

A purist approach to market definition might suggest that markets should be defined in the abstract and in this case should just consider whether broadband is constrained by narrowband. This would suggest that the true underlying costs should be reflected when calculating marginal cost i.e. absent any regulation. On this basis, there would be a case for using only the marginal costs associated with a vertically integrated provider.

However, it might also be argued that market definitions should reflect the conditions that firms face in reality. This would suggest that markets should be defined assuming that LLU regulation exists. In the context of market definition, it is assumed that a hypothetical monopolist raises prices by a significant, non-transitory amount. If an LLU operator were the hypothetical monopolist then the marginal costs incurred would be based on the LLU shared access charges. However, if a vertically integrated provider were the hypothetical monopolist then the marginal costs incurred would be those based on its actual costs. The hypothetical monopolist test is constructed as an anonymous test such that no assumption is made regarding the identity of the hypothetical monopolist. Therefore, in this scenario, there would be a case for using LLU shared access charges. However, the use of LLU shared access charges would represent the upper bound of the marginal cost of supplying broadband Internet access, as they are higher than a vertically integrated provider's own marginal costs.

In calculating the critical loss values, the Director has taken a conservative approach. By using his estimate of a vertically integrated provider's own marginal costs, the Director has adopted an approach that would be more likely to result in a broader market definition (because this approach results in lower critical values than if LLU shared access charges had been used as the basis for the marginal cost).

The Director currently estimates that the marginal cost of supplying retail broadband Internet access services is in the range [redacted] pcm (inc VAT), whereas the current weighted average retail price, before the SSNIP, is £25 pcm (inc VAT). Given these latest estimates, a 10% SSNIP would give rise to a critical loss in the range [redacted]

Part 3: The Provision of Wholesale Broadband Services Using Non-ADSL and Cable Modem Technologies

There are a number of alternative technologies that can provide broadband Internet access, in particular:

- broadband fixed wireless access (BFWA);
- broadband satellite access (BSA);
- fibre to the home (FTTH);
- mobile higher bandwidth access (3G); and
- other technologies such as powerline and free space optics.

Of these alternative technologies, BFWA and broadband satellite access are the two that are most widely available and actively being consumed in the UK. However, even these two technologies are very much in their infancy in the UK with very few subscribers actually using them. BFWA and BSA are discussed in more detail below along with the other alternative technologies noted above.

The total number of UK end user subscribers to the broadband services described in this Annex continue to represent less than one percent of the wholesale asymmetric broadband origination market. It is thus the case that the Director considers that even in aggregate, these alternative technologies are not yet providing a mass-market service in the UK nor are they likely to do so for the duration of this market review.

Broadband Fixed Wireless Access (BFWA)

Broadband fixed wireless access (BFWA) allows high-speed data connections using radio links between an aerial located on the user's premises and a base station, rather than using a telephone line or a cable television network.

BFWA services are provided in urban areas where they seek to compete with ADSL/cable modem services. However, the full extent to which BFWA can mirror the urban coverage of the ADSL and cable modem technologies is limited to the extent that this technology requires "line of sight" which can be disrupted by high-rise buildings.

BFWA services can also be used to extend broadband services offered over ADSL and cable modem technologies by providing the "in-fill" of gaps in urban broadband coverage (eg beyond cable and copper reach), and to provide broadband access to town-edge and rural communities. Indeed, BT has expressed interest in providing BFWA service in order to extend the availability of broadband services.

While most of the BFWA currently available is "point to multi-point", an alternative system is "mesh radio". This has the potential to provide community networks in rural areas and works on the principle that a small radio antenna installed at each household or business, transmits on to neighbouring users to form a network or "mesh", doing away with the need for large antennae or mast used to transmit to each individual customer in traditional point to multi-point wireless solutions. Mesh radio is being trialled by BT in the UK at the moment.

Liberty Broadband and Your Communication are offering BFWA services in the UK, although Your Communication specialises in offering symmetric as opposed to asymmetric services.

Liberty Broadband's coverage extends over approximately 12% of the UK population, mainly in urban areas. It has aspirations to cover all 40 major urban areas in the UK (65% of the UK population) by 2003. The services it offers range from 512/256 to a symmetric 1Mbit/s Service - though customers can choose from a range of options to increase speeds and/or ensure a given service level. The monthly charge for the most basic single retail user service (residential only) is £39.99 with £150 one off charge. This makes the service somewhat more expensive than the cheapest available retail ADSL/cable modem.

Whilst the broadband fixed wireless access technology may possess the potential to provide an increasing competitive constraint on the technologies of cable modems and ADSL in the long term in the provision of wholesale asymmetric broadband origination, there are currently only 2,500 end user customers obtaining their broadband services via this technology in the UK. The Director considers that this technology is not yet providing a mass-market service, and is not likely to do so for the duration of this market review. 2,500 customers equate to less than a half of one percent of the wholesale market.

Broadband Satellite Access

Some satellites in orbit around the earth can offer broadband services. Data transfer has traditionally been in one direction only ('one-way' satellite providing a broadband link downstream from the network to the end user, with the upstream link provided over a fixed PSTN/ISDN line), however new developments have enabled a satellite return path to be used ('two-way' satellite).

There are a number of UK ISPs offering 2-way services including: Bridge Broadband, Beam Solutions, BT Openworld , Crystal Data, I-sat, Isonetric and Space IP. Downstream speeds vary from 400 to 2000 kbit./s and retail prices start from £60 a month. These prices are three times as large as those of the lowest ADSL and cable modem retail prices currently available in the UK.

UK ISPs offering one-way satellite services include SatDrive, IpviaSat, and Xantic Broadband. Downstream capacities vary between 200 and 4000 kbit/s

and by adding together the relevant service elements required to provide an equivalent asymmetric broadband retail service as offered using ADSL/cable, the current prices of the one-way satellite service are generally more expansive than those provide via ADSL/cable. Indeed, given the requirement for a customer to use its fixed PSTN line to dial-up to obtain the upstream link part of this service, two of the functional elements of broadband as defined in Chapter 2 are missing from one-way satellite services. These being the always on and the ability to make simultaneous voice calls together with internet access. However, as there are currently less than 10,000, one-way satellite customers in the UK (less than a half of one percent of the broadband customer base) the Director does not consider it appropriate to analyse whether this class of broadband customers constitute a separate market of their own. He considers that this technology is not yet providing a mass-market service, and is not likely to do so for the duration of this market review. As such he currently considers it appropriate to include one-way satellite customers in the broadband market at both the retail and wholesale levels. As noted in Chapter 2 on a forward looking basis the Director may consider it appropriate to revisit his market definitions as internet access speeds, functionalities and consumer behaviour develop.

Where satellite services are provided, coverage will in principle be national or wider, eg Europe wide. However, consumers again require "line of sight", which will limit availability in some cases (eg in dense urban areas behind high-rise buildings or in deep sided valleys). This is not expected to be a significant problem, though determining the exact coverage possible in the UK is likely to be difficult.

Whilst the broadband satellite access technology may possess the potential to provide an increasing competitive constraint on the technologies of cable modems and ADSL in the long term in the provision of wholesale asymmetric broadband origination, there are currently less than 10,000 end user customers obtaining their broadband services via this technology in the UK.

Fibre To The Home (FTTH)

FTTH provides broadband services over an optical fibre link to the consumers' home (replacing the conventional copper pair or coaxial cable). This potentially allows services with higher bandwidth than those offered over ADSL and cable modems. However, this technology is not currently being offered to broadband end users in the UK.

Mobile Higher Bandwidth Access (3G)

As was discussed in Chapter 2, the Director currently considers that mobile internet access is in a separate market from fixed broadband internet access. The reason for this being that internet access over mobile networks is not an effective demand side substitute for broadband Internet access on fixed

networks. However, as also noted in Chapter 2, the extent of this substitutability might need to be reviewed in future following the take-up of new mobile technologies offering packet switched services, such as General Packet Radio Service (GPRS) and Universal Mobile Telecommunications System (3G).

Once more, the potential for this alternative technology to provide an additional competitive constraint in the wholesale asymmetric broadband origination market is a longer term possibility in the UK as services using this technology are not yet available to the mass-market.

Other broadband technologies

Examples of further alternative technologies which may in the future provide wholesale asymmetric broadband origination services in the UK include powerline and free space optics.

Powerline technology uses the electricity supply network to provide two-way broadband and phone connections by using filters that can separate the power supply flowing along the cable from communications signals. Trials are currently being run in Scotland (Scottish Hydro-Electric). Previous trials by NorWeb in the UK did not progress to a commercial product.

Free space optics ('FSO', or wireless optics) uses laser guided beams of light to transmit advanced services. FSO transmits light pulses through the air to receivers that are less than 1km away and within line of sight of a base terminal, which is connected to fibre optic cable. These services do not require spectrum or installation of wire or cable. Products are available in the UK, but on a limited basis.

As with the FTTH and 3G technologies, the potential for these alternative technologies to provide an additional competitive constraint in the wholesale asymmetric broadband origination market is a longer term possibility in the UK and beyond the time frame for the current market review. Services using these technologies are either not yet available or have not yet attained a mass-market presence.

Annex B

Additional criteria to assess single firm Significant Market Power

Table B provides an application of the remaining single firm dominance criteria not discussed in Chapter 3 to the wholesale asymmetric broadband origination market.

Table B: Wholesale asymmetric broadband origination – single firm SMP	
Further Criteria:	Assessment
Vertical integration	The fact that the three material competitors in this wholesale market are also active at the retail level does not influence the wholesale SMP assessment.
Control of infrastructure not easily duplicated	The extent to which BT's narrowband analogue access network, characterised by ubiquity, provides it with an infrastructure advantage in the supply of broadband services is already captured in the analysis of operators' potential broadband market shares.
Pricing and profitability	The Director does not believe that there exists any evidence of excessive pricing of wholesale asymmetric broadband services, whether these prices are explicit or implicit within retail service prices.
Technological advantage or superiority	The Director considers that neither the ADSL or cable modem technology possesses a significant advantage over the other in the provision of wholesale asymmetric broadband origination services.
Products/services diversification (e.g. bundled products or services)	The three material competitors in this wholesale market are each able to offer diversified and differentiated wholesale services such that this criterion does not particularly inform the wholesale SMP assessment.
A highly developed distribution and sales network	This criterion does not particularly inform the wholesale SMP assessment. It is more relevant for retail market considerations.

Criteria to assess collective dominance

Table C provides an application of the collective dominance criteria to the wholesale asymmetric broadband origination market. As the majority of these criteria, including those most salient, indicate that this wholesale market is not characterised by collective dominance the Director concludes similarly.

Table C: wholesale asymmetric broadband origination – collective dominance	
Criterion:	**Implication for assessment of collective dominance:**
Market concentration:	99% of this market is shared between three companies who possess current shares of: 57%; 24% and 18%. However, there is no evidence in this market that these companies are co-ordinating their activities either explicitly or tacitly. There is thus no necessary indication of collective dominance from this criterion.
Transparency:	The pricing transparency that exists in this wholesale market is due to regulation as the ADSL services are provided as a result of regulation. The Cable companies do not currently offer a wholesale service.
Mature market:	The market is new and experiencing rapid growth in customer take-up. The industry growth forecasts for the time period of this review show continued rapid expansion. As explained in the single firm SMP assessment, BT is the operator best situated to take advantage of this growth in terms of winning new customers. Thus this criterion does not indicate collective dominance.
Stagnant or moderate growth on the demand side:	See the criterion above.
Low elasticity of demand:	The Director considers that the own and cross price elasticities of the three material competitors in this market are likely to be large enough such that they are not conducive to a finding of collective dominance.

Homogenous product:	The wholesale services offered in this market are differentiated in terms of speeds and contentions to the extent that they do not resemble a commodity product. This in turn removes one of the potential incentives to collude to avoid price competition in markets. This criterion does not indicate collective dominance in this market.
Similar cost structures:	As the three material competitors in this market are using two very distinct technologies it is unlikely to be the case that the two technologies possess such similar cost structures that would act to disincentivise price competition. Whilst the Director has previously analysed the costs of ADSL provision in detail he has not done so for cable modems to the extent that he can comment in detail about the technologies' relative cost structures.
Similar market shares:	As noted earlier, in excess of 99% of this market is shared between three companies with current shares of: 57%; 24% and 18% (42% combined) - these shares have changed substantially over the last 12 months. With BT's share increasing from 42% in February 2002 and the combined cable share falling from 58%. This growing imbalance in market shares between BT and the cable operators indicates that collective dominance is unlikely.
Lack of technical innovation, mature technology:	This market is currently characterised by significant technological progress. This is inconsistent with collective dominance.
Absence of excess capacity:	Both BT and the cable companies possess considerable existing capacity to grow this market. This makes it more difficult to maintain anti-competitive agreements and is thus inconsistent with collective dominance.
High barriers to entry:	This market is characterised by high barriers to entry as is explained in the single firm SMP assessment. This is consistent with collective dominance.

Lack of countervailing buying power:	The existence of customers with a strong negotiating position, which is exercised to produce a significant impact on competition, will tend to restrict the ability of providers to act independently of their customers. Such power is more likely where a customer accounts for a large proportion of the producer's total output, is well-informed about alternative sources of supply, is able to switch to other suppliers readily at little cost to itself, and where it may even be able to begin producing the relevant product itself. Each of the three material wholesale competitors in this market are likely to remain by far the largest customer of their own wholesale broadband origination services in the short to medium term. Potential customers of these wholesale services are thus unlikely to possess significant countervailing buyer power which could act to undermine the potential existence of collective dominance. Whilst not indicating the existence of collective dominance nor does this criterion negate its potential.
Lack of potential competition:	LLU, and new broadband access network operators are unlikely to pose a significant competitive constraint on the three existing material competitors in this market for the duration of this market review. This fact would be supportive of findings of either single firm or collective dominance.
Various kind of informal or other links between the undertakings concerned:	There is no evidence of any links, be they formal or informal, connecting the UK's cable companies and BT. This criterion does not indicate collective dominance.

Retaliatory mechanisms:	Such mechanisms can deter action that might break collective agreements. An example of such a mechanism would be a credible threat of stronger price competition that would impact unequally upon providers. In this example, a provider that would be likely to suffer more than at least some competitors were an agreement to be broken and retaliatory price competition ensued would be less likely to try to break that agreement. It is possible that such a mechanism could be developed in this market, but there currently exists no clear collective agreement whose mechanism is “on view”. This criterion does not indicate collective dominance.
Lack of or reduced scope for price competition:	This market has seen non-parallel price movements during 2002 as explained in the single firm SMP assessment. This criterion does not indicate collective dominance.

Annex C

List of representations received in response to the Review of the Wholesale Broadband Access Market

AntiCap UK – Campaign for Unlimited Broadband Services

AOL

British Telecom

Colt Telecommunications

Cable & Wireless

Energis

Ericsson

France Telecom

Freeserve

Fixed Alternative Networks

Kingston Communications

MCI

NIACT

Ntl

SACOT

Telewest

Thus

Tiscali

WACT

Annex D

Glossary

ADSL (Asymmetric Digital Subscriber Line): a digital technology that allows the use of a copper line to send a large quantity of data in one direction and a lesser quantity in the other.

Analogue: the direct representation of a waveform, as opposed to digital, which is a binary coded representation.

ATM Service: data services using Asynchronous Transfer Mode technology such as BT's DataStream family of products

Barriers to entry: an additional cost which must be borne by entrants but not by firms already in the industry; or other factors, which enable an incumbent to maintain prices above the competitive level without inducing entry.

Broadband: a service or connection allowing a considerable amount of information to be conveyed. Defined in this document as a bandwidth greater than 256kbit/s.

BT: British Telecommunications plc.

Cable modem: a cable modem is a device that enables a consumer to access the Internet via a cable line

Communications provider: a person who provides an Electronic Communications Network or provides an Electronic Communications Service.

Dial-up Internet access: Internet access that uses a dial-up connection over an analogue or ISDN telephone line.

Digital: the binary coded representation of a waveform, as opposed to analogue, which is the direct representation of a waveform.

Digital Local Exchange (DLE) and Local exchange: the telephone exchange to which customers are directly connected, often via a remote concentrator unit.

Direct Access: the situation where a customer is directly connected to a telecommunications operator's network by a fixed link.

DMSU (Digital Main Switching Unit): a tandem exchange primarily used for connecting calls between DLEs.

DSL (**Digital Subscriber Line):** a family of technologies generically referred to as DSL, or xDSL, capable of transforming ordinary phone lines (also known as "twisted copper pairs") into high-speed digital lines, capable of supporting advanced services such as fast Internet access and video-on-demand. ADSL (Asymmetric Digital Subscriber Line), HDSL (High bit rate Digital Subscriber Line) and VDSL (Very high data rate Digital Subscriber Line) are all variants of xDSL.

DSLAM (Digital Subscriber Loop Access Multiplexer): apparatus sited in the same exchange building as is used to terminate DSL enabled copper loops, which comprises a bank of DSL modems and a multiplexer which combines many customer lines into one data path.

Exchange line: the telephone line that connects the customers' network terminating point to the local serving exchange.

FRIACO (Flat Rate Internet Access Call Origination): the provision of Flat Rate Internet Access Call Origination via a wholesale unmetered Internet access product from BT.

HDSL (High bit rate Digital Subscriber Line): one of the earliest forms of DSL services to be widely used. It is symmetrical, offering the same data rates upstream and downstream. The maximum data rate is however lower than that for ADSL.

Hull Area: 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.

Integrated Services Digital Network (ISDN): a network evolved from the digital PSTN which provides digital exchange lines to customers and 64kbps end to end digital connectivity between them. Two or more 64kbps connections can be combined to provide a higher speed connection, eg 128kbps.

Interconnection: the linking (whether directly or indirectly by physical or logical means, or by a combination of physical or logical means) of one Public Electronic Communications Network to another for the purpose of enabling the persons using one of them to be able:
(a) to communicate with users of the other one; or
(b) to make use of services provided by means of the other one (whether by the provider of that Network or by another person);

Internet connectivity: the ability to access any destination on the Internet from a point of interconnection with an Internet backbone.

IP (Internet Protocol): the packet data protocol used for routing and carriage of messages across the Internet and similar networks.

IP network: a network that uses IP; for example the Internet is a public IP network.

Internet Service Provider (ISP): a company that provides individuals and other companies access to the Internet and other related services.

Kbps (Kilo (thousand) bits per second): a measure of the speed of transfer of digital information.

Kingston: Kingston Communications (Hull) PLC – telephone company which operates in the Hull area.

Leased lines (also known as private circuits): a permanently connected communications link between two premises dedicated to the customers' exclusive use.

Local loop: the access network connection between the customer's premises and the local serving exchange, usually comprised of two copper wires twisted together.

Local loop unbundling (LLU): a process by which an incumbent's exchange lines (local loops) are physically disconnected from it's network and connected to other operators' networks. This enables operators other than the incumbent to use the local loop to provide services directly to customers.

Long Run Incremental Costs (LRIC): The costs caused by the provision of a defined increment of output, taking a long run perspective, assuming that some output is already produced. The 'long run' means the time horizon over which all costs (including capital investment) are variable.

Metered service: a service that is charged according to usage, usually on a pence per minute basis.

Modem: abbreviation of modulate-demodulate, a device that converts a digital signal into analogue for transmission purposes. It also receives analogue transmissions and converts them back to digital.

Narrowband: a service or connection allowing only a limited amount of information to be conveyed, such as for telephony. This compares with broadband which allows a considerable amount of information to be conveyed.

NRAs (National Regulatory Authorities): the body or bodies, legally distinct and functionally independent of the telecommunications organisations, charged

by a Member State with the elaboration of, and supervision of compliance with, telecoms authorisations.

PPCs (Partial Private Circuits): a generic term used to describe a category of private circuits that terminate at a point of connection between two operators' networks. It is therefore the provision of transparent transmission capacity between a customer's premises and a point of connection between the two operators' networks. It may also be termed a part leased line. It includes terminating segments.

PSTN: Public Switched Telephone Network

Return on Capital Employed (ROCE): the ratio of accounting profit to capital employed. The measure of capital employed can be either Historic Cost Accounting (HCA) or Current Cost Accounting (CCA).

Schedule 2 Public Operator: those operators who have rights and obligations to interconnect with each other under Article 4(1) of the Interconnection Directive 97/33EC for the purpose of providing publicly available telecommunication services.

Shared port: a connection, typically on a Network Access Server or telephone exchange, which is shared between a number of wholesale customers (ISPs).

Select Services: a set of supplementary services (including call waiting, call barring, ringback etc.) provided by BT as set out in the BT retail price list.

Service provider: a provider of electronic communications services to third parties whether over its own network or otherwise.

SME: Small and Medium Enterprise.

SMP: The Significant Market Power test is set out in European Directives. It is used by the National Regulatory Authorities (NRA) such as Oftel to identify those operators who must meet additional obligations under the relevant Directive.

Standard service: an interconnection service which BT is required to provide under the current regime.

Substitutability: whether an increase in the price of one product would lead consumers to switch to other competing products or services (demand-side substitutability) or lead producers to switch rapidly into the supply of the good in question (supply-side substitutability).

Synchronous Digital Hierarchy (SDH) – a method of digital transmission where the data is packed in containers which are synchronised in time enabling

relatively simple multiplexing and de-multiplexing at the transmitting and receiving ends.

Terminating segment: is the capacity between a customer's premises, and a point of connection between BT's network and a communication provider's network, which may be located at Tier 1 of BT's SDH network (where an alternative BT network is used then the terminating segment extends up to the nearest node located at the same site as an SDH node).

Unmetered service: a service that is provided on a flat-rate basis, where charges do not vary according to usage, in contrast to metered services

Annex E

Notification

NOTIFICATION UNDER SECTIONS 48 (2) AND 80 OF THE COMMUNICATIONS ACT 2003

Proposals for identifying markets, making market power determinations and the setting of SMP conditions in relation to BT and Kingston

1 The Director General of Telecommunications (the "Director"), in accordance with sections 48(2) and 80 of the Communications Act 2003 (the 'Act') hereby makes the following proposals for identifying markets, making market power determinations and the setting of SMP services conditions by reference to such determinations ("SMP conditions"). (The Director is able to exercise powers under the Act pursuant to section 408 of the Act and Article 3 (1) of the Communications Act 2003 (Commencement No. 1) Order 2003.)

2 The Director is proposing to identify the follo wing markets for the purpose of making market power determinations:

(a) asymmetric broadband origination in the United Kingdom, (excluding the Hull area);

(b) broadband conveyance in the United Kingdom; and

(c) asymmetric broadband origination in the Hull area.

3 The Director is proposing to make market power determinations that the following persons have significant market power:

(a) in relation to the markets set out in paragraphs 2(a) and 2(b) above, BT; and

(b) in relation to the market set out in paragraph 2(c) above, Kingston.

4 The Director is proposing to set SMP conditions on the persons referred to in paragraphs 3(a) and (b) above as set out in Schedules 1 and 2, respectively, to this Notification.

5 The effect of, and the Director's reasons for making, the proposals to identify the markets set out in paragraph 2 above and to make the market power determinations set out in paragraph 3 above are contained in

Chapters 2 and 3 of the explanatory statement published with this Notification.

6 The effect of, and the Director's reasons for making, the proposals to set the SMP conditions set out in Schedules 1 and 2 to this Notification are contained in Chapter 4 of the explanatory statement published with this Notification.

7 In identifying and analysing the markets referred to in paragraph 2 above, and in considering whether to make the proposals set out in this Notification, the Director has, in accordance with section 79 of the Act, 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.

8 The Director considers that the proposed SMP conditions referred to in paragraph 4 above comply with the requirements of sections 45 to 47, 87 and 88 of the Act as appropriate and relevant to each of such SMP conditions.

9 Representations may be made to the Director about any of the proposals set out in this Notification and the accompanying explanatory statement by 6 February 2004

10 Copies of this Notification and the accompanying explanatory statement have been sent to the Secretary of State for Trade and Industry in accordance with sections 50 (1) (a) and 81(1) of the Act, the European Commission, and to the regulatory authorities of every other member State in accordance with sections 50 (3) and 81(3) of the Act.

11 Save for the purposes of paragraph 2 of this Notification and except as otherwise defined in this Notification, words or expressions shall have the same meaning as they have been ascribed in the Act.

12 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.

DAVID ALBERT EDMONDS
DIRECTOR GENERAL OF THE OFFICE OF TELECOMMUNICATIONS

Schedule 1

The conditions proposed to be imposed on BT under sections 45, 87 and 88 of the Communications Act 2003 as a result of the analysis of the asymmetric broadband origination and broadband conveyance markets in which BT has been found to have significant market power

Part 1: Definitions and Interpretation of these conditions

1. These conditions shall apply to the markets for asymmetric broadband origination in the United Kingdom excluding the Hull Area and broadband conveyance in the United Kingdom by the Dominant Provider ("the Markets").

2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the Markets, the following definitions shall apply:

   "Act" means the Communications Act 2003;

   "Access Charge Change Notice" has the meaning given to it in Condition EA4.2;

   "Director" means the Director General of Telecommunications as appointed under section 1 of the Telecommunications Act 1984;

   "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.

   "Reference Offer" means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract;

   "Third Party" means a person;

3. 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 EA1 – Requirement to provide Network Access on reasonable request

EA1.1 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 the Director may from time to time direct.

EA1.2 The provision of Network Access in accordance with Condition EA1.1 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 the Director may from time to time direct.

EA1.3 The Dominant Provider shall comply with any direction the Director may make from time to time under this Condition.

Condition EA2 – Requirement not to unduly discriminate

EA2.1 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.

EA2.2 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 EA3 – Requirement to publish a reference offer

EA3.1 Except in so far as the Director may otherwise consent in writing, the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

EA3.2 Subject to Condition EA3.8 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 the network);

(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;

(j) details of any relevant intellectual property rights;

(k) a dispute resolution procedure to be used between the parties;

(l) details of duration and renegotiation of agreements;

(m) provisions regarding confidentiality of non-public parts of the agreements;

(n) rules of allocation between the parties when supply is limited (for example, for the purpose of co-location or location of masts); and

(o) the standard terms and conditions for the provision of Network Access.

EA3.3 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 Condition EA3.2 (a)-(p)

EA3.4 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 this Condition enters into force.

EA3.5 The Dominant Provider shall update and publish in relation to any amendments or in relation to any further Network Access provided after the date this Condition enters into force.

EA3.6 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 the Director.

EA3.7 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).

EA3.8 The Dominant Provider shall make such modifications to the Reference Offer as the Director may direct from time to time.

EA3.9 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.

EA3.10 The Dominant Provider shall comply with any direction the Director may make from time to time under this Condition.

Condition EA4 – Requirement to notify charges terms and conditions

EA4.1 Except in so far as the Director may otherwise consent in writing, the Dominant Provider shall publish charges, terms and conditions and act in the manner set out below.

EA4.2 Save where otherwise provided in Condition EA6, the Dominant Provider shall send to the Director and to every Third Party with which it has entered into an Access Contract covered by Condition EA1 a written notice of any amendment to the charges, terms and conditions on which it provides Network Access or in relation to any charges, terms and conditions for new Network Access (an "Access Charge Change Notice") not less than 28 days before any such amendment comes into effect.

EA4.3 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 charges, terms and conditions associated with the provision of that Network Access; and

(c) the date on which or the period for which any amendments to charges, terms and conditions will take effect (the "effective date").

EA4.4 The Dominant Provider shall not apply any new charge, term or condition identified in an Access Charge Change Notice before the effective date.

EA4.5 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 the Director 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 EA4.3(a)-(c).

Condition EA5 – Transparency as to quality of service

EA5.1 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 the Director may from time to time direct.

EA5.2 The Dominant Provider shall comply with any direction the Director may make from time to time under this Condition EA5.

Condition EA6 – Requirement to notify technical information

EA6.1 Save where the Director consents otherwise, where the Dominant Provider:

(a) proposes to provide Network Access covered by Condition EA1, 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 EA1 by modifying the terms and conditions listed in Condition EA6.1(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 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.

EA6.2 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; and

(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").

EA6.3 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.

EA6.4 Publication referred to in paragraph EA6.1 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 the Director; and

(c) sending a copy of the Notice to any Third Party at that Third Party's written request, and where the Notice identifies a modification to existing relevant terms and conditions, to every Third Party with which the Dominant Provider has entered into an Access Contract covered by Condition EA1. The provision of such a copy of Notice may be subject to a reasonable charge.

EA7 - Requests for new Network Access

EA7.1 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 EA7.

EA7.2 Such guidelines shall be published within two months of the date that this Condition EA7 enters into force following a consultation with the Director and Third Parties. The Dominant Provider shall keep the guidelines under review and consult with relevant Third Parties and the Director before making any amendments to the guidelines.

EA7.3 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.

EA7.4 On receipt of a written request for new Network Access the Dominant Provider shall ensure that the requirements of this Condition EA7 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.

EA7.5 Within five working days of receipt of a request under paragraph EA7.4, the Dominant Provider shall acknowledge that request in writing.

EA7.6 Within fifteen working days of receipt of a request under paragraph EA7.4 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.

EA7.7 Where the Dominant Provider responds to a request under paragraph EA7.4 in accordance with paragraph EA7.6(a) it shall, within thirty-five working days of receipt of a request under paragraph EA7.4, 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.

EA7.8 Where the Dominant Provider responds to a request under paragraph EA7.4 in accordance with paragraph EA7.6(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 EA7.4, inform the requesting Third Party that a feasibility study is reasonably required and set out its objective reasons for such a study.

EA7.9 Where EA7.8 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 the Director a copy of the feasibility study and shall provide to the requesting Third Party a non-confidential copy of the feasibility study.

EA7.10 The time limit set out in paragraph EA7.9 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 EA7.8, if:

(a) 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 EA7.8; or

(b) the Third Party and the Dominant Provider agree to extend the time limit up to seventy working days.

EA7.11 The time limit set out in paragraph EA7.9 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 EA7.8, if:

(a) the Director agrees; or

(b) the Third Party and the Dominant Provider agree to extend the time limit beyond seventy working days.

EA7.12 Where the Dominant Provider responds to a request under paragraph EA7.4 in accordance with paragraph EA7.6(b) the Dominant Provider shall, within sixty working days of receipt of a request under paragraph EA7.4, 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 the Director a copy of the feasibility study and shall provide to the requesting Third Party a non-confidential copy of the feasibility study.

EA7.13 The time limit set out in paragraph EA.12 above shall be extended up to eighty-five working days of receipt of a request under paragraph EA.7.4, if:

(a) 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 EA7.4; or

(b) the Third Party and the Dominant Provider agree to extend the time limit up to eighty-five working days.

EA7.14 The time limit set out in paragraph EA.12 above shall be extended beyond eighty five working days of receipt of a request under paragraph EA7.4, if:

(a) the Director agrees; or

(b) the Third Party and the Dominant Provider agree to extend the time limit beyond eighty-five working days.

EA7.15 Within two months of the date that this Condition EA7 enters info force the Dominant Provider shall provide the Director with a description of the processes it has put in place to ensure compliance with this Condition EA7. It shall keep those processes under review to ensure that they remain adequate for that purpose.

EA7.16 The Dominant Provider shall comply with any direction the Director may make from time to time under this Condition EA7.

Schedule 2

The conditions proposed to be imposed on Kingston under sections 45, 87 and 88 of the Communications Act 2003 as a result of the analysis of the asymmetric broadband origination market in which Kingston 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 asymmetric broadband origination in the Hull Area by the Dominant Provider ("the Market").

2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the Market the following definitions shall apply:

   "Act" means the Communications Act 2003;

   "Access Charge Change Notice" has the meaning given to it in Condition EB4.2;

   "Director" means the Director General of Telecommunications as appointed under section 1 of the Telecommunications Act 1984;

   "Dominant Provider" means Kingston Communications plc whose registered company number is 2150618 and any Kingston Communications 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.

   "Reference Offer" means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract;

   "Third Party" means a person.

3. 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 EB1 – Requirement to provide Network Access on reasonable request

EB1.1 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 the Director may from time to time direct.

EB1.2 The provision of Network Access in accordance with Condition EB1.1 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 the Director may from time to time direct.

EB1.3 The Dominant Provider shall comply with any direction the Director may make from time to time under this Condition.

Condition EB2 – Requirement not to unduly discriminate

EB2.1 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.

EB2.2 In this Condition the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent a business carried on by it so as to place at a competitive disadvantage persons competing with that business.

Condition EB3 – Requirement to publish a reference offer

EB3.1 Except in so far as the Director may otherwise consent in writing, the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

EB3.2 Subject to Condition EB3.8 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 the network);

(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 traffic and network management;

(i) 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;

(j) details of measures to ensure compliance with requirements for network integrity;

(k) details of any relevant intellectual property rights;

(l) a dispute resolution procedure to be used between the parties;

(m) details of duration and renegotiation of agreements;

(n) provisions regarding confidentiality of non-public parts of the agreements;

(o) rules of allocation between the parties when supply is limited (for example, for the purpose of co-location or location of masts); and

(p) the standard terms and conditions for the provision of Network Access.

EB3.3 To the extent that the Dominant Provider provides to itself Network Access that:

(j) is the same, similar or equivalent to that provided to any other person; or

(iii) 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 Condition EA3.2 (a)-(p)

EB3.4 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 this Condition enters into force.

EB3.5 The Dominant Provider shall update and publish in relation to any amendments or in relation to any further Network Access provided after the date this Condition enters into force.

EB3.6 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 the Director.

EB3.7 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).

EB3.8 The Dominant Provider shall make such modifications to the Reference Offer as the Director may direct from time to time.

EB3.9 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.

EB3.10 The Dominant Provider shall comply with any direction the Director may make from time to time under this Condition.

Condition EB4 – Requirement to notify charges, terms and conditions

EB4.1 Except in so far as the Director may otherwise consent in writing, the Dominant Provider shall publish charges, terms and conditions and act in the manner set out below.

EB4.2 Save where otherwise provided in Condition EB5, the Dominant Provider shall send to the Director and to every Third Party with which it has entered into an Access Contract covered by Condition EB1 a written notice of any amendment to the charges, terms and conditions on which it provides Network Access or in relation to any charges, terms and conditions for new Network Access (an "Access Charge Change Notice") not less than 28 days before any such amendment comes into effect.

EB4.3 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 charges, terms and conditions associated with the provision of that Network Access; and

(c) the date on which or the period for which any amendments to charges, terms and conditions will take effect (the "effective date").

EB4.4 The Dominant Provider shall not apply any new charge, term or condition identified in an Access Charge Change Notice before the effective date.

EB4.5 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

(iii) 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 the Director 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 EB4.3(a)-(c).

Condition EB5 – Requirement to notify technical information

EB5.1 Save where the Director consents otherwise, where the Dominant Provider:

(a) proposes to provide Network Access covered by Condition EB1, 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 EB1 by modifying the terms and conditions listed in Condition EB5.1(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 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.

EB5.2 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; and

(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").

EB5.3 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.

EB5.4 Publication referred to in paragraph EB5.1 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 the Director; and

(c) sending a copy of the Notice to any Third Party at that Third Party's written request, and where the Notice identifies a modification to existing relevant terms and conditions, to every Third Party with which the Dominant Provider has entered into an Access Contract covered by Condition EB1. The provision of such a copy of Notice may be subject to a reasonable charge.

Annex F

Notification of proposals under Section 49 of the Communications Act 2003

Proposal for making a Direction under proposed Condition EA1 in Schedule 1 to the Notification at Annex E to the explanatory statement hereto to be imposed on British Telecommunications plc ('BT') as a result of the market power determinations proposed to be made by the Director General of Telecommunications that BT has significant market power in the markets for asymmetric broadband origination in the UK (excluding Hull) and the broadband conveyance market in the UK.

1. The Director General of Telecommunications hereby makes, in accordance with section 49 of the Communications Act 2003 (the 'Act'), the following proposal for a Direction to be given under proposed Condition EA1 in Schedule 1 to the Notification at Annex E to the accompanying explanatory statement hereto.

2. The draft Direction is set out in the Schedule to this notification.

3. The effect of the draft Direction, and the reasons for making the proposal, are set out in Chapter 4 of the accompanying explanatory statement hereto.

4. Representations may be made to the Director about the proposed draft Direction by 6 February 2004.

5. In accordance with section 50 of the Communications Act 2003, copies of this notification have been sent to the Secretary of State, the European Commission and to the regulatory authorities of every other member State.

[Signature]
[date of signature]
DAVID ALBERT EDMONDS
DIRECTOR GENERAL OF THE OFFICE OF TELECOMMUNICATIONS

Schedule

[*Draft*] Direction under section 49 of the Communications Act 2003 and Condition EA1.1 imposed on British Telecommunications plc ("BT") as a result of the market power determinations made by the Director General of Telecommunications that BT has significant market power in the asymmetric broadband origination and broadband conveyance markets in the United Kingdom (excluding the Hull Area)

WHEREAS:

(A) as a result of a market analysis carried out by the Director, he proposed on 28 April 2003 and on 16 December 2003 in accordance with sections 48(2) and 80 of the Act that British Telecommunications plc ('BT') has significant market power in the asymmetric broadband origination (excluding the Hull Area) and broadband conveyance markets in the United Kingdom;

(B) the Director is able to exercise powers under the Act pursuant to section 408 of the Act and Article 3(1) of the Communications Act 2003 (Commencement No.1) Order 2003, until Ofcom assumes those powers at a later date

(C) the Director having considered every representation duly made, and thereafter on [*date of final notification*] pursuant to sections 48(1) and 79 of the Act by way of publication of a Notification identified the relevant services markets, made market power determinations to the effect referred to in recital (A) above and set certain SMP conditions on British Telecommunications plc to take effect [*date coming into force*], such as Condition EA1;

(D) this Direction concerns matters to which Condition EA1 relates;

(E) for the reasons set out in Chapter 4 of the explanatory statement accompanying this Direction, the Director 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.

(F) for the reasons set out in Chapter 4 of the explanatory statement accompanying this Direction, the Director is satisfied that he has acted in accordance with the relevant duties set out in section 4 of the Act;

(G) on 16 December 2003 the Director published a notification of the proposed Direction in accordance with section 49 of the Act;

(H) the Director has considered every representation about the proposed Direction duly made to him; and

Therefore, pursuant to section 49 of the Act and Condition EA1 in Schedule 1 to the Notification, the Director gives the following Direction:

1. The Dominant Provider shall provide Basic Services as specified in Annex 1 to this Direction to every Third Party who reasonably requests in writing such Basic Services.

2. The Dominant Provider shall provide Additional Functionality as specified in Annex 2 to this Direction to every Third Party who reasonably requests in writing such Additional Functionality.

3. The provision of Basic Services and Additional Functionality covered by paragraphs 1 and 2 above shall occur as soon as reasonably practicable and shall be provided on fair and reasonable charges, terms and conditions.

4. The Annexes to this Direction form part of the Direction.

5. For the purpose of interpreting this Direction the following definitions shall apply:

   "Act" means the Communications Act 2003;

   "Additional Functionality" means Scaleable VPs, VP Sharing Limits, Alternative ATM Service Catalogues (VBR-rt, CBR) or any of them;

   "ADSL Enabled EUDP" means an EUDP which uses asymmetric DSL, where the bit rate of transmission differs for traffic sent from the End User (upstream) and for traffic sent to the End User (downstream);

   "ATM Backhaul" means that part of the Virtual Path between the DSLAM and the first ATM Switch to which that DSLAM is connected within the network;

   "ATM Conveyance" means that part of the Virtual Path between two or more ATM switches;

"Basic Services" means an ADSL Enabled EUDP and ATM Backhaul (Service A); and/or an ADSL Enabled EUDP, ATM Backhaul and ATM Conveyance (Service B) as required by a Third Party;

"CBR" means Constant Bit Rate;

"Director" means the Director General of Telecommunications as appointed under section 1 of the Telecommunications Act 1984;

"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;

"DSL" means Digital Subscriber Line;

"DSLAM" means Digital Subscriber Line Access Multiplexer;

"EUDP" means End User Data Path – that part of the network which is the DSL connection between the End User and the DSLAM. This includes the situation: where the Dominant Provider supplies and installs the End User modem; and where the supply and installation of the End User modem is not carried out by the Dominant Provider;

"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;

"Notification" means the notification of confirmation of proposals under sections 49 (2) and 80 of the Communications Act 2003 for identifying inter alia the markets for asymmetric broadband origination in the United Kingdom (except the Hull Area) and broadband conveyance in the United Kingdom for the purpose of making proposed market power determinations that the Dominant Provider has significant market power in relation to those markets as annexed to the consultation document accompanying this Direction;

"Scaleable VP" means a Virtual Path whose capacity can be changed upon request without the need for the agreement to provide that Virtual Path to be terminated. The minimum capacity available shall be 1 Mbit/s and the unit of change shall be 1 Mbit/s or multiples thereof;

"Third Party" means a person;

"VBR-nrt" means Variable Bite Rate – non-real time;

"VBR-rt" means Variable Bite Rate – real time;

"Virtual Channel, VC" means an established data channel from the End User to the point of Network Access with a Communications Provider's network;

"Virtual Path, VP" means an established path from the DSLAM through the network to the point of Network Access with a Communications Provider's network;

"VP Sharing Limit" means a specification of the maximum number of EUDPs that can share a given VP. This is likely to be a function of the capacity of the VP;

7. Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them in paragraphs 1 and 2 above and otherwise any word or expression shall have the same meaning as it has in the Notification (including in the Annexes) and otherwise any word or expression shall have the same meaning as it has in the Act.

8. For the purpose of interpreting this Direction:

   (a) headings and titles shall be disregarded; and

   (b) the Interpretation Act 1978 shall apply as if this Direction were an Act of Parliament.

9. This Direction shall take effect on the day it is published.

[Signature]
[Date]

DAVID ALBERT EDMONDS
DIRECTOR GENERAL OF THE OFFICE OF TELECOMMUNICATIONS

Annex 1

Basic Services

Basic Services shall be composed of

- An ADSL Enabled EUDP and ATM Backhaul (Service A); and/or
- An ADSL Enabled EUDP, ATM Backhaul and ATM Conveyance (Service B),

as required by the Third Party

ADSL Enabled EUDP

ADSL Enabled EUDPs shall be available with the data rates identified in Table 1. The data rates listed in Table 1 are the ATM cell rate, including headers.

Table 1: ADSL Enabled EUDP data rate options

EUDP Option	**Upstream speed (kbit/s)**	**Downstream speed (kbit/s)**
Home 500	64-288 (rate adaptive)	576
Office 500	64-288 (rate adaptive)	576
Office 1000	288	1152
Office 2000	288	2272

ATM Backhaul

ATM Backhaul shall be available with a capacity of 4 Mbit/s and a VBR-nrt class of service

ATM Conveyance

ATM Conveyance shall be available with a capacity of 4 Mbit/s and a VBR-nrt class of service

VP Sharing Limit

The maximum number of EUDPs that are permitted to share a single VP shall be 32 or 150. The limit applicable in each case shall be selected by the Third Party at the time of ordering.

Annex 2

Additional Functionality

Scalable VPs

The capacity of the VP shall be changeable upon request without the need for an agreement to provide that VP to be terminated. The minimum capacity available shall be 1 Mbit/s and the unit of change shall be 1 Mbit/s or multiples thereof.

VP Sharing Limits

In addition to, or as a replacement of, the existing VP sharing limits (32 and 150) more flexible VP sharing limits shall be made available. This sharing limit may be a function of the VP capacity and may include provisions for pre-commitments.

Alternative ATM Service Categories

In addition to the ATM service category provided with the basic services (VBR-nrt), VBR-rt and CBR service categories shall also be made available. The ATM service categories are applicable to both the virtual channel (VC) and virtual path (VP).