

## Section 7

# Market power assessment

## Introduction

- 7.1 As discussed in Sections 3 to 6, market definition is not an end in itself. The market definition exercise is carried out in order to identify the competitive forces that constrain an operator or operators' from acting to an appreciable extent independently of competitors, customers and consumers. If Ofcom considers no network provider has SMP either individually or collectively, the markets will be found to be effectively competitive. This section of the document examines whether any operator or operators hold Significant Market Power ('SMP') in certain of the markets defined above.
- 7.2 This section first examines markets in the UK excluding the Hull area.
- 7.3 This section commences with an analysis of whether there is SMP in the market for low bandwidth traditional interface retail leased lines (including analogue circuits and digital circuits at bandwidths up to and including 8Mbit/s) in the UK excluding Hull area. This market is no longer a market that the EC specifically recommends as being susceptible to ex ante regulation.<sup>91</sup> However (consistent with the EC's Recommendation), Ofcom's view is that national circumstances mean that this market is still susceptible to ex ante regulation in the United Kingdom.<sup>92</sup>
- 7.4 The discussion then proceeds to consider whether SMP exists in the following wholesale markets:
- low bandwidth traditional interface symmetric broadband origination up to and including 8Mbit/s in the UK (excluding the Hull area);
  - high bandwidth traditional interface symmetric broadband origination above 8Mbit/s up to and including 45Mbit/s in the UK (excluding CELA and the Hull area);
  - high bandwidth traditional interface symmetric broadband origination above 8Mbit/s up to and including 45Mbit/s in the CELA;
  - very high bandwidth traditional interface symmetric broadband origination over 45 Mbit/s in the UK (excluding the Hull area);
  - low bandwidth alternative interface symmetric broadband origination up to and including 1Gbit/s in the UK excluding the Hull area);
  - high bandwidth alternative interface symmetric broadband origination over 1Gbit/s in the UK (excluding the Hull area);
  - In the UK excluding the Hull area: the market for trunk segments. This is also a market that the EC no longer specifically recommends as being susceptible to ex ante regulation. The discussion in Section 8 examines why national

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<sup>91</sup> See EC Recommendation on relevant product and service markets, op cit.

<sup>92</sup> See discussion in Section 8.

circumstances in the UK, however, do require that this market be subject to ex ante regulation.

7.5 The analysis then proceeds to examine the following markets in the Hull area:

- low bandwidth traditional interface retail leased lines including analogue circuits and digital circuits at bandwidths up to and including 8Mbit/s;
- low bandwidth traditional interface symmetric broadband origination up to and including 8Mbit/s in the Hull area;
- high bandwidth traditional interface symmetric broadband origination above 8Mbit/s up to and including 45Mbit/s in the Hull area;
- very high bandwidth traditional interface symmetric broadband origination over 45 Mbit/s in the Hull area;
- low bandwidth alternative interface symmetric broadband origination up to and including 1Gbit/s in the Hull area; and
- high bandwidth alternative interface symmetric broadband origination over 1Gbit/s in the Hull area.

### Ofcom's power to make SMP determinations

7.6 Sections 45, 46 and 78 *et seq.* of the Communications Act ('the Act') grant Ofcom the power under certain circumstances to set conditions binding Communication Providers, namely persons who provide an electronic communications network and/or an electronic communications service. Specifically, Section 46(7) states that SMP services conditions may be imposed on a particular person who is either a Communications Provider or a person who makes associated facilities available, and who has been determined to have SMP in a "services market" (i.e. a specific market for electronic communications networks, electronic communications services or associated facilities).

7.7 Accordingly, having identified the relevant product and geographic markets, Ofcom is required to analyse each market in order to assess whether any person or persons have SMP as defined in Section 78 of the Act (Article 14 of the Framework Directive<sup>93</sup>).

### Definition of SMP

7.8 The Directives and Section 78 of the Act make clear that SMP should be assessed using the same methodologies that are used in competition law. 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."*

<sup>93</sup> Directive 2002/21/EC on a common regulatory framework for electronic communications networks and services (the "Framework Directive").

7.9 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.”*

7.10 Therefore, one or more undertakings may be designated as having SMP in a market (single or collective dominance) where an undertaking, or undertakings, enjoy(s) a position of dominance in that market. Also, an undertaking may be designated as having SMP where it could leverage its market power from a closely related market into the relevant market, thereby strengthening its market power in the relevant market.

### **The criteria for assessing SMP**

7.11 In assessing whether an undertaking has SMP, Ofcom has taken the utmost account of the EC’s “Guidelines on market analysis and the assessment of SMP” (‘SMP Guidelines’) as it is required to do under Section 79 of the Act. Ofcom has also considered the application of the equivalent Oftel Guidelines referred to in Section 2 above.<sup>94</sup>

7.12 The SMP Guidelines state:

*“NRAs will assess whether the competition is effective. A finding that effective competition exists on a relevant market is equivalent to a finding that no operator enjoys a single or joint dominant position on that market.”<sup>95</sup>*

7.13 The SMP Guidelines go on to state:

*“NRAs will conduct a forward looking structural evaluation of the relevant market, based on existing market conditions. NRAs should determine whether the market is prospectively competitive, and thus whether any lack of effective competition is durable, by taking into account expected or foreseeable market developments over the course of a reasonable period. The actual period used should reflect the specific characteristics of the market and the expected timing for the next review of the relevant market by the NRA. NRAs should take past data into account in their analysis when such data are relevant to the developments in that market in the foreseeable future.”<sup>96</sup>*

7.14 In the SMP Guidelines, the EC discusses market shares as being an indicator of market power:

*“...Market shares are often used as a proxy for market power. Although a high market share alone is not sufficient to establish the possession of significant market power (dominance), it is unlikely*

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<sup>94</sup> [http://www.ofcom.org.uk/static/archive/oftel/publications/about\\_oftel/2002/smpg0802.htm](http://www.ofcom.org.uk/static/archive/oftel/publications/about_oftel/2002/smpg0802.htm)

<sup>95</sup> Paragraph 19

<sup>96</sup> Paragraph 20

*that a firm without a significant share of the relevant market would be in a dominant position. Thus, undertakings with market shares of no more than 25 % are not likely to enjoy a (single) dominant position on the market concerned. In the Commission's decision making practice, single dominance concerns normally arise in the case of undertakings with market shares of over 40 %, although the Commission may in some cases have concerns about dominance even with lower market shares, as dominance may occur without the existence of a large market share. According to established case-law, very large market shares — in excess of 50 % — are in themselves, save in exceptional circumstances, evidence of the existence of a dominant position...<sup>97</sup>*

7.15 However, the EC also notes that:

*“It is important to stress that the existence of a dominant position cannot be established on the sole basis of large market shares. As mentioned above, the existence of high market shares simply means that the operator concerned might be in a dominant position. Therefore, NRAs should undertake a thorough and overall analysis of the economic characteristics of the relevant market before coming to a conclusion as to the existence of significant market power. In that regard, the following criteria can also be used to measure the power of an undertaking to behave to an appreciable extent independently of its competitors, customers and consumers. These criteria include amongst others:*

- *overall size of the undertaking,*
- *control of infrastructure not easily duplicated,*
- *technological advantages or superiority,*
- *absence of or low countervailing buying power,*
- *easy or privileged access to capital markets/financial resources,*
- *product/services diversification (e.g. bundled products or services),*
- *economies of scale,*
- *economies of scope,*
- *vertical integration,*
- *a highly developed distribution and sales network,*
- *absence of potential competition,*
- *barriers to expansion.*

*A dominant position can derive from a combination of the above criteria, which taken separately may not necessarily be determinative.<sup>98</sup>*

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<sup>97</sup> Paragraph 75

<sup>98</sup> Paragraphs 78-79

- 7.16 The European Regulators' Group ("ERG") has issued a working paper on SMP<sup>99</sup> ('the ERG SMP Position') that builds upon the SMP Guidelines. In this paper the following further criteria are explicitly considered:
- excessive pricing,
  - ease of market entry,
  - cost and barriers to switching.
- 7.17 The ERG also considers that analysis of the following factors may provide grounds for further and more detailed analysis of a particular market:
- evidence of previous anti competitive behaviour,
  - active competition on other parameters,
  - existence of standards/conventions,
  - customers' ability to access and use information,
  - price trends and pricing behaviour; and
  - international benchmarking.
- 7.18 This section of the consultation document considers the relevance of all these criteria when assessing SMP in the relevant markets.

## Methodology

- 7.19 When assessing whether SMP exists in a particular market, it is appropriate to take account of any existing or proposed regulation of a service *upstream* of the market that is being considered. It is also appropriate to take into account regulatory obligations that exist independently of an SMP finding in the market under consideration, but which impact on the SMP finding in the markets under consideration. The existence of such regulation needs to be considered to capture the competitive constraints in the market under investigation.
- 7.20 Notwithstanding this, the mere fact that regulation has been put in place or is proposed in an adjacent market does not automatically mean that this regulation is effective in preventing the exercise of SMP in the market in which it has been imposed. This is particularly the case with respect to regulation that is proposed but which has not yet been put in place. Such regulation needs to be fully implemented and there needs to be compliance with this regulation for a reasonable period of time before it can be assumed that it has dealt with upstream bottlenecks that affect competition in downstream markets.
- 7.21 Accordingly, for the retail SMP assessment Ofcom has assessed SMP in the presence of the proposed regulatory remedies at the corresponding wholesale level, where BT or any other operator have been found to have SMP.
- 7.22 For the wholesale SMP assessment, it is relevant to take into account the existence of cost-based unbundled local loops (as required under the LLU Regulation 2887/2000), which can be used to assist entry into some of the wholesale leased lines markets defined below.

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<sup>99</sup> "Revised ERG Working paper on the SMP concept for the new regulatory framework" September 2005 ([http://erg.eu.int/doc/publications/public\\_hearing\\_concept\\_smp/erg\\_03\\_09rev3\\_smp\\_common\\_concept.pdf](http://erg.eu.int/doc/publications/public_hearing_concept_smp/erg_03_09rev3_smp_common_concept.pdf))

- 7.23 It is also important to conduct both retail and wholesale market analyses against the backdrop of the BT Undertakings decided under Telecommunications Strategic Review ('the Undertakings').<sup>100</sup> The Undertakings were designed to ensure that BT does not discriminate between its own downstream divisions and competitors when offering access services. They require BT to apply Equality of Input (EoI) principles to particular access services.
- 7.24 In so far as the leased line market review is concerned, these Undertakings are principally relevant to Wholesale Ethernet services (i.e. WES/BES), which are to be provided on an EoI basis. Bt is required to provide the following services on an EoI basis:
- Current access services: WES and BES services; and
  - Future access services: Separate access and backhaul services are to be introduced, to make it easier for other CPs to aggregate leased lines and potentially broadband traffic at BT local exchanges. This includes WES Access, WES Backhaul and WEES products.<sup>101</sup>
- 7.25 With respect to the TISBO market, the Undertakings commit BT to make available new TI Local Access and Backhaul Products to any Communications Provider within a reasonable period of time.<sup>102</sup> TISBO services, however, do not have to be provided on an EoI basis.
- 7.26 The assessment of SMP in a particular market should assume that no regulatory intervention currently or potentially exists *in that same market*. This is because the very purpose of the SMP analysis is to determine whether any regulation is appropriate in that market. Therefore, assessing SMP in this market requires consideration of a hypothetical market where neither regulation nor the threat of regulation exists.
- 7.27 Having set out our approach to market definition, the discussion now proceeds to consider the markets identified above, specifically considering whether BT, KCOM or any other operator possesses single dominance or whether any operators are collectively dominant in the relevant retail and wholesale leased lines and symmetric broadband origination markets.
- 7.28 The SMP assessment is based on the most appropriate and current available information. This evidence pertains directly to the retail and wholesale markets under examination. In the case of wholesale markets, it is also based on information in relation to the corresponding retail markets where this can also inform the wholesale analysis. For example, Ofcom has estimated market shares at the wholesale level based on information available at both the retail and wholesale levels.
- 7.29 Ofcom will make its final determination of SMP in its final statement due for publication later in 2008.

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<sup>100</sup> The Final statement of BT's Undertakings, published in September 2006, can be found at: [http://www.ofcom.org.uk/static/telecoms\\_review/final\\_statement.htm](http://www.ofcom.org.uk/static/telecoms_review/final_statement.htm)

<sup>101</sup> section 3.1

<sup>102</sup> section 5.5

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

7.30 The economic assessment of SMP presented below is carried out within the context of this market review. It is without prejudice to any economic analysis that may be carried out in relation to any investigation or decision pursuant to the Competition Act 1998 (relating to the application of the Chapter I or II prohibitions or Article 81 or 82 of the EC Treaty) or the Enterprise Act 2002.

7.31 That this is the case is recognised by Article 15(1) of the Framework Directive, which states:

*"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..."*

7.32 Similarly, according to the EC's SMP Guidelines:

*Paragraph 25: "...Article 15(1) of the Framework Directive makes clear that the markets 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 at paragraph 37.)*

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

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

7.33 In addition, it is up to all Communications Providers to ensure that they comply with their legal obligations under all the laws applicable to the carrying out of their businesses. It is incumbent upon all 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 applying to their conduct under the Competition Act 1998 (either relating to the Chapter I or II prohibitions or Article 81 or 82 of the EC Treaty) or Enterprise Act 2002.

7.34 Any finding by Ofcom that BT has been determined as having SMP in a relevant market might have an impact on certain obligations of BT under its Enterprise Act Undertakings. In particular, where such obligations are set out in relation to the provision of "SMP Products" they are, by definition, linked to BT having been determined by Ofcom as having SMP in the relevant market. Whilst the obligation to apply EOI to certain products listed in sections 3.1.1 and 3.1.2 of BT's Undertakings (including WES/BES) is not dependent on an SMP finding, the

obligation to provide certain products out of Openreach pursuant to sections 5.3 and 5.4 (including WES/BES) does presuppose such a finding.

*Question 7: Do stakeholders agree with our proposed approach to SMP assessment?*

## Summary list of SMP designations

- 7.35 Having assessed whether any operator either individually or jointly possesses SMP in the relevant markets, Ofcom concludes that at the retail level:
- BT possesses SMP in the market for low bandwidth traditional interface retail leased lines (including analogue circuits and digital circuits at bandwidths up to and including 8Mbit/s) in the UK excluding Hull area.;
  - KCOM does not possess SMP in the market for low bandwidth traditional interface retail leased lines (including analogue circuits and digital circuits at bandwidths up to and including 8Mbit/s) in the Hull area.
- 7.36 Ofcom concludes that at the wholesale level:
- BT possesses SMP in the low bandwidth traditional interface symmetric broadband origination up to and including 8Mbit/s in the UK (excluding the Hull area);
  - BT possesses SMP in the high bandwidth traditional interface symmetric broadband origination above 8Mbit/s up to and including 45Mbit/s in the UK (excluding CELA and the Hull area);
  - No operator possesses SMP in high bandwidth traditional interface symmetric broadband origination above 8Mbit/s up to and including 45Mbit/s in the CELA;
  - No operator possesses SMP in the very high bandwidth traditional interface symmetric broadband origination over 45 Mbit/s in the UK (excluding the Hull area);
  - BT possesses SMP in the low bandwidth alternative interface symmetric broadband origination up to and including 1Gbit/s in the UK excluding the Hull area) ;
  - No operator possesses SMP in the high bandwidth alternative interface symmetric broadband origination over 1Gbit/s in the UK (excluding the Hull area); and
  - BT possesses SMP in the national trunk market.
- 7.37 In the Hull area:
- KCOM possesses SMP in the low bandwidth traditional interface symmetric broadband origination up to and including 8Mbit/s;
  - KCOM possesses SMP in the high bandwidth traditional interface symmetric broadband origination above 8Mbit/s up to and including 45Mbit/s;



- KCOM possesses SMP in the very high bandwidth traditional interface symmetric broadband origination over 45 Mbit/s;
- KCOM possesses SMP in the low bandwidth alternative interface symmetric broadband origination up to and including 1Gbit/s; and
- KCOM possesses SMP in the high bandwidth alternative interface symmetric broadband origination over 1Gbit/s.

### **Market for low bandwidth traditional interface retail leased lines (including analogue circuits and digital circuits at bandwidths up to and including 8Mbit/s) in the UK (outside of Hull area)**

- 7.38 Using the SMP criteria set out above, Ofcom has analysed whether there is SMP in the market for retail low bandwidth traditional interface leased lines.
- 7.39 As explained above, this market is assessed on the basis that there is no SMP regulation at the retail level. However, the assessment does take into account the remedies that are proposed in this market review in the corresponding upstream wholesale markets. These are the low bandwidth traditional interface symmetric broadband origination market and the national market for trunk services.
- 7.40 Section 8 sets out the precise regulation that Ofcom proposes to impose at the wholesale level. This includes:
- A requirement on BT to provide network access (including new network access) on reasonable request and to do in relation to both wholesale traditional interface symmetric broadband origination and trunk services at cost-oriented prices;
  - A requirement on BT not to unduly discriminate against downstream competitors in relation to matters connected with the provision of network access;
  - More specific obligations in relation to matters such as:
    - o the requirement (i) to maintain a cost accounting system which will enable BT to demonstrate that its cost orientation obligations have been met and (ii) to keep separate accounts for certain origination and trunk services; and
    - o The requirement to publish a reference offer; requirements to provide advance notification of changes to prices, terms and conditions in relation to existing services and a similar condition in relation to the provision of new services; quality-of-service obligations on BT, including the introduction of a new regime of KPIs, SLAs and SLGs to give effect to that regime; and
  - Charge controls in respect of certain wholesale services that are subject to cost-orientation.

#### **Low bandwidth traditional interface retail market: summary of conclusions**

- 7.41 Our assessment of the retail market for low bandwidth traditional interface leased lines points strongly to BT continuing to have SMP in this market. This conclusion is based in part on BT's high and sticky share of this market (despite wholesale and some retail regulation having been in place for several years) and the fact that BT's position in the upstream market continues to enable it to operate at an advantage in the downstream market vis-à-vis its competitors.
- 7.42 More specifically, Ofcom view that BT has SMP in this market is based on the following considerations:
- BT's high market shares;

- BT's apparent high profitability, and what appears to be its high pricing;
- Control of infrastructure not easily duplicated;
- Economies of scale and scope;
- Vertical integration;
- A lack of countervailing buyer power;
- Barriers to entry and expansion;
- Absence of potential competition;
- Evidence of previous anti-competitive behaviour.

7.43 As is clear from the discussion below, impediments to competition largely arise as a result of upstream bottlenecks. Impediments to competition that arise solely at the retail level are much less significant. This implies that once Ofcom's concerns in regard to BT's position in the upstream market have been fully addressed, it may be possible to de-regulate this market.

7.44 The analysis below proceeds to examine the SMP criteria in depth, first analysing quantitative information on market shares and profitability measures, before proceeding to review the qualitative SMP criteria.

#### **Quantitative information criteria: market shares**

7.45 Market shares may be assessed by volume or by revenue (value) of sales. Volume shares are usually used in the case of homogenous products, and revenue shares are usually used when products are differentiated.

7.46 The EC Guidelines state that it is for NRAs to decide whether volume or revenue market shares are most appropriate. The EC Guidelines state that it may be more useful to measure market shares for leased lines by revenue to take into account the different types of leased lines that may operate in a market. Specifically, Paragraph 77 of the Guidelines states:

*“As the Commission has indicated, the mere number of leased lines termination points does not take into account the different types of leased lines that are available on the market – ranging from analogue voice-quality to high-speed digital leased lines, short distance to long distance international leased lines. Of the two criteria, leased lines revenues may be more transparent and less complicated to measure.”*

7.47 Ofcom considers that market shares assessed on the basis of revenue are likely to be the most suitable measure in this market. However, we have not been able to calculate robust revenue market shares. Although we sought revenue data from CPs, the data provided were incomplete and were provided at an insufficiently granular level for us to be able to compute market shares corresponding to the

markets that we have defined. Further, different CPs collected revenue in an inconsistent manner, which had the result of distorting players' market shares.<sup>103</sup>

- 7.48 Therefore, we have focused on volume shares. Table 16 below sets out BT's volume share of the market in 2006.<sup>104</sup> BT's share of the market is 80%, which is marginally higher than the 78% volume share BT was found to have in 2002/03. BT is ten times larger than the next biggest player in the market, C&W. The rest of the market is comprised of various players with very small shares.

**Table 16: Market shares for low bandwidth traditional interface retail leased lines in the UK (excluding the Hull area) (2006)**

	Share (%)
BT	80
C&W	8
Others (no other CP had >3%)	12

Source: CP data, Ofcom

- 7.49 BT's volume share in the retail low bandwidth traditional interface leased line market substantially exceeds the threshold of 40% that the SMP Guidelines state normally raise concerns about dominance, and the 50% share that the SMP Guidelines consider normally create a presumption of SMP.
- 7.50 As the volumes shares presented above do not differentiate between high and low-value products within our product market, they may bias BT's share upwards. Specifically, as BT has a relatively high share of low-value services within the product market (i.e. it has a higher share of analogue lines than it does of digital lines) the 80% market share may overstate BT's 'true' position in the market. We have dealt with this issue by presenting below estimates of BT's share of individual services within the product market. While this shows that BT's share of analogue services is relatively high, its share of some of the higher value (i.e. higher bandwidth) digital leased lines is also high. Overall, these figures imply that BT has SMP but (when taken together with some of the trend analysis set out in Annex 6)<sup>105</sup> may suggest that BT's share of some of the higher growth services within the market may fall in the future, implying that its overall share of the market will also fall in the future.

**Table 17: BT's market shares for individual services within the product market (2006)**

	BT share
Analogue	99%
Digital SDH <2Mbit/s	50%
Digital SDH 2 to 8Mbit/s	89%

Source: CP data, Ofcom

<sup>103</sup> The data available suggests that BT's revenue share of the market ranged from 55% to 60% in 2006. The body of the text sets out why there are doubts about the reliance that should be placed on these figures.

<sup>104</sup> 2006 refers to the calendar year rather than the financial year. Unless otherwise specified, this is the case for all market shares presented.

<sup>105</sup> See in particular the graphs on retail volume trends for low bandwidths services.

- 7.51 In conclusion, BT's high market share indicates that BT presently has SMP in the market for retail low bandwidth leased lines. The fact that this high market share has persisted and in fact marginally risen since the last review (despite the presence of both wholesale and retail regulation) suggests that BT's SMP is likely to persist for the duration of the current market review. The following sections examine whether there are any other factors which indicate that this view is not reasonable.

### **Quantitative information: Excessive pricing**

- 7.52 SMP in the market for low bandwidth retail leased lines may be indicated by prices which are out of line with costs, and which are not trending towards costs. There are various ways of analysing whether this is the case, examined below.

#### BT's Returns in the retail leased line market

- 7.53 Profit levels which are persistently and substantially above the cost of capital suggest that a firm may have SMP.

#### *ROCE*

- 7.54 Profits levels can be assessed by various different measures, of which the most commonly used by economic regulators and competition authorities is the return on capital employed (ROCE). An advantage of the ROCE is that there is a benchmark against which it can readily be compared in order to assess whether profits and prices might be excessive. This benchmark is the activity's weighted average cost of capital ("WACC"), which is the level that would be required by investors to compensate them for any risk incurred by investing in the activity. Profits which are significantly and persistently above the WACC may indicate that the firm has SMP.
- 7.55 ROCE, however, is a less helpful indicator of profitability in markets in which there is little or no capital investment, as is the case in retail leased line markets. In retail leased line markets, payments for wholesale services account for a high proportion of the total underlying retail cost base. Most of BT's fixed capital is included in its wholesale business. At the retail level therefore, capital employed is typically small relative to turnover and may even be negative.

#### *ROS/ROVA*

- 7.56 Ofcom has therefore used two other measures of profitability for its assessment of returns in the low bandwidth retail market. The first of these is 'return on sales' (ROS), which measures how much profit is being produced per pound sterling (£) of sales. Although ROS figures suffer from the limitation of not having a theoretical benchmark against which returns can be compared (the "required" return on sales will vary directly with the degree of capital investments of the firm and its cost of capital), it is nonetheless sometimes possible to form views on the level of a particular ROS. In particular, where the degree of capital investment is low, a low but positive ROS will indicate that a company is covering all its costs.
- 7.57 Consistent with this, competition authorities have provided indications of an appropriate ROS where capital intensity is low. In the 1999 report on BT by the then

Monopolies and Mergers Commission (“MMC”)<sup>106</sup>, the MMC based its assessment of the profitability of BT’s calls business on ROS.<sup>107</sup> The MMC considered that the reason this approach could be applied to BT’s retail call business was the “very high proportion of turnover accounted for by bought-in services”.<sup>108</sup> The MMC took the view that a ROS of 1.5% would be appropriate for BT’s calls-to-mobiles activity.<sup>109</sup> In its report on Scottish Hydro-Electric plc a return of 0.5% was adopted.<sup>110</sup>

- 7.58 The second measure is ‘return on value added’ (ROVA), which measures the profit in relation to the value created at the particular stage of the production process that is under examination (in this case, the retail market). For BT’s retail services, value added equates to retail turnover less wholesale input transfer charges. As with ROS, where capital investment is low or even negative, a positive ROVA indicates a company is covering all its costs.
- 7.59 By definition, the ROVA measure will be higher than the corresponding ROS. If firm A earns a higher ROVA than firm B but both earn the same ROS, this indicates that firm A is generating relatively more profit from the activities the firm itself undertakes than firm B.
- 7.60 There are several limitations with the financial data provided by BT that has been used to calculate the ROCEs and ROVAs set out below.
- 7.61 First, Ofcom has been unable to isolate the profitability of low bandwidth traditional interface retail leased lines for the UK excluding Hull area (i.e. the market under consideration). This is because BT has not provided data to Ofcom in a form which enables us to analyse the profitability of digital leased lines by bandwidth.<sup>111</sup> Rather, we present the profitability of BT’s Kilostream and Megastream portfolios. Kilostream leased lines comprise circuits below 2 Mbit/s and the Megastream product line offers leased lines of 2 Mbit/s and above.
- 7.62 Second, we have some concerns about the extent to which BT’s reported wholesale input costs truly represent the charges BT’s competitors incur.<sup>112</sup> In the analysis below we have not made any specific adjustments for this, not least because it

<sup>106</sup> *British Telecommunications Plc: A report on a reference under section 13 of the Telecommunications Act 1984 on the charges made by British Telecommunications Plc for calls from its subscribers to phones connected to the networks Cellnet and Vodafone*. MMC, 21 January 1999. The MMC concluded (paragraph 2.113) that calculating a return on net assets employed was an unreliable basis for setting a reasonable return as the mean net assets employed in call activities are not only relatively small but they consisted for the most part of working capital items which could fluctuate considerably from year to year.

<sup>107</sup> This report referred to Return on Turnover (ROT) rather than Return on Sales. However, these two concepts are identical.

<sup>108</sup> Paragraph 2.116. In the case of BT, ‘over 80% of the retail price to consumers represents the cost of bought in services’ (Paragraph 2.112).

<sup>109</sup> Scottish-Hydro-Electric plc, A Report on a reference under section 12 of the Electricity Act 1989, MMC, June 1995, paragraph 2.85.

<sup>110</sup> The MMC considered in paragraph 2.117 that, “the potential for competition from new operators and the speed with which it could impact on BT are factors which we believe differentiate BT’s calls to mobile activity from the circumstances of Scottish Hydro-Electric.”

<sup>111</sup> In December 2007, BT did provide some disaggregated bandwidth revenue analysis for this market, however, this information was insufficiently robust for us to rely upon. In any event, this new information did not appear to change the general conclusions on BT’s profitability presented below.

<sup>112</sup> BT should calculate its retail profitability as though it purchases the necessary wholesale inputs at external tariff. If this occurs, both profitability measures (ROVA and ROS) are insulated from BT’s ability at the group level to supply these inputs to itself at marginal cost.

requires BT to provide detailed information that it states it does not currently readily have<sup>113</sup>. Based on the findings in our Replicability Statement, it appears that reported retail profitability is materially overstated (and correspondingly that wholesale profitability is materially understated). This is discussed in detail in Annex 13.

- 7.63 Finally, BT has provided Ofcom with financial data regarding the profitability of all the products that it brands as ‘retail services’ (i.e. which appear on the BT Retail price list). This set of products, however, does not correspond to the retail leased line market (as that term is defined for the purposes of the current review) because it includes significant amounts of sales to MNOs (which Ofcom considers belong in the wholesale leased line market).<sup>114</sup> Specifically, sales to MNOs comprise a high proportion of the Megastream and Kilostream portfolio (currently just under 50% for Megastream and 35% for Kilostream). Ofcom has sought financial information from BT that only covers products in the retail leased line market. However, BT does not appear to have this information. This issue does not affect analogue lines or SDSL lines, which are not bought to any material degree by MNOs.
- 7.64 Despite these limitations, we believe that there is merit in considering the profitability information that is available, which is presented below in Table 18.

**Table 18: Profitability of BT’s business connectivity services for (2005/06, 2006/07)**

All in £m		Profitability measures		Turnover	Net profit	Value added
		RoS	RoVA			
		a = d/c %	b = d/e %	c	d	e
<b>Traditional interface circuits</b>						
Digital TI < 2 mb/s	2006/07	15%	49%	120	18	37
	2005/06	14%	42%	152	22	52
Analogue	2006/07	44%	70%	79	35	50
	2005/06	30%	56%	77	23	41
SDSL	2006/07	0%	n/a	6	0	0
	2005/06	(25%)	n/a	4	(1)	(1)
<b>Total excluding digital SDH/PDH circuits of 2 mb/s and above</b>	2006/07	26%	61%	205	53	87
	2005/06	19%	48%	233	44	92
<b>Digital SDH/PDH 2 mb/s &amp; above</b>	2006/07	12%	52%	507	60	116
	2005/06	(4%)	(58%)	514	(23)	40

Net Profit is equal to revenues minus wholesale costs minus retail costs. These transfer charges are calculated by multiplying the volume of circuits utilised by their wholesale (regulated) price.

- 7.65 The retail profitability measures set out above are very high for analogue leased lines and for both categories of digital leased lines (i.e. Kilostream and Megastream). Only SDSL (which is offered in very small volumes) and in one year higher bandwidth digital leased lines (which fall outside this market) do not appear to be profitable.
- 7.66 Turning to the most recent data, the 44% ROS and 70% ROVA that are earned on analogue lines reflect profits associated exclusively with serving a component of the

<sup>113</sup> Ofcom plans to quantify of these adjustments before implementing the charge controls proposed in this consultation

<sup>114</sup> The main MNO services that are covered are sold under the Netstream and SiteConnect tariffs.

low bandwidth retail leased line market. In relation to the Megastream and Kilostream portfolio, as sales to MNOs are just under 50% of total sales for Megastream and 35% of total sales for Kilostream, the underlying profitability for the supply of such circuits would need to be appreciably higher for the profitability of the supply of retail business circuits to be negative. Currently we do not have information which enables us to determine the relative profitability of circuits sold to MNOs relative to those sold to business customers.<sup>115</sup>

- 7.67 Table 18 also presents prior year data, which enables us to consider whether profits are falling in this market (at least over a two year period). The data set out above generally indicates that this is not the case. However, we do not place much if any weight on this information. This is because changes in profits may in fact be driven by MNOs substituting away from Megastream and Kilostream leased lines towards RBS backhaul circuits.<sup>116</sup> As discussed in Section 3, we consider both of these services to be outside the retail leased line market when they are acquired by MNOs. As a result, trends in reported profitability could well be a function of this changing product mix rather than revealing the trend for the supply of retail business circuits. We cannot therefore assess whether low bandwidth retail leased lines are subject to declining profitability.
- 7.68 In conclusion, despite some of the limitations with the data (which essentially mean that the profitability analysis set out above does not correspond precisely to the market under consideration), BT's ROS and ROVA on sales of leased lines to end-users and to MNOs across all bandwidths generally appear to be very substantially above the levels that competition authorities have usually found should apply in effectively competitive markets where capital intensity is low.

### Excessive pricing: international benchmarking

- 7.69 Comparing BT's prices relative to prices for similar products in other countries is another way of shedding light on whether BT's prices may be excessive.<sup>117</sup> Data exists which permits Ofcom to compare the level of UK prices with the prices of leased lines for various countries, both within the EC and beyond.
- 7.70 The results of international price comparisons, however, should be interpreted with care. The price of a particular leased line reflects various factors, including not only the intensity of competition in a market but also factors affecting the retail cost base, such as the level of competition in upstream markets, the level at which regulated wholesale charges are set, the prices of other inputs, and the particular tax treatments of the entity supplying the service which could affect effective wholesale input costs. Prices may also vary because of entities' differing approaches to cost recovery or because the services whose prices are being compared are not

<sup>115</sup> From information provided to us by BT the vast bulk of higher bandwidth sales relate to sales to MNOs. Therefore, in relation to circuits of higher bandwidth included within the profitability mix these primarily relate to mobile profitability.

<sup>116</sup> The 2003/04 Review mandated the supply of RBS backhaul services, which mobile operators have since then purchased in increasing volumes in place of circuits on retail terms. Since then, we are aware that the proportion of Megastream and Kilostream circuits acquired by MNOs included with any one year's results has declined year-on-year.

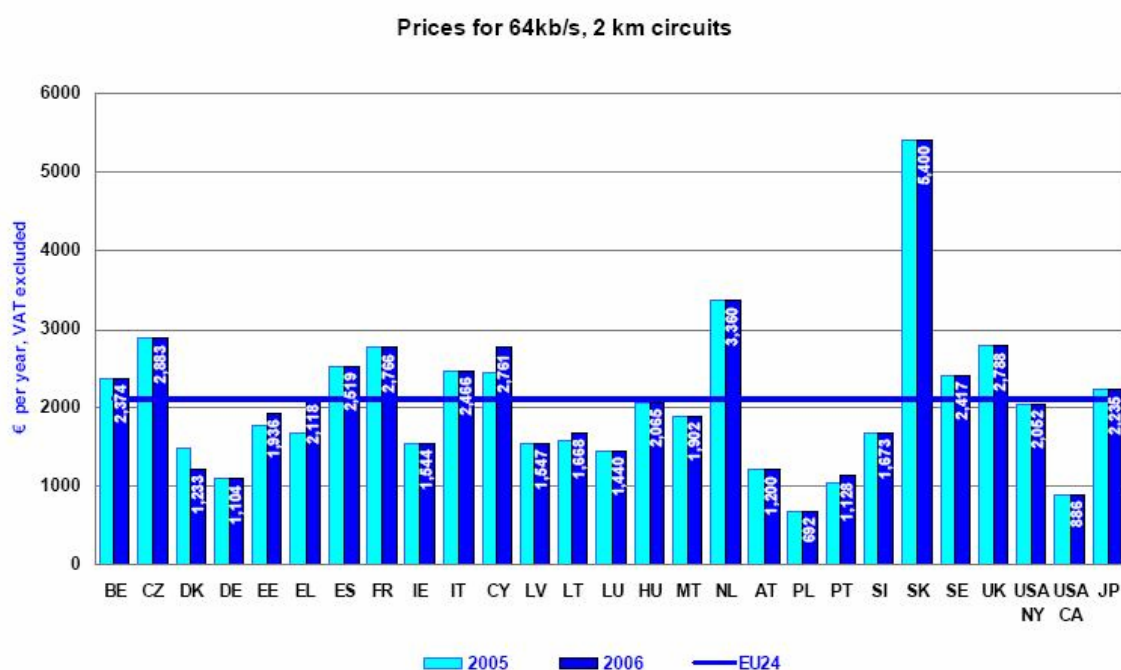
<sup>117</sup> In principle, Ofcom could also compare BT's prices to the prices charged by its competitors. However, to undertake this analysis Ofcom would need to know the prices that both BT and its competitors charge in the retail market. The only prices that are readily accessible are BT's published prices (including its published discounts). OCPs tend to use bespoke pricing, and so it is difficult to form a view on a representative set of OCP prices in this market. Ofcom therefore is not able to form views on whether, or the extent to which, BT charges higher prices than its competitors for similar leased lines.



identical. Finally, in practice (some) incumbents may price their circuits differently with varying, often unpublished, discount structures. Thus, a ‘good’ performance in an international comparison does not by itself show that a particular country market is more competitive than another.

- 7.71 Taking into account these caveats, we have examined the level of UK prices for leased lines against the prices of a number of other countries by examining two different studies.
- 7.72 First, the EC’s 12th Report on the Implementation of the Telecommunications Regulatory Package (March 2007) contains several charts (reproduced below in Figure 60 to Figure 63) comparing the prices of leased lines of different lengths and different bandwidths offered by incumbents in Europe,<sup>118</sup> North America and Japan.<sup>119</sup> The comparisons cover 64kbit/s and 2Mbit/s circuits over 2 kilometres and 200 kilometres both for 2005 and 2006 (although prices have not changed over this period). Prices are assessed on a market exchange rate basis.

**Figure 60: Prices for 64kbits, 2 km circuits**



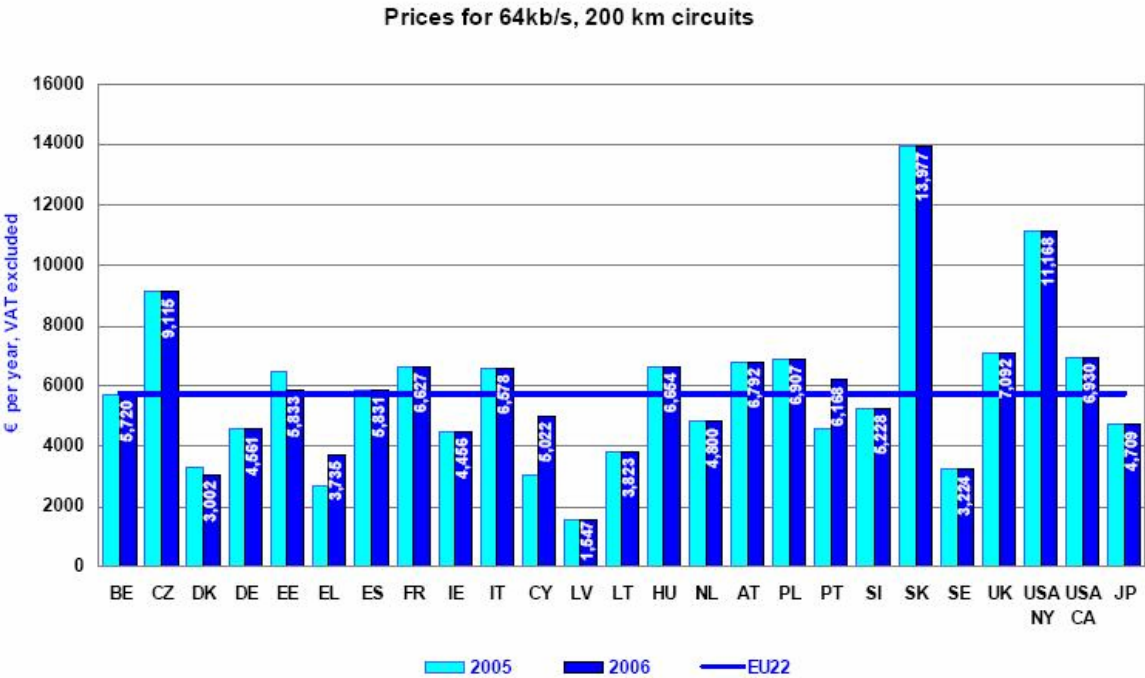
Source: European Commission

<sup>118</sup> All EU countries are covered except Finland.

<sup>119</sup> Charts are taken from Annex 2 of this Report. See:

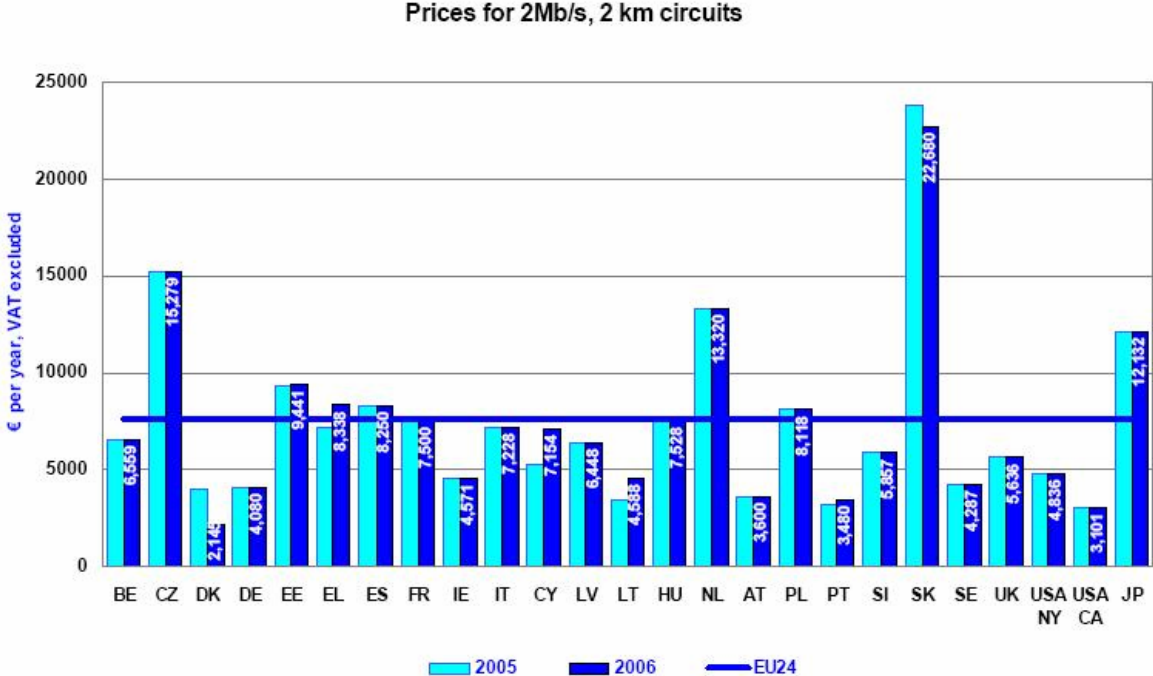
[http://ec.europa.eu/information\\_society/policy/ecom/doc/library/annualreports/12threport/sec\\_2007\\_403\\_annex\\_2.pdf](http://ec.europa.eu/information_society/policy/ecom/doc/library/annualreports/12threport/sec_2007_403_annex_2.pdf)

Figure 61: Prices for 64kbits, 200 km circuits



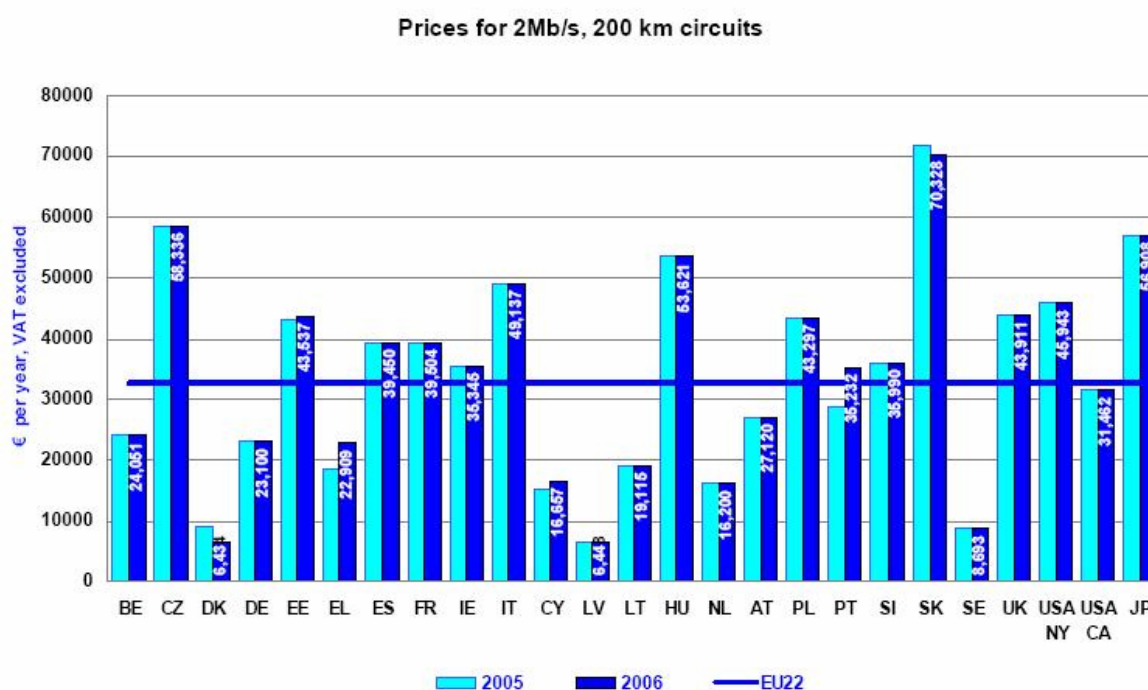
Source: European Commission

Figure 62: Prices for 2Mbits, 2 km circuits



Source: European Commission

Figure 63: Prices for 2Mbits, 200 km circuits



Source: European Commission

- 7.73 As illustrated in Figure 60 and Figure 61, BT offers amongst the highest prices for both 2km and 200km 64kbit/s circuits among the EU incumbents (only the Czech, Slovakian and Dutch incumbents have more expensive prices). For short circuits, BT's price is about €665 more expensive than the EU average price of €2,788, whereas for long circuits, BT's price exceeds the EU average price by nearly €1,335. The EC benchmark also compares the prices of leased lines in Europe to the prices of similar services in the US and Japan. For 64kbit/s traditional interface circuits, the charts indicate that BT charges higher prices than the US ILECs and the Japanese incumbent for short distance circuits. In the case of long distance circuits, BT is more expensive than one of the US incumbents and is more expensive than the Japanese incumbent.
- 7.74 For 2Mbit/s traditional interface circuits, Figure 62 shows that for short circuits, BT's price is about €2,050 cheaper than the EU average price of €7,685. The price of long circuits is shown in Figure 63. This indicates that BT's price exceeds the EU average price of €62,550 by €11,260 (sixteen EU incumbents offer cheaper prices and four EU incumbents offer higher prices).
- 7.75 Comparing UK prices to those applying in the US and Japan reveals that in the case of short circuits, the US ILECs both charge lower prices than BT while Japan's incumbent sets higher prices than BT. For long circuits, BT's prices are lower than the Japanese incumbent. The US ILECs are split, with one charging more than BT and the other charging less.
- 7.76 In conclusion, the EC data generally indicate that UK low bandwidth retail leased lines exceed the prices of equivalent products in other countries, although this is not the case in respect of 2 Mbit/s lines provided over short distances.

- 7.77 The second study is by the OECD.<sup>120</sup> It compares 2006 leased line prices in the UK against those of other OECD members in that year, both on a market exchange rate and purchasing power parity (PPP) basis. The study only assesses a single price for 64kbit/s and 2 Mbit/s leased lines (rather than assessing the price of these services over particular distances).
- 7.78 The findings of the OECD study are broadly consistent with those of the EC. The price of a UK 64 kbit/s line is above the OECD average on both an exchange rate and PPP basis. The price of a UK 2 Mbit/s line is a little below the OECD average on a PPP basis, but above the OECD average on an exchange rate basis.
- 7.79 In conclusion, both reports suggest that BT sets relatively high prices for 64 kbit/s traditional interface retail leased lines compared to other countries. The information is less clear in respect of 2Mbit/s circuits. The data is consistent with BT pricing above average prices in respect of short distance 2 Mbit/s leased line and a little below average in respect of longer distance 2 Mbit/s leased lines.

### **Qualitative criteria**

- 7.80 The following paragraphs consider the SMP qualitative criteria identified by the EC and ERG. Criteria which may give rise to SMP on the supply-side are first considered, followed by criteria which may give rise to SMP on the demand side. Finally, we consider evidence of previous anti-competitive behaviour on the part of BT in this market.

#### Supply-side: Overall size of the undertaking

- 7.81 In some markets entities may derive advantages from their overall size. For example, large entities may find it easier to obtain access to capital, operate at scale, and (if involved in supplying services outside the market under consideration) could derive certain 'conglomerate' advantages not available to other players.
- 7.82 Ofcom has not addressed this criterion separately, but rather has considered it under the discussion below on 'access to capital and financial resources', 'economies of scale' and 'economies of scope'. Ofcom does not consider that other advantages arising from BT's size are likely to be relevant to the assessment of SMP in this market.

#### Supply-side: Control of infrastructure not easily replicated

- 7.83 The wholesale network over which retail low bandwidth traditional interface leased lines are carried is not easy to duplicate, as discussed below in the assessment of SMP for the TISBO and trunk segment markets.
- 7.84 This potentially creates a barrier to entry into the downstream retail market, although the objective of the proposed remedies at the wholesale level is to reduce this feature of the upstream market impeding competition in the retail market. Specifically, remedies such as the requirement on BT to supply PPCs at cost-oriented prices and the other remedies identified above will substantially reduce the need for suppliers of retail leased lines to duplicate infrastructure.

<sup>120</sup> OECD Communication Outlook 2007. See:

<http://213.253.134.43/oecd/pdfs/browseit/9307021E.PDF> (page 248)

- 7.85 Ofcom considers that once properly implemented and monitorable wholesale remedies have been in place for a reasonable period of time, they significantly reduce the probability of barriers to entry giving rise to SMP on BT at the retail level. However, until this is the case BT derives advantages in the retail market as a result of having infrastructure already in place (where Other Communications Providers, or OCPs, do not). Thus, at the present time barriers to entry confer SMP on BT in the retail market.

#### Supply-side: Technology advantage or superiority

- 7.86 An operator's exclusive access to superior technology may create a barrier to entry if this enables it to either to produce at a lower cost or to differentiate its products.
- 7.87 In its last review, Ofcom did not consider that this criterion gave rise to SMP in this market. This was because the technology used to supply leased lines was mature, and additionally because the entities that supplied BT with leased line inputs also supplied all OCPs. For example, it was reported that the construction firms to whom digging and ducting was sub-contracted, as well as the manufacturing firms from whom cable and fibre were acquired, did not have exclusive business relationships with any one particular communications provider.
- 7.88 Ofcom considers that this continues to apply today in retail leased lines markets, meaning that BT does not have access to superior technology.

#### Supply-side: Access to capital and financial resources

- 7.89 Ofcom considers that this criterion is unlikely to create SMP in the retail market, as this market does not require operators to make very substantial investments either in network infrastructure or in some of the items that are required in consumer retail markets (e.g. distribution systems).
- 7.90 Furthermore, the size and scale of players in the retail market, and the fact that some are players in international markets, implies that they would not be restricted in their access to capital or financial resources.

#### Supply-side: Product/services diversification (e.g. bundled products or services)

- 7.91 Product/services diversification occurs where a firm produces a range of products/services, which enable it to provide a "portfolio" of related products and services. When combined with bundling (i.e. selling two or more products together either only as a bundle or at a discount to the individual components' standalone prices), this may have the consequence of making entry into the supply of one or more of the services more difficult. In particular, product/services diversification may enable an undertaking in question to secure and maintain its client basis. For present purposes, the question is whether such diversification creates or strengthens SMP for BT in the market for traditional interface low bandwidth leased lines.
- 7.92 The last market review found that BT generally chose to price traditional interface leased lines independently of other services and hence that multi-product bundling was not a widespread feature of the market. At the present time, however, it appears that multi-product bundling does have the potential to impede competition in the retail market.

- 7.93 The end-user survey indicates that business users generally value acquiring business connectivity services together. In particular, 33% of the entities surveyed only acquire business connectivity services as part of a wider bundle and a further 17% sometimes acquire services as part of a wider bundle (48% always acquire services on a standalone basis). Smaller businesses were more likely to purchase single products from business connectivity suppliers (59% against the user average of 48%).
- 7.94 Moreover, 62% of users acquire all their services from a single supplier, largely on the grounds that it is either more convenient to deal with a single entity or that better discounts are available when buying through a single channel. This indicates that even users that acquire products on a standalone basis may prefer to do so from their existing supplier.
- 7.95 A preference for buying multiple services from one supplier does not necessarily raise barriers to entry into a market. In particular, if OCPs are generally able to supply the various business connectivity services offered by BT and are able to supply those products as efficiently as BT, these entities should be able to viably compete with BT for bundled offerings.
- 7.96 The end user survey indicates that many OCPs are indeed able to supply the same range of products as BT (i.e. leased lines, ADSL, VPNs and SDSL). Thus the main question is whether BT has some special advantage supplying these other retail products. The Replicability Statement referred to above indicates that this is the case, meaning that BT could put together superior bundles that OCPs could not match.
- 7.97 The purpose of the proposed wholesale remedies is to provide OCPs with the opportunity to operate as efficiently at the downstream level as BT in a variety of leased line markets. Once BT supplies wholesale products which enable OCPs to produce leased lines and other retail services as efficiently as BT Retail is able to do (i.e. which comply with all the remedies identified above) and once these have been available for a reasonable period of time, Ofcom considers that bundling of leased lines with other business connectivity products will not provide BT with any special advantages in this market. Until this is the case, we conclude that bundling is likely to add to BT's SMP in the retail leased line market.
- 7.98 It is also worth examining whether potential bundling of leased line services with any downstream Information Technology services has the potential to be anti-competitive. BT has built a considerable IT business in the UK. However IT services appear to be supplied in competitive markets<sup>121</sup> Therefore, it is unlikely that these services provide BT with any additional market power in the leased line market.

#### Supply-side: Economies of scale

- 7.99 Economies of scale either at the wholesale or retail level are a potential barrier to entry into the retail market, and accordingly can create SMP in retail markets.
- 7.100 The remedies that Ofcom contemplates imposing at the wholesale level are designed to ensure that economies of scale arising from the BT's large share of the wholesale market do not provide it with an advantage at the retail level over its downstream competitors. The availability of PPCs at cost-oriented charges (which

<sup>121</sup> Conversely, potential concerns about BT leveraging its SMP in the wholesale leased line market into the IT market are controlled by the discount rules that are imposed on BT when there is no replicability.

reflect economies of scale achieved by BT) are designed to limit the extent to which BT's ownership of the wholesale network extends BT's SMP of wholesale markets into the downstream retail market. Similarly, the aim of the non-discrimination and accounting separation obligations that are imposed on BT is to ensure that OCPs access BT's wholesale inputs on the same terms and conditions as BT's retail arm (and that Ofcom is able to monitor that this is occurring). Once these remedies are implemented, it is likely that any remaining economies of scale would derive from BT's position in the retail low bandwidth leased line market.

- 7.101 Turning to the retail market, in the last market review Ofcom considered that various costs arising specifically from retail operations – in particular activities associated with marketing, advertising, after-sales service, management and administration – were also subject to economies of scale. Although these costs were considered to account for a smaller portion of total costs than wholesale costs, BT's large share of the retail market was considered to give it a further cost advantage over its rivals, which contributed to its market power at the retail level.
- 7.102 While BT continues to have a high market share, the fact that there has been some recent industry consolidation is likely to have reduced any advantage which BT has over OCPs arising from economies of scale at the retail level.
- 7.103 Therefore, at this stage in the market's evolution Ofcom considers that SMP at the retail level is unlikely to exist purely as a result of any economies of scale at the retail level.

#### Supply-side: Economies of scope

- 7.104 Economies of scope potentially arise in the retail low bandwidth traditional interface leased lines market if either the wholesale or retail costs of supplying these services can also be spread over other products. This would enable BT (which produces a greater number of telecommunications services than other players) to operate at lower cost in the retail leased line market.
- 7.105 The remedies that Ofcom contemplates imposing at the wholesale level are designed to ensure that economies of scope arising from the BT's ability to recover its wholesale costs over multiple wholesale services do not provide it with an advantage at the retail level over its downstream competitors. The aim of the non-discrimination and accounting separation obligations that are imposed on BT is to ensure that OCPs access BT's wholesale inputs on the same terms and conditions as BT's retail arm (and that Ofcom is able to monitor that this is occurring). Once these remedies are implemented, it is likely that any remaining economies of scope would derive from the provision of multiple retail activities.
- 7.106 As well as being subject to economies of scale, retail activities such as marketing, advertising, after-sales service, management and administration are likely to provide a source of economies of scope. Spreading these costs across a range of retail operations reduces the average costs of these activities.
- 7.107 BT's high share of various retail business connectivity markets indicates that it is likely to sell a higher total quantity of business connectivity products than any other communications provider. However, information from the end-user survey indicates that most if not all significant Communication Providers supply a wide range of business connectivity services (i.e. Leased Lines, ADSL, VPNs, SDSL). Therefore, these players are also likely to benefit from economies of scope arising at the retail level (although possibly not to the same degree as BT).

- 7.108 Moreover, Ofcom is aware that the costs of these retail-specific activities amount to a much smaller share of the final traditional interface leased line price than wholesale activities. This is why Ofcom believes that the advantages that can be derived from scope economies from retail specific activities are not likely to be very substantial, in particular in relation to wholesale costs.
- 7.109 For these reasons Ofcom's preliminary view is that retail economies of scope are not likely to contribute significantly to BT's market power position at the retail level.

#### Supply-side: Vertical Integration

- 7.110 In the last market review it was found that BT's vertical integration was likely to generate efficiencies not available to other players, stemming amongst other things from BT's ability to avoid various transaction costs that non-integrated communications providers could not avoid.
- 7.111 It was also found that BT's vertical integration (and specifically its SMP in the wholesale market) potentially enabled BT to leverage its power into the retail market. Vertical leveraging could take place because of the significant difference between BT's wholesale average costs, on which regulated PPC charges are based, and the corresponding marginal costs incurred by BT on an end-to-end basis. In theory, this type of vertical leveraging can be prevented by controlling for margin squeeze, by investigating discrimination on non-price factors, and by imposing accounting separation on BT. However, we considered that these wholesale remedies would alleviate, rather than entirely eradicate, the potential for anti-competitive conduct arising.
- 7.112 Both of these considerations continue to apply to the retail market.
- 7.113 Additionally, since Ofcom's Telecommunications Strategic Review, we have reviewed the replicability of a range of services provided by BT in retail markets in which it has SMP. One of the markets covered by the review was the market for retail low bandwidth traditional interface leased lines. The purpose of the review was to determine whether non-vertically integrated competing Communications Providers were able, technically and commercially, to replicate the retail low bandwidth services provided by BT.
- 7.114 We concluded that overall we did not have grounds to believe that replicability had been achieved in the retail market for low bandwidth leased lines. BT's regulatory accounting practices did not appear to provide for equivalent treatment of PPC inputs provided to internal and external customers and in particular several charges levied on external wholesale customers did not apply to BT's retail arm. The specific factors that needed to be addressed in order to allay our concerns are summarised in Annex 13 and in the Replicability Statement.
- 7.115 In other words, at present the scale of BT's upstream operations together with its vertical integration and various features of the services it provides to its downstream competitors continue to give it advantages over its downstream competitors. Once the concerns dealt with in the Replicability Statement are dealt with by BT, we are likely to conclude that advantages accruing to BT as a result of its vertical integration will become much less material.



### Supply-side: Distribution and sales network

- 7.116 As was the case in the last market review, Ofcom considers that the need to establish a distribution and sales network is unlikely to create a significant barrier to entry into this market. This is because the characteristics of buyers of leased lines – in particular their knowledge of these products and awareness of those who supply them – mean that competing CPs are unlikely to have to expend substantial amounts in setting up distribution and sales networks. Further, as many CPs already have these systems in place, the sales and management accounting set-up is likely to be broadly similar across all CPs and is unlikely to confer any cost advantage on BT.

### Supply side: Absence of potential competition

- 7.117 The threat of potential entry can prevent firms from raising prices above competitive levels and, in the extreme, could lead a firm with a 100% market share to behave in a way that would be consistent with higher levels of competition existing in the market than its market share might suggest. However, this threat becomes weak when there are barriers to entry (see below, paragraph 7.121).
- 7.118 Ofcom believes that the likelihood of substantial entry by new players is low. Most if not all the major CPs are already present in this market. Therefore it is unlikely that BT is constrained by potential competition.

### Supply side: Barriers to expansion

- 7.119 Barriers to expansion relate to the ease with which existing players in the market can expand their position so as to constrain BT. Factors which can create barriers to expansion include a market that is declining or stable (this may prevent players operating at efficient scale), capacity constraints or switching costs (which may additionally limit the ability of operators to win new customers and so to constrain BT).
- 7.120 The information presented in Annex 5 suggests that growth in the size of the market for low bandwidth traditional interface retail leased lines is low. It is likely that this factor combined with some barriers to switching (see discussion below) would, in the absence of regulation in the traditional interface retail market, contribute towards BT's ability to behave independently of competitors and consumers in this market.

### Supply side: ease of market entry

- 7.121 The ease of market entry is a general concept relating to whether there are barriers to entry in the market. The specific factors that could give rise to barriers to entry are examined throughout this section, particularly under the discussion on: 'economies of scale', 'economies of scope', 'vertical integration' 'product/service diversification' and 'costs and barriers to switching'. Ofcom does not consider that there are any additional entry barriers in this market.

### Supply-side: Active competition on other parameters

- 7.122 A firm could potentially derive market power from successfully differentiating its product (although clearly product differentiation can also be a response to competitive pressures). However, Ofcom does not believe that this factor is likely to apply to the retail low bandwidth traditional interface retail leased lines because

services tend to be standardised. There is some scope for differentiation in terms of the speed with which leased lines are installed and in terms of the customer service relationship, but it appears that most CPs offer the same range of leased line products and services, and competition tends to focus primarily on the price dimension.<sup>122</sup>

- 7.123 Accordingly, it is Ofcom's current view that issues related to differentiation do not confer additional market power on BT in this market.

#### Supply-side: existence of standards/conventions

- 7.124 The existence of standards or conventions may potentially create barriers if, for example, they are proprietary standards that create exclusive rights to a particular protocol or standard, which new entrants would need either to enter the market in question or else to offer services that are compatible with other firm's products/technologies.
- 7.125 Ofcom believes that this factor does not lead to SMP in this market because the underlying technology used to supply this product is standardised.

#### Demand-side: Countervailing buying power

- 7.126 The European Commission states in its Horizontal Guidelines that:

*"firms with very high market shares may not be in a position post-merger, to significantly impede effective competition, in particular by acting to an appreciable extent independently of their customers, if the latter possess countervailing buyer power. Countervailing buyer power in this context should be understood as the bargaining strength that the buyer has vis-à-vis the seller in commercial negotiations due to its size, its commercial significance to the seller and its ability to switch to alternative suppliers."*

- 7.127 Ofcom considers that for present purposes the test to assess whether countervailing buyer power is sufficient to prevent the exercise of SMP is that set out in Article 14 (2) of the Framework Directive, namely: whether countervailing buyer power can constrain an undertaking from having the "power to behave to an appreciable extent independently of competitors, customers and ultimately consumers."
- 7.128 OFT Guidelines set out a number of conditions which (if satisfied) may indicate that a buyer's bargaining power is enhanced:<sup>123</sup>
- the buyer is well informed about alternative sources of supply and could readily, and at little cost to itself, switch substantial purchases from one supplier to another while continuing to meet its needs;
  - the buyer could commence production of the item itself or 'sponsor' new entry by another supplier (e.g. through a long term contract) relatively quickly and without

<sup>122</sup> For example, our end user research indicates that most customers who use multiple suppliers do so because doing this enabled them to obtain the best available price. Similarly, those customers who use a single supplier do so because it is either easier to manage a single supplier or because this way they obtain better discounts. In neither instance were customers primarily driven by reasons relating to a particular supplier offering better service.

<sup>123</sup> Assessment of market power, understanding competition law, OFT, 2004 (See: [http://www.of.gov.uk/advice\\_and\\_resources/publications/guidance/competition-act/of415](http://www.of.gov.uk/advice_and_resources/publications/guidance/competition-act/of415))

incurring substantial sunk costs (i.e. costs that cannot be recovered if a firm decides to exit the market);

- the buyer is an important outlet for the seller (i.e. the seller would be willing to cede better terms to the buyer in order to retain the opportunity to sell to that buyer); and
- the buyer can intensify competition among suppliers through establishing a procurement auction or purchasing through a competitive tender.

7.129 Turning to the OFT Guidance, Ofcom considers that the first of the four conditions is most likely to be satisfied in respect of retail low bandwidth leased line markets, particularly in the case of large organisations:

- Our end-user research suggests that large organisations tend to spend large amounts of money on telecommunications services. Because of this and their size, these customers are likely to invest in specialist knowledge about telecommunications and telecommunications markets. Additionally, customers may retain specialist consultants or advisers to assist them in their procurement decisions. As a result, these organisations are likely to have knowledge of the range of services on offer from different suppliers. They may also have some information about the underlying costs of provision, although this is unlikely to be anywhere as detailed as that which is known to BT.
- Smaller business customers, in contrast, are less likely to have this information. Our end-user research suggests that this is particularly the case with small business customers who generally spend less than £50k per annum on business connectivity services. Nonetheless, as noted above even these smaller customers tended to review their business connectivity services regularly, suggesting these customers were likely to familiarize themselves with the different supply options available.

7.130 The other factors which, according to the OFT Guidelines, may also indicate the existence of countervailing power are, however, unlikely to be satisfied in relation to the retail market under consideration. Markets for retail low bandwidth leased lines are a relatively low value product. It is unlikely that a customer could induce new entry into the market simply on the basis of procuring this item from a potential supplier. For similar reasons, options for self-supply that arise in the context of higher bandwidth leased lines are unlikely to be viable. Further, even the largest buyers of leased lines would be small in the context of the overall market and therefore would be unlikely to be individually important to a supplier. Finally, while some of the largest corporate customers may acquire all their business connectivity services pursuant to a competitive tendering process, this is unlikely to apply to the vast majority of the market.

7.131 A finding of countervailing buyer power cannot merely be based on there being informed buyers. The fact that customers appear to be well-informed about alternate sources of supply is insufficient to mean that they have sufficient bargaining power to be able to prevent BT from behaving to an appreciable extent independently of competitors, customers and consumers. Therefore, it is unlikely that countervailing buyer power exists in this market (even in the case of the very largest corporate customers).

### Demand-side: Cost and barriers to switching

- 7.132 In the 2003/04 Review, Ofcom considered a range of potential barriers to switching: technological barriers (e.g. interruption to service when switching); contractual barriers (e.g. penalties for breaking contracts); financial barriers (e.g. connection fees for switching supplier or losing benefits of BT volume discounts); perceptions and attitudes (e.g. preference for single vendor circuits; customer inertia; brand awareness).
- 7.133 At the time Ofcom concluded that contractual, financial and perception barriers could all impede switching in the retail market, the latter in particular in so far as smaller customers were concerned.
- 7.134 This time around, the results of the end-user research continue to suggest that switching costs are likely to characterise business connectivity markets, however, it is difficult to assess whether these would be sufficient to permit a profitable SSNIP on the price of low bandwidth leased lines.
- 7.135 Before turning to examine the results of the survey, it is important to note that the survey results discussed below apply to business connectivity services generally, rather than specifically to low bandwidth leased lines. Indications from that survey that switching costs apply across this set of markets would be likely magnified in the case of low bandwidth leased lines. This is because, all other things equal, switching costs are more likely to apply in low value markets – specifically because here any transaction or inconvenience costs associated with shifting suppliers are more likely to outweigh the benefits of switching in these markets.
- 7.136 Around half the businesses surveyed did not appear to have signed up to contracts whose length impeded them switching over a period that could reasonably be considered the short-term. More specifically, 52% of businesses interviewed had contracts whose term went up to two years. Against this, 31% had contract terms of between two and five years, and 4% were on longer-term deals. While a substantial share of the market are on longer-term deals, most of the customers on these deals were larger entities, suggesting (because of the higher bargaining power of larger entities) that long-term contracts may be sought by these customers to secure better deals rather than simply being imposed on customers by Communications Providers to prevent switching and so to enhance SMP. Consistent with this, most end-users did not cite contract term as a factor preventing them switching to other voice or data services and the information set out in the following section implies that long-term contracts did not prevent customers reviewing their business connectivity needs. A final point worth noting regarding longer-term contracts is that even though they create a switching cost for particular customers, they do not necessarily create entry barriers across a particular market where the various contracts expire over different points in time. For the purposes of the current review it seems likely that only a small proportion of the market is ‘foreclosed’ at any point in time.
- 7.137 More generally, the end user survey suggested that customer inertia was not a major feature of business connectivity markets overall. As noted in the section immediately below, customers appear to review their business connectivity needs regularly and at reasonably frequent intervals, and often make changes to the services that they acquire following such a review. While end-users are likely to be more reluctant to change their overall business connectivity needs (i.e. to make wider system changes), they appear willing to change their use of particularly services such as retail leased lines. However, there are several reasons why there

may be more inertia in the low bandwidth TI market than this information suggests. First of all, as noted above, customer inertia is more likely to be significant in relation to lower value services. Further, 33% of the market *only* acquired products as part of wider 'business connectivity' package and a further 17% *sometimes* acquired services as a bundle. Such customers may be less likely to change their supplier of low bandwidth leased lines, if they are more concerned about the price of the overall bundle that they acquire rather than about the value of individual services.

- 7.138 Related to this, as noted above 62% of users acquire all their services from a single supplier, suggesting that there may be some relationship-specific investments involved in developing a successful relationship with a supplier of business connectivity services, and associated disruption costs involved in changing this relationship. This is another factor which could create some inertia in respect of particular services, although the evidence on this is mixed.
- 7.139 Other financial and technological barriers may also act to prevent switching between different products and services. First, switching to different business connectivity services will often require a user to incur one-off costs associated, for example, with new equipment (as is the case when users switch from digital to Ethernet leased lines) or will involve disruption (as is the case when moving from leased lines to VPNs). These factors can all act to slow down switching at least until the cost of existing equipment has been written down.
- 7.140 Finally, the fact that BT's market share does not appear to have fallen since the last market review indicates that customer inertia may be greater than the results of the end user survey suggest. In particular, the volume and term discounts that BT applies across many of its retail products are likely to induce end-users to stick with BT even if the price of individual low bandwidth products rises. While discount schemes may sometimes raise competition concerns, it is generally expected that OCPs will be able to match these discounts once the wholesale remedies set out above are in place. Therefore, Ofcom considers that, although there may be some switching costs that arise in the retail market, they do not by themselves cause additional competition concerns at the retail level.

#### Demand-side: Customer's ability to access and use information

- 7.141 As would be expected, the results of the end user research generally suggest that customers are able to access and use information about the range of business connectivity services on the market, as well as the terms on which they acquire those services.
- 7.142 The often high expenditure on business connectivity services by the large businesses surveyed – sometimes as much as £10 million annually – makes it more likely that these businesses will devote internal resources to informing themselves about the best deals available. The majority of small businesses, in contrast, spend less than £50k per annum suggesting that these businesses are less likely to be in such a position.
- 7.143 Further, 89% of business users had reviewed their business connectivity services in last three years, percentages which significantly did not vary very much depending on the size of business. Following the review, 62% of this group (55% of the overall survey group) had made changes to some or all of their business connectivity services – suggesting that obtaining a better price or better quality service were behind these changes.

- 7.144 The fact that so many users had reviewed their needs, together with the related fact that 82% of end-users were not aware of any other business connectivity services that would meet their company's needs better than the current set-up, is consistent with customers overall being well-informed about services on the market. This is consistent with Ofcom's findings from the last review of leased lines.

### Previous anti-competitive behavior

- 7.145 Evidence of previous anti-competitive behaviour affecting the market under review can suggest that a market is not effectively competitive, either because the conduct would not itself be viable in a competitive market or because the conduct itself reduces competition in the market.
- 7.146 There have been two important cases regarding allegations of BT's anti-competitive conduct relating to the supply of wholesale inputs necessary to compete in the markets for traditional interface leased lines which Ofcom has dealt with since the last market review. These claims raised concerns about BT's ability to foreclose competition in retail markets for traditional interface leased line markets arising from its position in the upstream wholesale market. More specifically, both involved claims that BT was breaching certain SMP conditions imposed under the 2003/04 Review. These claims did not relate specifically to the supply of low bandwidth wholesale inputs but rather to the supply of PPCs more generally.
- 7.147 The first case – an Ofcom own-initiative investigation – was opened on 20 June 2005.<sup>124</sup> This concerned whether BT's charges for its PPC wholesale trunk segments were consistent with its cost-orientation obligations i.e. were reasonably derived from the costs of provision based on a LRIC approach, allowing an appropriate mark up for the recovery of common costs and an appropriate return on capital employed.<sup>125</sup>
- 7.148 During the course of the investigation Ofcom identified a number of concerns in connection to the accounting treatment of PPC trunk segments. These primarily related to the way that core transmission costs were split between PPC wholesale trunk segments and PPC terminating segments. Additionally there were concerns that the derivation of reported revenues for PPC wholesale trunk segments may not be consistent with the methodology used by BT for third party billing.
- 7.149 Ofcom obtained a clear commitment from BT and agreed a project plan and timetable to prepare the data needed to quantify and correct the accounting problems identified. This analysis led to restated costs and revenues for PPC trunk services and a revised methodology for recovery of core transmission costs between trunk and terminating segments on a forward looking basis.
- 7.150 In December 2005 Ofcom closed its investigation, resolving to re-examine this issue further within the current review. Because no formal decision was made in relation to this investigation, Ofcom does not place much weight on this case for the purposes of the current assessment.

<sup>124</sup> See: [http://www.ofcom.org.uk/bulletins/comp\\_bull\\_index/comp\\_bull\\_ccases/closed\\_all/cw\\_841/](http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ccases/closed_all/cw_841/)

<sup>125</sup> The particular instrument was SMP Services Condition H3 in Annex D of the 'Market Review of the retail leased lines, symmetric broadband origination and wholesale trunk segments markets', published on 24 June 2004

- 7.151 The second complaint, arising in August 2006, involved THUS requesting Ofcom to resolve a dispute between itself and BT Wholesale regarding the payment terms for PPCs and several related wholesale products.<sup>126</sup>
- 7.152 THUS' complaint concerned BT's practice of invoicing these products quarterly in advance, with 30 days to pay from the date of the invoice. In so far as PPCs were concerned THUS alleged that these conditions breached BT's SMP conditions imposed as part of the 2003/04 Review, which required BT to offer these products on fair and reasonable terms, conditions and charges.<sup>127</sup> THUS claimed that the working capital required to support the quarterly advance payments imposed a significant burden on its business and therefore placed it at a competitive disadvantage relative to BT's downstream businesses.
- 7.153 After finding that these payment terms were capable of harming competition, and accordingly were in breach of BT's SMP conditions.<sup>128</sup> Ofcom required BT to offer THUS payment terms for the relevant products of billing monthly in advance with 30 days to pay. BT was also ordered to pay THUS a sum compensating it for the overpayments.
- 7.154 Notwithstanding the presence of wholesale remedies designed to attenuate upstream bottleneck issues, this investigation indicates that BT's position as a vertically integrated entity potentially may still provide it with a source of SMP in the retail market for traditional interface leased lines.

#### Likelihood of competition developing in the future

- 7.155 Ofcom has assessed whether the SMP that presently characterises this market is likely to be attenuated during the period covered by this review. Although Ofcom contemplates putting remedies in place at the wholesale level that are designed to deal with upstream bottlenecks and although achievement of replicability should pave the way for more effective competition, it cannot be automatically assumed that these will deal with all the competition concerns highlighted above. That this is the case is supported by the fact that previous wholesale remedies that have existed for several years have not served to reduce BT's market share since the 2003/04 Review.

*Question 8: Do stakeholders agree with our assessment of SMP in the retail low bandwidth market in the UK excluding the Hull area? In particular, do you agree with our assessment that regulation in this market is still required for the time being?*

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<sup>126</sup> [http://www.ofcom.org.uk/bulletins/comp\\_bull\\_index/comp\\_bull\\_ccases/closed\\_all/cw\\_916/](http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ccases/closed_all/cw_916/)

<sup>127</sup> Essentially the same complaints were made about the other products.

<sup>128</sup> Specifically, Ofcom found that the payment terms breached conditions G1.2, GG1.2 and H1.2 in Annex D of the 'Market Review of the retail leased lines, symmetric broadband origination and wholesale trunk segments markets', published on 24 June 2004. A broadly equivalent condition of the narrowband wholesale exchange line review was also found to have been breached.

## Ofcom's assessment of SMP in wholesale markets in the UK excluding Hull

- 7.156 Having considered whether SMP exists in the retail market for low bandwidth leased lines, we now turn to examine the wholesale markets for the provision of leased lines in the UK excluding Hull.
- 7.157 Ofcom considers the main factors that are likely to either evidence SMP or create SMP at the wholesale level are as follows:
- Market shares;
  - Control of infrastructure not easily duplicated;
  - Economies of scale and scope;
  - A lack of countervailing buyer power;
  - Barriers to entry and expansion;
  - Absence of potential competition.
- 7.158 There are a number of other SMP criteria identified by the Commission and ERG Guidelines that have been listed at the start of this Section. Ofcom has not based any of its findings of SMP on these criteria. This is generally because these criteria are either not relevant to the assessment of SMP in wholesale markets or else because they are not likely to create SMP in wholesale markets for leased lines. These criteria are briefly examined below.

### Overall size of the undertaking

- 7.159 Entities may derive advantages from their overall size. Apart from having easier access to finance and being able to operate at scale (discussed below), an entity with a large overall size could derive certain 'conglomerate' advantages not available to other players (possibly arising from activities outside the market under consideration). Ofcom has considered this issue in relation to these more specific factors and has not addressed it separately. Ofcom does not consider that other advantages arising from BT's size are likely to be relevant to the SMP assessment of the market.

### Technological advantages or superiority

- 7.160 As noted above, an operator's exclusive access to superior technology may create a barrier to entry if this enables it either to produce at a lower cost or to differentiate its products.
- 7.161 Ofcom considers this criterion is of minimal relevance to wholesale segments because:
- the technology of traditional and alternative interface leased lines is both well-known and readily available to all communications providers; and
  - the incumbent is supplied with the same inputs (e.g. lengths of fibre, routers, and so on) as OCPs.



- 7.162 Significantly, these considerations apply equally to Next Generation Networks, in respect of which BT does not have any form of innovation 'head start'. The technical standards which underpin BT's investment in NGN are set under internationally-agreed standards, designed to provide the building blocks for interoperability with OCPs' networks. While BT's position as the main supplier of Next Generation Networks has the potential to confer SMP on BT, this does not arise from BT's technological advantages or superiority. Any competitive barriers arising from BT's ownership of NGNs instead emanate from its ownership and control of the physical infrastructure and are therefore examined under other criteria.
- 7.163 In relation to BT's current network, BT has previously stated that it operates a legacy PDH network in tandem with a modern SDH network, while its competitors only operate modern SDH networks.<sup>129</sup> This could indicate that BT is in some (limited) aspects of its technology at a disadvantage relative to OCPs although Ofcom notes that BT would always have the option of investing in SDH – it does not lack access to the superior technology. In any event, Ofcom considers that this factor is not sufficiently material to make this criterion an essential part of its market power assessment.

#### Access to capital markets

- 7.164 As noted in the discussion on the retail market, easy or privileged access to capital markets may represent a barrier to entry as well as an advantage over existing competitors.
- 7.165 Ofcom does not consider this criterion to be a likely source of SMP in the wholesale markets under consideration. The size and scale of many players in the market, and the fact that some are players in international markets, makes it unlikely that they would be restricted in their access to capital or financial resources.

#### Product/services diversification (e.g. bundled products or services)

- 7.166 As noted above, a firm that produces a portfolio of related products and bundles those products may create entry barriers in one or more of the markets in which these services are supplied. Bundling, for example, may enable an entity to put together packages that other operators are not able to match, and may enable an operator to leverage its SMP in one market into potentially competitive markets.
- 7.167 In the absence of regulation, it is likely that BT would not always offer individual wholesale services on their own. Instead, it would bundle terminating segments with trunk segments as part of an end-to-end leased line sold at a retail price (as occurred before BT was required by Ofcom to supply PPCs). Although this conduct would create competition concerns, we are not relying on this criterion for our SMP assessment. This is because in those markets where competition concerns would arise as a result of bundling, competition concerns would be likely to exist independent of any bundling which is occurring in the market.

#### Vertical Integration

- 7.168 Vertical integration can be used to leverage SMP from a market where an economic bottleneck exists into other potentially competitive markets. In telecommunications, vertical integration concerns typically relate to the possibility of a firm with SMP in

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<sup>129</sup> See paragraph 6.115 of 2003/04 Review, at page 341.

an upstream input market extending its market power into structurally competitive downstream markets.

- 7.169 For present purposes, the question is whether BT's high share of various *retail* leased line markets can be used to foreclose competition in the corresponding wholesale markets. Where there are additional barriers to entry at the retail level, then this could occur because BT is known to self-provide almost all its own TISBO and trunk services and does not generally purchase wholesale inputs from other operators.
- 7.170 However, it is likely that BT's high retail market share largely reflects its advantages in the wholesale market. In other words, BT's success in the retail market may itself be explained by BT's ability to leverage its SMP in the wholesale market into the downstream market rather than itself conferring any additional advantages in the wholesale market. Our analysis of the retail market suggests that there are relatively few barriers to entry that arise purely at the retail level. This implies that so long as effective wholesale remedies are in place, over the longer term OCPs should be able to wrest retail market share from BT.
- 7.171 On this basis, Ofcom has concluded that BT's position in the retail market is unlikely to confer significant SMP on BT in any wholesale market. This has led Ofcom to conclude that vertical integration is not a source of market power for BT in the wholesale leased line markets.

#### A highly developed distribution and sales network

- 7.172 In certain markets well-developed distribution systems – which are costly to replicate and maintain, and may even be incapable of duplication – may represent a barrier to entry and hence may be a source of SMP to existing competitors.
- 7.173 Ofcom does not consider that this criterion creates SMP in wholesale telecommunications markets because the services in question do not require a specialised or complex distribution network.

#### Costs and barriers to switching

- 7.174 Ofcom considers that most of the switching costs in the market arise from the high fixed costs of entering wholesale telecommunications market. These costs make it difficult for operators to switch to self-supply or to use alternative wholesale suppliers for reasons that are examined under the discussion on 'economies of scale', 'economies of scope' and 'control of infrastructure not easily duplicated' set out below.
- 7.175 Beyond this, Ofcom does not consider that other switching costs are likely to materially contribute to SMP in wholesale markets. Factors which give rise to switching costs in retail markets – the transaction costs associated with changing suppliers arising either because of the time spent in effecting the change or the need to invest in relationship-specific investments – are much less likely to dissuade wholesale customers changing suppliers. Equally, customer inertia and the search costs incurred in finding new suppliers are less present in wholesale markets.
- 7.176 There are still some switching costs in wholesale market. For example, in order to minimise disruption, an OCP switching to self-provision (or using another supplier) will need to operate its own TISBO (or an OCP's TISBO) as well as a BT-provided

PPC over some transition period. There might also be contractual barriers to switching relating to early termination of contracts with BT, although our analysis of BT's contractual terms indicates that most PPC contracts are of only a one year duration. Ofcom's view is that these costs are much less likely to impede switching in wholesale markets, because they are not likely to be material in the context of the overall transaction.

### Active competition on other parameters

- 7.177 The ERG proposes that market power can be obtained through competing on parameters such as marketing and innovation.<sup>130</sup>
- 7.178 Ofcom considers that marketing to wholesale customers is unlikely to be a source of advantage in this market. Innovation is also limited and where it occurs is most likely to occur in upstream markets for equipment, and to be open to all wholesale players.

### Existence of standards/conventions

- 7.179 The existence of standards or conventions may potentially create barriers if, for example, they are proprietary standards that create exclusive rights to a particular protocol or standard, which new entrants would need either to enter the market in question or else to offer services that are compatible with other firm's products/technologies.
- 7.180 While there are technical standards for equipment used in the provision of wholesale leased lines, they are most unlikely to create a position of SMP in any downstream wholesale market. This is because these are essentially open standards, which are available to all those who operate in the market. As noted above, these considerations also apply to NGN networks.

### Customers' ability to access and use information

- 7.181 SMP may be created in markets where customers have limited access to information or where they are otherwise prevented from making informed choices. In these markets customers have reduced capacity to act upon differences between providers, and so firms may acquire independence of action from consumers and competition.
- 7.182 Ofcom does not consider that this criterion is likely to characterise the markets under consideration. Wholesale customers are generally well-informed within the market place and further, it does not appear to be the case that BT Retail has better access to information than OCPs. Therefore, SMP is not likely to arise under this criterion.

### International benchmarking

- 7.183 International benchmarking data on trunk and terminating segments is not readily available and it is therefore not possible to compare BT's prices to the corresponding prices in other countries. Therefore, it is not possible to assess SMP by reference to international price comparisons.

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<sup>130</sup> "Revised ERG Working paper on the SMP concept for the new regulatory framework" September 2005 (see paragraph 43)  
([http://erg.eu.int/doc/publications/public\\_hearing\\_concept\\_smp/erg\\_03\\_09rev3\\_smp\\_common\\_concept.pdf](http://erg.eu.int/doc/publications/public_hearing_concept_smp/erg_03_09rev3_smp_common_concept.pdf))

## **Introduction to market by market assessment of wholesale markets in the UK excluding Hull**

- 7.184 Having identified the SMP criteria which are most likely to be relevant to the assessment of SMP in wholesale markets, the following sections proceed to consider each of the wholesale markets relevant to the supply of leased lines in the UK excluding Hull. We first examine the two sets of wholesale origination/termination markets:
- Traditional interface symmetric broadband origination i.e. dedicated transmission capacity between customers' premises and aggregation nodes on BT's SDH/PDH network (or the equivalent on OCPs' networks).
  - Alternative interface symmetric broadband origination i.e. dedicated transmission capacity between two points, generally by means of Ethernet over fibre.
- 7.185 We then proceed to examine the trunk market i.e. circuits of any bandwidth linking major aggregation nodes on the SDH trunk network
- 7.186 As noted above, these markets are assessed in the absence of any remedies being applied in these markets.

## **Market for low bandwidth traditional interface symmetric broadband origination up to and including 8Mbit/s in the UK (excluding the Hull area)**

### **Summary of conclusions**

- 7.187 Ofcom's view is that BT has SMP in the low bandwidth TISBO market. The factors which are generally accepted to give rise to entry barriers in telecommunications markets apply very strongly in this market. These are not offset by the high revenues which can be earned in higher bandwidth markets or in markets which provide greater opportunities for traffic aggregation.
- 7.188 As discussed in detail below, Ofcom considers that the following factors provide BT with SMP in this market:
- The ubiquity of BT's infrastructure and the fact that such infrastructure is not easily duplicated;
  - BT's ability to exploit economies of scale and scope;
  - The existence of significant barriers to entry and expansion, including as a result of sunk costs.
- 7.189 That this is the case is reflected in BT's persistent and very high shares in this market, which in fact appear to have increased marginally since the last market review.
- 7.190 The sections below present our analysis of the criteria that are most relevant to the assessment of SMP in wholesale markets.

## Quantitative information criteria: market shares

- 7.191 The table below sets out BT's volume market share. In 2006, BT was estimated to have 89% of the market, which is slightly higher than the share that it was calculated to have in 2001/02 (calculated to be between 84-88%). No other player share exceeds 2%.

**Table 19: Volume shares for low bandwidth traditional interface symmetric broadband origination in the UK (excluding the Hull area) (2006)**

	Share (%)
BT	89
Others (no other CP had >2%)	11

Source: CP data, Ofcom

- 7.192 These shares are those which exist in the presence of wholesale regulation, although as noted above, market power should be assessed in the absence of regulation. If they existed, it would be preferable to use market shares in the absence of the PPCs that are made available as a result of regulation. It is unlikely, however, that PPCs distort BT's market share above what it would otherwise be (as would be the case if, for example, PPCs were priced below the cost of provision and so reduced incentives for self-supply). While BT's profitability analysis implies that PPC originating segments may be under-priced, Ofcom considers that this may not represent the 'true position' in respect of BT's profits in this market. Therefore, Ofcom considers that the market shares listed above are helpful to the assessment of SMP (although they are not the only basis on which SMP is analysed).
- 7.193 Although these estimates are likely to be upper limits on BT's position in the market, the very high market share that BT has been estimated to have (more than double the 40% share which the Commission considers gives rise to concerns about SMP) is very strong evidence of the existence of a dominant position. The persistence of BT's high share indicates that even over the longer-term OCPs are not able to constrain BT.

## Quantitative information: Profitability

- 7.194 As noted above, the most commonly used measure of profits by economic regulators and competition authorities is the return on capital employed (ROCE). An advantage of the ROCE is that there is a benchmark with which it can readily be compared in order to assess whether profits and prices might be excessive. This benchmark is the activity's WACC, which is the level that would be required by investors to compensate them for any risk incurred by investing in the activity. Profits which are significantly and persistently above the WACC may indicate that the firm has SMP.
- 7.195 As the supply of leased lines on a wholesale basis requires BT to make substantial investments in both infrastructure and equipment, ROCE is a particularly appropriate measure to assess profitability in this market. In this assessment we have used BT's "applicable rate of return on capital" of 11.4% as reported in its regulatory financial statements, which is the relevant cost of capital as set out in

Ofcom's August 2005 statement "Ofcom's approach to risk assessment in the cost of capital"<sup>131</sup>.

- 7.196 Ofcom has used financial data based on BT regulatory financial statements to calculate the ROCE applying to the market for low bandwidth traditional interface origination services. These data captures sales of all low bandwidth PPCs and all RBS backhaul services. BT's 'retail' sales to mobile operators under its Netstream tariffs are not captured below. Therefore, the profitability of supplying one product that Ofcom considers belongs in the market is not reflected in the figures below.
- 7.197 The overall position is shown in Table 20. This indicates that BT earned a low ROCE in this market over both 2005/06 and 2006/07 (as against the 11.4% cost of capital reported in its regulatory financial statements). These low levels represent the weighted average of returns on sub 2 Mbit/s services (negative return on capital employed) to low positive for 2 Mbit/s PPCs to higher positive returns (~20%) for 2 Mbit/s radio station backhaul.

**Table 20: Low bandwidth traditional interface origination market profitability**

All in £m	ROCE %	Turnover	Profit	MCE
<b>TISBO &lt;= 8 mb/s</b>				
2006/07	3%	682	38	1,315
2005/06	5%	719	69	1,420

Source: BT regulatory financial statements (the comparative figures for 2005/06 reflect its reanalysis of its costs between trunk and origination).

- 7.198 There are several reasons, however why BT's reported profitability should not be interpreted as implying that BT does not have SMP in the market for low bandwidth TISBO services.
- 7.199 First, BT's reported profitability appears to understate BT's 'true' profitability in this market. First (and most materially), BT appears to have under-charged its downstream business for various wholesale services (relative to the price it charged external entities). In particular, a review<sup>132</sup> by Ofcom completed in May 2007 of BT's 2005/06 PPC transfer charges established that:
- the price that BT Retail pays for the access (the 'local end') part of a PPC circuit is 30% lower than the price paid by its rivals. The lower internal price dates back to a decision made by Ofcom in 2002, which needs to be reviewed and updated;<sup>133</sup>

<sup>131</sup> See also: Current Cost Financial Statements for 2007 including Openreach Undertakings, pages 70 and 71, "applicable rate of return on capital" column for TI and AISBO services. See:

<http://www.btplc.com/Thegroup/Regulatoryinformation/Financialstatements/2007/CurrentCostFinancialStatements.pdf>

<sup>132</sup> This review was prompted by concerns expressed by number of OCPs that the operation BT's transfer charging mechanism in relation to PPCs was not equivalent. The OCPs raised these concerns in the context of an Ofcom policy project to establish whether a range of services provided by BT in retail markets in which it has SMP were replicable. The Replicability Statement signalled that we would review this matter.

<sup>133</sup> This adjustment factor dates back to Ofcom's PPC Phase II Determination in November 2002.

- BT did not charge itself fully for the equipment it deployed at business customer premises;
- there were no separate transfer prices price for local ends terminating in the Central London Zone (CLZ) although a different (lower) external price is charged;
- BT did not charge itself for any of the ancillary services that competing CP purchased such as excess construction charges (ECCs) and resilience; and
- payment terms were more favourable to BT than those given to its rivals.

7.200 Second, BT's low reported profitability in the low bandwidth TISBO market will to a significant extent reflect the fact that BT's charges for TISBO are subject to RPI-X control which prevents BT from exploiting any SMP it may possess in this market by raising prices.<sup>134</sup> Because BT's returns in this market (and in other TI markets) are a function of the prices set by Of tel (as well as any subsequent Ofcom price control reductions), they reflect the constraints that have been imposed by regulation, the very purpose of which is to prevent BT pricing excessively. Thus, low returns in the market do not imply that (in the absence of regulation) BT would not have SMP in that market.

7.201 Because of the above considerations, Ofcom has decided not to place much weight on BT's ROCE in this market.<sup>135</sup>

### **Qualitative criteria**

7.202 The following paragraphs consider the SMP qualitative criteria identified by the EC and ERG. Criteria which may give rise to SMP on the supply-side are first considered, followed by criteria which may give rise to SMP on the demand side. Finally, we consider evidence of previous anti-competitive behaviour on the part of BT in this market.

#### **Supply-side: Control of Infrastructure not easily replicated**

7.203 Network infrastructure is not easy to duplicate. Apart from taking time and money to build, large upfront investments have to be sunk in order to serve this market. The low opportunities for aggregating traffic in this part of the network, together with the correspondingly low expected retail revenues earned in relation to low bandwidth TISBO services mean that operators are often reluctant to incur these costs to enter the market.

7.204 As a former monopolist, BT's network is ubiquitous in its coverage and most of its network costs are sunk. In most instances, BT can use its existing copper infrastructure (also used to provide PSTN services) to deliver low bandwidth TISBO services (only TISBO services exceeding 2Mbit/s or multiple 2Mbit/s circuits would be delivered on fibre). BT therefore has the infrastructure at its disposal to supply TISBO segments in most places in the country within a reasonable period and without incurring substantial costs. In other words, the ubiquity of BT's network

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<sup>134</sup> Charges were not reset at the beginning of the current control to bring them into line with BT's cost estimates because BT was unable to provide sufficiently robust cost information to do so.

<sup>135</sup> Clearly some of this discussion also applies to the interpretation of the ROCE of other related (i.e. Traditional Interface Symmetric Broadband Origination) markets. This is discussed further below under the consideration of each of these markets' profits.

enables it to incur relatively low incremental costs when deploying TISBO to serve a particular customer or area, and this tends to apply throughout the relevant geographic market.

- 7.205 In contrast, OCPs have more recently entered the sector and their local networks are not extensive in all areas. This is confirmed by Ofcom's analysis of the different operators' shares by postal sector, together with the network reach analysis, which is analysed at length in Section 6. These operators would need to incur substantial sunk costs to extend local infrastructure.
- 7.206 BT's share of low bandwidth TISBO sales to MNOs appears to be marginally higher than its share of sales to OCPs.<sup>136</sup> Consistent with this, Ofcom has been informed by one MNO that it primarily acquires leased lines from BT because in the past when it has gone out to tender, it did not receive responses from other operators. BT is almost always in a position to supply the required TISBO functionality faster and cheaper than the OCPs. Similarly, another MNO informed Ofcom that OCPs decline to quote for those areas where they are unable to supply.
- 7.207 Those players that do have widespread access networks – in general cable operators – are not able to provide symmetric origination services efficiently, since their networks are designed for the transmission of asymmetric traffic flows. Thus the competitive constraint that these players may place on BT in certain markets does not apply to the market under consideration. Cable operators can of course deploy point-to-point fibre, and may do so in areas where they have duct. However, the fact that the cable operator, Virgin Media, has only around 2% of the low bandwidth traditional interface symmetric broadband origination market indicates that even these players do not exert competitive pressure on BT in this market.
- 7.208 The above considerations currently lead Ofcom to consider that BT's control of the infrastructure required to provide TISBO services creates a significant entry barrier in the market.

#### Supply-side: Economies of scale

- 7.209 Symmetric broadband origination is characterised by significant economies of scale. Entities wishing to enter this market must incur large fixed costs digging trenches and then ducting and laying fibre or copper. Additional fixed costs can arise where way-leaves (i.e. legal permission to connect cables to the building) are required from the owner of the areas over which these activities take place. Once these investments have been made, the incremental costs of supplying TISBO services are relatively small.
- 7.210 Other economies of scale arise at the local exchange as well as the third party site, since the costs of equipment at these sites do not increase significantly with capacity. The greater the number of leased line customers served by the same local exchange or at the same third party site, the better the equipment utilisation that can be achieved and the cheaper it is to serve a particular customer.
- 7.211 As the average cost of supplying TISBO services to a particular location decreases as the number of TISBO services at that location increases, the extent to which a supplier of TISBO services is able to exploit economies of scale is likely to vary with geographical locations, i.e. with customer density. That said, our geographic analysis indicates that BT's share of postal sectors is overall close to the national

<sup>136</sup> This is discussed in Section 5 ('Mobile Network Operators' network connectivity').



average. This indicates that BT is likely to derive advantages from economies of scale throughout the UK and that OCPs may not.

### *Cost/volume relationships*

- 7.212 It is difficult to quantify the precise extent of the economies of scale that characterise the market, although some guidance on this matter can be gleaned by examining cost/volume relationships (CVRs). CVRs measure the percentage increase in total cost arising from a small percentage increase in volume. A CVR greater or equal to one would imply no economies of scale; a CVR of less than one implies the presence of economies of scale, and the lower the figure, the greater their extent.
- 7.213 In the 2003/04 Review, Ofcom presented information on CVRs previously computed for Oftel by Europe Economics in 2000.<sup>137</sup> The CVRs estimated by Europe Economics implied the existence of substantial economies of scale in the provision of access segments (where volume measures total capacity in terms of Mbit/s). Specifically, Europe Economics calculated the following CVR slope coefficients (expressed in percentage terms) relating to access networks:
- duct: 5%
  - copper: 35%
  - fibre: 22%
  - operating costs: 48%.
- 7.214 Although these estimates are now quite old, the costs that appear to have potentially materially fallen since these calculations were carried out are the costs of SDH equipment and operating costs. For a new entrant these items are relatively small in comparison to the cost of ducting and laying fibre, implying that economies of scale continue to be significant.
- 7.215 These economies of scale mean that BT's costs will be below those of its rivals because BT's customer base is larger than that of any other communications provider at the local access level for low bandwidth TISBO (as indicated by its 89% market share). Given the other entry barriers in this market, it is unlikely to be possible for an operator to enter at a scale which allows it to match BT's costs.
- 7.216 Accordingly, Ofcom considers that BT is likely to enjoy larger economies of scale at the local access level and that this contributes to BT's SMP in the low bandwidth TISBO market.

### Supply-side: Economies of scope

- 7.217 Economies of scope arise in the TISBO market if the costs incurred to supply TISBO services can be shared with various other products. Where this applies, the ability to derive SMP from this feature of the market is influenced both by the range of products and services that are produced from common inputs and by the volume of each of these various products and services over which costs are shared.

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<sup>137</sup> Europe Economics' calculations were based on a "bottom-up", economic-engineering model of traditional interface leased line costs. Such models are typically very useful in informing the way in which costs vary with volume, because they seek to identify the relevant cost drivers and the way in which costs arise.

- 7.218 A key economy of scope for TISBO services is the possibility of using duct to carry products and services other than TISBO. As the costs of digging and laying ducts are substantial and independent of bandwidth, all communications providers try to maximise the number of products that can be supplied using the same ducts.
- 7.219 Symmetric broadband origination can be used to carry products other than leased lines, though to a lesser extent than trunk segments. Communications providers have indicated that they use TISBO services to provide frame relay, ATM, IP-VPN, Internet access, direct voice as well as wholesale leased lines of different bandwidths.
- 7.220 Ofcom believes that BT enjoys larger economies of scope than OCPs. While most OCPs offer the same range of services as BT (and can therefore spread the cost of duct and TISBO common inputs over a range of products and services), BT's share of most of these services is generally higher than the share of its competitors. This is reflected by the fact that in 2006, BT accounted for 57% of total UK turnover by fixed telecoms providers.<sup>138</sup> Its share of the wholesale fixed telephony market is likely to be even higher.
- 7.221 Ofcom therefore considers that BT enjoys greater economies of scope than OCPs and that this strengthens BT's market position in the TISBO market.

#### Supply side: Absence of potential competition

- 7.222 As noted in the discussion of the retail market, the threat of potential entry can prevent firms from raising prices above competitive levels. Ofcom believes, however, that the likelihood of substantial entry by new players in the market for low bandwidth TISBO services is low. Most if not all the major Communication Providers are already present in this market and (as discussed immediately below) there are significant barriers to entry into this market.

#### Supply side: ease of market entry

- 7.223 Ofcom considers that there are multiple obstacles to new firms wishing to enter the low bandwidth TISBO market, many of which are likely to be substantial. As noted above, the market is characterised by significant economies of scale and scope, which enable BT (the largest supplier of TISBO and other related services) to produce at lower average cost than its smaller rivals. The fact that most of the investments that are required to enter this market are sunk costs further increases the risk for firms that are uncertain of their ability to successfully establish themselves in the market, constituting an additional entry barrier in the market.
- 7.224 As a national incumbent, BT already has in place the assets that are required for the provision of low bandwidth leased lines. It has already incurred the sunk costs involved in digging trenches, ducting and cabling, and obtaining any necessary way-leaves – the costs which constitute the most expensive components of the access network. This gives BT a very substantial advantage over would-be competitors in the provision of TISBO.
- 7.225 Ofcom has been provided with general estimates of the costs incurred by OCPs in building fibre. It is difficult to compute a standard per kilometre cost of building fibre because of several factors which affect costs differently under different scenarios.

<sup>138</sup> Based on *Ofcom Communications Market Report 2007*, Figure 4.18: Share of retail and wholesale telecoms industry revenue in 2006. Original source includes mobile network operators.

Estimates of the cost of fibre appear to range from around £50 to £135 per metre. The largest component is the cost of digging duct, which varies depending on factors including whether the digging occurs in rural or urban areas, on the charges imposed by local councils, and depending on whether digging takes place in footways or carriageways. These costs are said to have risen in urban areas, in large part because increasingly digging is having to take place in carriageways (rather than in footways), where it is more disruptive of traffic and hence costlier. Assuming an average length of a low bandwidth TISBO circuit of around 13km (consistent with the information provided by BT), and assuming that these costs cannot be shared over various leased lines (as would occur if, for example, an OCP had various customers at any one site or is able to share infrastructure between sites) this implies a cost of £650,000 – £1,755,000 per circuit.

- 7.226 This cost would increase if way-leaves were required (which is said to be the case around 50% of the time build takes place). The standard cost of obtaining a way-leave is £1,500 – £3,500 per connection, but this cost can sometimes be spread over various customers. The requirement to obtain way-leaves implies that even over low distances, building may not always be viable.
- 7.227 Although these barriers to some degree characterise all the leased line markets, their significance as obstacles to firm wishing to enter the market are at their greatest in the low bandwidth traditional interface market because infrastructure costs as a proportion of expected (retail) revenues are relatively high.
- 7.228 In summary, Ofcom believes that the low bandwidth TISBO market is characterised by very high barriers to entry, which are an important source of market power for BT. This is why Ofcom views the ease of market entry criterion as essential for its market power assessment.

#### Supply side: Barriers to expansion

- 7.229 The factors that create barriers to entry in the market for low bandwidth TISBO services equally impede the expansion by firms already operating in the market.
- 7.230 Data provided by OCPs suggests that they are able to serve new customers but are generally only prepared to do so if the customer is within a short distance of their existing network. This is particularly the case for low bandwidth circuits, because the revenues that can be earned from retail leased lines do not generally justify standalone investments in low bandwidth circuits. Where way-leaves are required, or where a customer is only prepared to acquire retail lines pursuant to a short-term contract, it is generally not economical for OCPs to build new infrastructure.

#### Demand-side: Countervailing buying power

- 7.231 The buyers of services in the market for low bandwidth TISBO services are also suppliers in the market. OCPs generally buy TISBO in locations where they do not own network, although in some instances they opt to self-provide. Ofcom considers that the factors that prevent OCPs from self-providing in greater quantities also explain why it is unlikely that these entities have countervailing buyer power. This fundamentally reflects the barriers to entry and expansion in this market.
- 7.232 The picture is slightly different in respect of MNOs, because some MNOs self-supply RBS backhaul circuits over microwave links. Ofcom's view, however, is that self-provision over microwave is not a close substitute to fibre or copper in the low bandwidth TISBO market. MNOs that have built a significant proportion of their own

network have already self-provided backhaul circuits in sites where it was viable to do so. MNO sites that are currently connected via fibre or copper are generally unsuitable for self-provision through radio (or MNOs would already have connected these sites with microwave). MNOs would therefore need to incur significant investment costs in acquiring new sites to provision RBS backhaul circuits through microwave radio. MNOs would be unlikely to respond to a 10% SSNIP on low bandwidth RBS backhaul by making these investments.<sup>139</sup>

- 7.233 Currently no MNO self-provides low-bandwidth links over copper or fibre, indicating that the same factors which impede OCPs from building these networks also apply to MNOs. In these circumstances mobile operators cannot exert countervailing buying power since self-provision is not a realistic option.

### Previous anti-competitive behavior

- 7.234 As noted above, evidence of previous anti-competitive behaviour in the market under review can suggest that the market is not effectively competitive, because the conduct would not be viable in a competitive market. In this regard, the conduct leading to the complaints referred to in paragraphs 7.145 to 7.154 is consistent with BT having SMP in wholesale TISBO markets, because BT's conduct may not have been viable in an effectively competitive market.
- 7.235 A further relevant Ofcom investigation arose from a complaint made in August 2003 concerned BT discounts available under the NetStream 16 (NS16) and NetStream 16 Longline tariffs (NS16LL).<sup>140</sup> These tariffs are described in detail in Section 5. As that discussion makes clear, NS16 and NS16LL tariffs are offered by BT to MNOs to enable them to build respectively the core and RBS backhaul parts of their network.
- 7.236 The complainant<sup>141</sup> alleged that these discounts made the tariffs unmatchable and were therefore anti-competitive.
- 7.237 Ofcom had serious concerns about some aspects of BT's discount structures and in particular on its use of 'saw tooth' discounts.<sup>142</sup> There were reasonable grounds to suspect that BT was abusing a dominant position in the market for low bandwidth

<sup>139</sup> This is much less likely to be the case in respect of the very high bandwidth market, where switching costs are relatively small in the context of the value of the products being used and so are less likely to impede microwave and fibre being substitutes.

<sup>140</sup> [http://www.ofcom.org.uk/bulletins/comp\\_bull\\_index/comp\\_bull\\_ccases/closed\\_all/cw\\_669/](http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ccases/closed_all/cw_669/)

<sup>141</sup> The complainant wished to remain anonymous.

<sup>142</sup> For each NetStream 16 product there were two charges: an access charge and a circuit rental. Specifically, it was alleged that BT was abusing its dominant position in that:

- BT's access charges for both NS16 and NS16LL were structured such that the access charges were capped at a specified number of sites, after which there was no charge. An OCP seeking to supply a customer which has reached the cap with BT was therefore unable to charge an access charge and has to compete on rental charges alone. These rental charges were also subject to discounting by BT.
- the access charges for NS16LL (terminating segment) were linked to the purchase of NetStream 16 (trunk segment). This tied customers into purchasing both NS16 and NS16LL products from BT and discriminated in favour of BT's downstream trunk segment business;
- the discounts BT offers on access charges for its NetStream 16 (trunk) products were structured to induce customers to obtain all or most of their trunk circuits requirements from BT and therefore operated as an anti-competitive loyalty discount;
- the rental charges for both NS16 and NS16LL were linked and operated so as to tie BT's trunk product and leverage its market power from terminating segments into the trunk market where it faced greater competition.

TISBO services in relation to its tariff structure and pricing for such circuits. During the course of the investigation, Ofcom concluded the 2003/04 LLMR in which it required BT to provide a cost-based RBS backhaul product. Ofcom considered that the introduction of this product was likely to reduce demand for circuits under these tariffs (in particular the NS16LL tariff). In addition, certain issues related to BT's business pricing, including the use of discounts, were raised as part of Ofcom's Telecommunications Strategic Review (however, this mainly focused on retail discount structures, whereas we consider the NS16LL service to be a wholesale product). Subsequently, the complainant withdrew its complaint, prior to Ofcom reaching a formal decision on the subject of the complaint.

### Likelihood of competition developing in the future

- 7.238 Ofcom has assessed whether the SMP that presently characterises the market is likely to be attenuated during the period covered by this review. Ofcom has not been able to identify any developments that would serve to reduce the high structural barriers to entry that characterise the market, which would generate sufficient competitive pressures within the next four years to alter the current finding of SMP.
- 7.239 In particular, Ofcom considers that the low rate of growth which characterises many of the retail leased line markets that make use of low bandwidth TISBO services is likely to prevent BT's wholesale competitors expanding to a scale where they can operate as efficiently as BT.

### **Market for high bandwidth traditional interface symmetric broadband origination above 8Mbit/s up to and including 45Mbit/s in the UK (excluding CELA and the Hull area)**

#### **Summary of conclusions**

- 7.240 Ofcom's view is that BT has SMP in the high bandwidth TISBO market in the UK part from Kingston upon Hull and CELA.
- 7.241 As discussed in detail below, Ofcom considers that the following factors provide BT with SMP in this market:
- The ubiquity of BT's infrastructure and the fact that such infrastructure is not easily duplicated;
  - BT's ability to exploit economies of scale and scope;
  - The existence of significant barriers to entry and expansion, including as a result of sunk costs. OCPs have informed us that it is not economical for them to expand beyond their current size in this market. New network build is generally only economical if very short lines are required and if there are no other impediments to competition (e.g. the need to obtain way-leaves).
- 7.242 That this is the case is reflected in BT's persistently high share in this market.

- 7.243 The sections below present our analysis of the criteria that are most relevant to the assessment of SMP in wholesale markets.

### Quantitative information criteria: market shares

- 7.244 As set out in the table below, BT's 2006 volume share in this market is 45%. This is above the 40% level that the EC considers gives rise to concerns of dominance, but is below the 50% level that the Commission regards as creating (in and of itself) a presumption of dominance. This makes it particularly important to consider other evidence that informs whether BT is likely to have SMP both now and in the foreseeable future.

**Table 21: Volume shares for high bandwidth traditional interface symmetric broadband origination in the UK (excluding CELA and the Hull area) (2006)**

	Share (%)
BT	45
KCOM*	19
C&W	18
Thus	11
Others (no other CP had >2%)	7

\* These volumes correspond to KCOM's activities outside the Hull area  
Source: CP data, Ofcom

- 7.245 The size of BT's competitors in the market can shed light on whether a 45% market share is likely to indicate that BT has SMP. BT's two largest competitors in this market have shares respectively equal to 19% and 18% (i.e. less than half the size of BT). Thus (the other significant player in the market) has a share of 11%, although its wholesale activities are largely confined to Scotland (indicating that it is not in a position to constrain BT in most other parts of the relevant geographic market). These competitors' ability to expand is considered at greater length under the discussion of 'barriers to expansion'.
- 7.246 Another important matter to consider is whether BT's share has fallen significantly since the last market review. If not, this could constitute evidence of persistent market power i.e. it would indicate that BT's competitors could not expand even over the longer term in response to an attempt by BT to exert market power.
- 7.247 It is not possible to directly compare BT's current market share to the shares cited in the last leased line market review. This is because in the last market review, the high bandwidth market comprised the whole of the UK excluding Hull and also because the market was defined to include 155 Mbit/s lines. In 2001/02, BT was estimated to have a volume share of that market equal to 44%. The 2003/04 Review indicated that BT's share of 155 Mbit/s lines did not differ significantly from its share of 34/45 Mbit/s lines, indicating that BT also had around 44% of 34/45 Mbit/s lines. Thus, BT's volume share of sales of 34/45 Mbit/s lines does not appear to have fallen since around the last market review. This is consistent with there being impediments to BT's competitors' ability to expand in the market and with BT having SMP.

## Quantitative information: Excess pricing and profitability

- 7.248 We examined BT's profitability in this market to analyse whether it is earning returns about its cost of capital. If so, this could suggest that BT has SMP. Information is not available regarding the specific ROCE of serving the UK excluding Hull and CELA. Rather, the information below reflects BT's nationwide revenues and costs i.e. it does not exclude profits associated with serving the CELA market, in relation to which a different ROCE may apply.<sup>143</sup>
- 7.249 BT's published regulatory financial statements do not disaggregate its financial performance according to our revised bandwidth splits. However, BT's (unaudited and unpublished) additional financial statements do map onto our revised market definitions. This information is set out in Table 22. There is no prior year information against which we can compare the 2006/07 results because of recent changes to the manner in which BT estimates the profitability of its origination services.<sup>144</sup>

**Table 22: traditional interface origination market profitability for 2006/07 – high bandwidth**

All in £m	ROCE %	Turnover	Profit	MCE
<b>TISBO 34/45 mb/s</b>	6%	67	9	162

Source: BT additional regulatory financial statements

- 7.250 As with BT's low bandwidth market reported returns, returns for 34/45 Mbit/s appear to be well below the cost of capital.
- 7.251 Ofcom has decided however not to place much weight on BT's reported ROCE for 34/45 Mbit/s services. This is for broadly the same reasons set out in Ofcom's consideration of these matters as they apply to the low bandwidth TISBO market. Additionally, BT's ROCE in respect of 34/45 Mbit/s services is only available for one year and corresponds to a geographic boundary that is broader than the market which is under consideration.

## Qualitative criteria

- 7.252 The following paragraphs consider the SMP qualitative criteria identified by the EC and ERG. Ofcom considers that many of the impediments to competition developing in the low bandwidth TISBO market also apply to this market. As is the case in the low bandwidth TISBO market, participating in the high bandwidth TISBO market in the UK excluding CELA and Hull requires an operator to make substantial upfront investments in network infrastructure. The relatively low amounts of traffic that are transported over this infrastructure and the corresponding low revenues that are earned in the retail markets downstream of these network inputs mean that OCPs are often reluctant to bear the risks of entering or expanding in this market.

<sup>143</sup> Without investigating the particular revenues and costs associated with BT's Central London Charging Zone (CLZ) – information which is not available to us – it is difficult to predict whether excluding these services would significantly change the reported returns.

<sup>144</sup> In 2006/07, BT revised the cost methodology that it uses to attribute PPC circuits between trunk and originating markets. These changes were made so that cost apportionments from the underlying circuit costing system (CTCS) were more closely aligned with the methodology for the pricing of trunk segments i.e. parent Tier 1 nodes.

- 7.253 We have also been informed that 34/45 Mbit/s retail lines are increasingly perceived as a legacy service and are being superseded by different services, including higher bandwidth 155 Mbit/s lines. The possible decline in this market is also likely to impede new entry and expansion in this market.

#### Supply-side: Control of Infrastructure not easily replicated

- 7.254 Much of the discussion of this criterion in Ofcom's analysis of SMP in the market for low bandwidth TISBO also applies to the current market. Broadly speaking, BT is at an advantage relative to its competitors as a result of having in place network infrastructure throughout most of the UK. This enables it to supply high bandwidth TISBO segments in most places in the country within a reasonable period and without incurring substantial additional costs. In contrast, OCPs do not have extensive local networks throughout the UK. They would need to incur substantial sunk costs to extend local infrastructure.
- 7.255 The above considerations currently lead Ofcom to consider that BT's control of the infrastructure required to provide TISBO services creates a significant entry barrier in this market.

#### Economies of scale

- 7.256 Ofcom considers that this market is characterised by economies of scale and that much of the general discussion set out above in relation to low bandwidth TISBO markets applies equally to this market.
- 7.257 Although BT's ability to exploit these economies of scale is likely to be lower in this market due to its lower market share in this market (45% as against 89%), BT is still over twice the size of its next largest competitor. This implies that BT is likely to be able to exploit scale economies to a larger degree than its competitors. Further, the fact that BT is the largest player in most parts of the UK indicates that overall BT is likely to serve more customers using the same equipment at local exchanges and at third party sites and so obtain either better equipment utilisation, and/or use higher capacity equipment that is cheaper on a per customer basis. BT's large market share also implies that it can benefit from existing ducts to a greater extent than OCPs. As a result, Ofcom considers that BT is likely to enjoy larger economies of scale at the local access level than OCPs.

#### Economies of scope

- 7.258 BT is likely to obtain considerable advantages as a result of the fact that the investments that it has made in trenches and ducts to serve this market can also be used to serve other markets in which it has a very large presence (e.g. low bandwidth TISBO). Ofcom considers therefore that the logic that applies in the low bandwidth TISBO market also applies to this market.
- 7.259 Ofcom therefore considers that BT enjoys greater economies of scope than OCPs and that this strengthens BT's market position in the TISBO market.

#### Barriers to entry

- 7.260 As discussed in the corresponding section in the low bandwidth TIBSO services, as a national incumbent, BT has sunk a significant share of the network costs associated with the provision of leased lines, such as digging and laying ducts, which are very expensive components of the access network. This gives BT a very



substantial strategic advantage over would-be competitors in the provision of TISBO. In contrast, entrants generally need to sink costs in order to compete at the wholesale level.

- 7.261 These factors are likely to be as relevant to high bandwidth TISBO services in the UK excluding Hull and CELA. The existence of considerable economies of scale and scope continues to make it hard for entrants to compete on an equal basis with BT in this market. For example, an entrant into high bandwidth TISBO services is likely to operate at a smaller scale than BT, sell a narrower range of products and be unable to engage in as much infrastructure sharing. Despite the higher revenues that can be earned by supplying high bandwidth retail leased lines, outside the CELA area these entrants are unlikely to serve a sufficiently high number of customers in this or other TISBO markets to be willing to make the investments necessary to constrain any attempt by BT to exercise SMP.
- 7.262 In summary, Ofcom believes that the high bandwidth TISBO market is characterised by high barriers to entry. Although these are potentially not as significant than at lower bandwidths, they are still sufficient to provide a source of market power for BT.

#### Barriers to expansion

- 7.263 The discussion of this criterion in Ofcom's analysis of SMP in the market for low bandwidth TISBO, in Ofcom's opinion also applies to the market for high bandwidth TISBO.
- 7.264 Information provided by OCPs supports the view that they are able to serve new customers but are generally only prepared to do so if the customer is within a short distance of their existing network. The revenues that can be earned from high bandwidth retail leased lines do not generally justify standalone investments in high bandwidth circuits. Where way-leaves are required, or where a customer is only prepared to acquire retail lines pursuant to a short-term contract, it is generally not economical for OCPs to build new infrastructure in this market.

#### Countervailing buyer power

- 7.265 The discussion of this criterion in Ofcom's analysis of SMP in the market for low bandwidth TISBO, in Ofcom's opinion, also applies to the market for high bandwidth TISBO.

#### Previous anti-competitive behavior

- 7.266 As noted above, evidence of previous anti-competitive behaviour in the market under review can suggest that the market is not effectively competitive, because the conduct would not be viable in a competitive market. In this regard, the conduct leading to the complaints referred to in paragraphs 7.145 to 7.154 is consistent with BT having SMP in wholesale TISBO markets generally, because BT's conduct may not have been viable in an effectively competitive market.

#### Likelihood of competition developing in the future

- 7.267 Ofcom has assessed whether the SMP that presently characterises the market is likely to be attenuated during the period covered by this review. There is no evidence that suggests that this market is prospectively competitive, in part because our discussions with the operators that acquire these services indicate that

this market is not likely to grow in the future. This is likely to prevent BT's wholesale competitors expanding to a scale where they can operate as efficiently as BT.

## **Market for high bandwidth traditional interface symmetric broadband origination above 8Mbit/s up to and including 45Mbit/s in the CELA**

### **Summary of conclusions**

- 7.268 Ofcom's view is that no player in the market has SMP in the high bandwidth CELA TISBO market and that, therefore, the market is effectively competitive.
- 7.269 The small territory covered by this market, combined with the high number of retail customers within the area, enable various Communications Providers to attain scale in this market. The economies of density that can be attained in this market also prevent BT operating at an advantage as a result of any economies of scope that it is able to attain. These conclusions are reflected in the relatively unconcentrated nature of the market (see market shares presented below). Further, Colt's 45% market share is unlikely to indicate that it has SMP because various other players have invested in networks covering the whole area of the CELA.
- 7.270 The paragraphs below present Ofcom's analysis of why the SMP criteria most relevant to this market indicate that there is effective competition in the market under review.

### **Quantitative information criteria: market shares**

- 7.271 As set out in Table 23 BT's volume share in the market for very high bandwidth traditional interface symmetric broadband origination is around 20%. This is below the 25% level at which the Commission would normally dismiss concerns about unilateral dominance without the need for further analysis. There are various other significant players in the market. Ofcom considers that the structural features of the market mean that the market is effectively competitive and that no single operator has SMP. In particular, Colt's 45% market share is unlikely to indicate that it has SMP because various other players have invested in networks covering the whole area of the CELA and because Colt's share of the market is not likely to result from incumbency advantages in the market.

**Table 23: Volume shares for high bandwidth traditional interface symmetric broadband origination in the CELA (2006)**

	<b>Share (%)</b>
Colt	45
BT	20
C&W	14
Verizon	9
Thus	6
Others (no other CP had >3%)	6

Source: CP data, Ofcom

## **Quantitative information: Profitability**

- 7.272 Data on profitability in the market for the UK as a whole, including the CELA is set out in paragraphs 7.248 to 7.251 above. Data for the CELA alone are not available. In any case, Ofcom has decided not to place much weight on these figures for broadly equivalent reasons to those set out in the discussion above.

## **Qualitative information**

- 7.273 The following paragraphs consider the SMP qualitative criteria identified by the EC and ERG. Criteria which may give rise to SMP on the supply-side are first considered, followed by criteria which may give rise to SMP on the demand side. Finally, we consider evidence of previous anti-competitive behaviour on the part of BT in this market.

### Supply-side: Control of Infrastructure not easily replicated

- 7.274 The network reach analysis presented in Section 6 substantiates the fact that there is substantial facilities-based competition in this market.

### Supply-side: Economies of scale

- 7.275 Even though high fixed costs must be incurred to enter this market, BT is not likely to operate at any particular cost advantage. Indeed it is no longer the largest supplier in this market and there are a number of other operators approaching similar scale.
- 7.276 Therefore no one player is likely to derive particular advantages from the economies of scale that characterise this market.

### Supply-side: Economies of scope

- 7.277 Because of the very high volumes of traffic that are carried over high bandwidth TISBO circuits, Ofcom considers that the ability to derive additional efficiencies from economies of scope is less likely to create advantages for an operator in this market.

### Supply side: Absence of potential competition

- 7.278 A large number of operators are already present in this market. It is therefore doubtful that additional entry is required to increase competition in the market.

### Supply side: Ease of market entry

- 7.279 Although markets for TISBO are characterised by large sunk costs the significant entry made by OCPs in this market (reflected in their high share of the market) suggests that sunk costs have not deterred entry in this market.
- 7.280 It seems likely that the large number of customers within this market provide some assurance to CPs that sunk costs that are incurred in serving any one customer are likely to be recovered in this market, even if they lose the custom of a particular customer. For example, if one end-user within a building were to cease acquiring high bandwidth services before the initial investment in infrastructure had paid off, a CP could attempt to win the custom of other end-users within the building. In other

words, the high customer density in this market may in a sense be said to have reduced the “sunkness” of the costs which must be incurred to enter it.

#### Supply side: Barriers to expansion

- 7.281 Ofcom considers that the factors which imply that there are few significant barriers to entry in this market also imply that there are few barriers to expansion in this market. Just as sunk costs and economies of scale and scope have not impeded new players entering the market, these factors do not appear to impede existing players from expanding in the market.

#### Demand side: Countervailing buyer power

- 7.282 Ofcom considers that significant countervailing buyer power is likely to exist in this market. This is because the main customers of these services (i.e. Communication Providers) can generally either credibly threaten to use an alternative supplier or can self-provide. This is reflected in the relatively high rates of interconnection in the market (discussed in Section 6).

#### **Evidence of past anti-competitive conduct**

- 7.283 Ofcom is not aware of any evidence of past anti-competitive conduct that specifically relates to this particular market. Some of the complaints referred to above however may have included the CELA without specifically identifying it. However, in the absence of SMP, much of the conduct which formed the basis to the complaints would not have been anti-competitive.

## Market for very high bandwidth traditional interface symmetric broadband origination over 45 Mbit/s in the UK (excluding the Hull area)

### Summary of conclusions

- 7.284 Ofcom's view is that no player in the market has SMP in the very high bandwidth TISBO market and that, therefore, the market is effectively competitive.
- 7.285 The very high revenues that can be earned in the downstream retail markets that correspond to this market mean that Communications Providers are generally willing to sink the high fixed costs that are necessary to operate in this market. Further, the very large amount of traffic that can be carried over a single high bandwidth TISBO service enables Communications Providers to attain scale in this market and prevent other factors such as economies of scope from placing BT at a cost advantage. These conclusions are reflected in the relatively unconcentrated nature of the market (see market shares presented below).
- 7.286 The sections below present Ofcom's analysis of why the SMP criteria do not impede effective competition in the market under review.
- 7.287 The sections below present our analysis of why the criteria that are most relevant to the assessment of SMP in wholesale markets do not confer SMP on BT or any other operator in the market under review.

### Quantitative information criteria: market shares

- 7.288 As set out in Table 24, BT's volume share in the market for very high bandwidth traditional interface symmetric broadband origination ranges from between 26-28%. This is very close to the 25% level at which the Commission would normally dismiss concerns about unilateral dominance without the need for further analysis. There are various other significant players in the market, including the various MNOs with a collective share of 23-30%, C&W with around 15-16%, and Colt with around 11-12% of the market.

**Table 24: Volume shares for very high bandwidth traditional interface symmetric broadband origination in the UK (excluding the Hull area) (2006)**

	Share (%)
BT	26-28
MNO self-supply	23-30
C&W	15-16
Colt	11-12
KCOM*	6
THUS	6
Others	8

\* These volumes correspond to KCOM's activities outside the Hull area  
Source: CP data, Ofcom

- 7.289 It is not possible to compare BT's current market share to its share in the last market review. This is because in the 2003/04 Review, different bandwidth splits applied and so Ofcom did not compute market shares for the current set of products.
- 7.290 It is Ofcom's view that BT's current low market share suggests that BT does not have SMP in this market.

## Quantitative information: Profitability

7.291 BT's published regulatory financial statements do not disaggregate its financial performance according to the bandwidth splits that correspond to our revised market definitions. However, BT's (unaudited and unpublished) additional financial statements do map onto our revised market definitions. A profitability measure derived from this data for 2006/07 is set out in Table 25 below. There is no equivalent information for the previous year because of recent changes to the manner in which BT estimates the profitability of its origination services.<sup>145</sup>

**Table 25: traditional interface origination market profitability for 2006/07 – very high bandwidth**

All in £m	ROCE %	Turnover	Profit	MCE
TISBO 140/155 mb/s	48%	132	76	159

7.292 The ROCE presented above indicates that profitability for very high bandwidth TISBO services was high in 2006/07. Specifically, BT's profitability (48% on a fully attributed cost basis) was well above its cost of capital (11.4%) and significantly higher than its returns in lower bandwidth TISBO markets.

7.293 However, as was the case for the low and high bandwidth TISBO, Ofcom has decided not to place much weight on BT's ROCE in this market. Specifically, BT's high fully attributed cost profitability in this market does not necessarily indicate that BT has SMP. Instead, it significantly reflects the recovery of common costs assumed when the last set of charge controls were set. BT's chosen price structure exhibits a stronger tendency for price to increase with bandwidth than its cost structure, as given by the way costs are allocated in its accounts. This pricing structure may be efficient and indeed it may be consistent with a competitive market (based on infrastructure competition). It may reflect demand side factors (willingness to pay) in recovering a greater proportion of fixed costs (which are common between circuits of different bandwidths) from higher bandwidth circuits than is allocated to them under the accounting rules.

7.294 Our broad interpretation is also consistent with statements from various MNOs, which have informed us that the market for very high bandwidth TISBO services is highly competitive.

## Qualitative information

7.295 The following paragraphs consider the SMP qualitative criteria identified by the EC and ERG. Criteria which may give rise to SMP on the supply-side are first considered, followed by criteria which may give rise to SMP on the demand side. Finally, we consider evidence of previous anti-competitive behaviour on the part of BT in this market.

<sup>145</sup> In 2006/07, BT revised the cost methodology that it uses to attribute PPC circuits between trunk and originating markets. BT did estimate the impact of changing the methodology for attributing transmission costs between origination and trunk for the prior year but this was only prepared at the level of the market that was defined in the 2004 market review i.e. combining 140/155 and 34/45 Mbit/s circuits

### Supply-side: Control of Infrastructure not easily replicated

- 7.296 The costs that are incurred in supplying a single very high bandwidth TISBO circuit do not differ substantially from the costs of serving lower bandwidth markets. The costs of fibre and duct are independent of bandwidth and so the main cost item which differs between these markets is the cost of the electronic equipment. High bandwidth TISBO services generally require optical transmission, whereas lower bandwidth services require electrical transmission (the latter being cheaper).
- 7.297 Against this, the revenues that can be earned from the downstream services that are provided over a single very high bandwidth TISBO circuit are much higher than the revenues that can be earned over retail services provided over lower bandwidth TISBO markets.
- 7.298 The fact that this market is characterised by a relatively small number of very high value circuits mean that OCPs are generally willing to invest in the high fixed costs that are necessary to serve particular customers. This implies that BT's control of infrastructure is unlikely to be a source of SMP in this market.
- 7.299 This is consistent with the fact that most players that participate in the retail market also have significant shares of the corresponding wholesale market.
- 7.300 Similarly, in the case of MNOs, we know that these players can and do deploy their own connectivity as an alternative to acquiring very high bandwidth TISBO services. Information provided to Ofcom by MNOs indicates that all but one MNO choose to self-supply substantial quantities of very high bandwidth TISBO services, albeit to differing degrees. As noted above, MNO self-supply over fibre and microwave accounts for approximately 23-30% of the market.

### Supply-side: Economies of scale

- 7.301 Even though high fixed costs must be incurred to enter this market, BT is not likely to operate at any particular cost advantage. There are a number of other operators in this market with broadly similar scale to BT.
- 7.302 Therefore BT is unlikely to derive any advantages from the economies of scale that characterise this market.

### Supply-side: Economies of scope

- 7.303 Because of the very high volumes of traffic that are carried over high bandwidth TISBO circuits, Ofcom considers that the ability to derive additional efficiencies from economies of scope is less likely to create advantages for an operator in this market. Therefore economies of scope are not likely to create SMP for BT in this market.

### Supply side: Absence of potential competition

- 7.304 A large number of operators are already present in this market. It is therefore doubtful that additional entry is required to increase competition in the market.

### Supply side: Ease of market entry

- 7.305 As noted in the discussion above on low and high bandwidth TISBO markets, markets for TISBO are characterised by large sunk costs. However, the significant

entry made by OCPs in this market (reflected in their high share of the market) suggests that sunk costs do not deter entry in this market. It seems likely that the relatively high expected retail revenues that can be earned from retail products offered over very high bandwidth circuits provide an assurance to OCPs that sunk costs can be recovered, thereby making the market more attractive to potential entrants.

- 7.306 Ofcom therefore does not consider that issues of BT's ubiquity and the importance of sunk costs currently prevent OCPs from competing in the market for very high bandwidth TISBO. This represents a significant distinction between very high bandwidth TISBO and the lower bandwidth markets, and has a significant impact on Ofcom's analysis.

#### Supply side: Barriers to expansion

- 7.307 Ofcom considers that the factors which imply that there are few significant barriers to entry in this market also imply that there are few barriers to expansion in this market. Just as sunk costs and economies of scale and scope do not impede new players entering the market, these factors do not appear to impede existing players from expanding in the market.

#### Demand side: Countervailing buyer power

- 7.308 Ofcom considers that significant countervailing buyer power is likely to exist in this market. This is because the main customers of these services (i.e. OCPs and MNOs) can generally either credibly threaten to use an alternative supplier or can self-provide (as is reflected in BT's relatively low share of the market).

#### **Evidence of past anti-competitive conduct**

- 7.309 Ofcom is not aware of any evidence of past anti-competitive conduct in this market.

*Question 9: Do stakeholders agree with our assessment of SMP in wholesale TISBO markets in the UK excluding the Hull area?*



## Market for low bandwidth alternative interface symmetric broadband origination up to and including 1Gbit/s in the UK excluding the Hull area

### Summary of conclusions

- 7.310 Ofcom considers that BT has SMP in this market. Our broad reasoning is similar to that which applies in the low bandwidth TISBO market. Our conclusion is based on an analysis of primarily the following SMP criteria:
- BT's high market share;
  - The high profits that BT appears to earn in respect of the relevant services;
  - the advantages enjoyed by BT due to the ubiquity of its infrastructure and the existence of barriers to entry and expansion, notably those provided by sunk costs;
  - the greater economies of scale and scope enjoyed by BT.
- 7.311 BT's SMP is not offset by countervailing buyer power or by any other factor which could overcome BT's incumbency advantages. In particular, the low opportunities for aggregating traffic in this part of the network, together with the correspondingly low expected retail revenues earned in relation to low bandwidth AISBO services mean that operators are often reluctant to extend their network footprint in order to serve this market.
- 7.312 Further, the fact that BT's share of the market has fallen only marginally since the last market review indicates that BT's SMP is likely to persist in this market.
- 7.313 The sections below present our analysis of the criteria that are most relevant to the assessment of SMP in wholesale markets.

### Quantitative information criteria: market shares

- 7.314 We have estimated BT's 2006 share of the low bandwidth alternative interface market to be 73%. The next largest player is Virgin with 9% of the market. BT's share is well above the thresholds that the Commission normally considers give rise to competition concerns, and therefore creates a strong presumption that BT has SMP.

**Table 26: Volume shares for low bandwidth alternative interface symmetric broadband origination in the UK (excluding the Hull area) (2006)**

	Share (%)
BT	73
Virgin	9
Others (no other CP had >4%)	18

Source: CP data, Ofcom

- 7.315 Moreover, BT's share appears to have fallen very little since 2004, which indicates that BT's dominance is not simply transitory. In 2004, BT's market share of the

overall AI market was 75% (which encompassed all bandwidths), and its share of AISBO services below 100 Mbit/s was estimated to be between 75% and 80%.

### Quantitative information: Profitability

- 7.316 Table 27 below presents information regarding the profits that BT earned in 2006/07 for its low bandwidth AISBO services. This is based on information from BT's additional regulatory financial statements, a set of unpublished and unaudited statements that are consistent with BT's published regulatory financial statements. Only one year's results are presented as BT reported at a less granular level in previous years.
- 7.317 BT's reported alternative interface services comprise wholesale extension services (WES), wholesale end to end extension services (WEES) and backhaul extension services (BES).
- 7.318 The information set out in Table 27 suggests that BT earns on a fully attributed cost basis well above its cost of capital. Its overall ROCE for this market was 20% and it generally earned high ROCE for the individual components of this market. While there is significant variation in returns across the bandwidths, this may reflect BT's current freedom to recover common costs as it sees fit. In particular, BT's chosen price structure exhibits a stronger tendency for price to increase with bandwidth than its cost structure, given the way costs are allocated in its accounts. This pricing structure may be efficient and indeed can be consistent with a competitive market (based on infrastructure competition). It may reflect demand side factors (willingness to pay) in recovering a greater proportion of fixed costs (which are common between circuits of different bandwidths) from higher bandwidth circuits than is allocated to them under the accounting rules.

**Table 27: Alternative interface origination market profitability for 2006/07 – all bandwidths**

All figures in £m	RoCE	Turnover			Profit	MCE
	%	Total	Internal	External		
<b>AISBO services by bandwidth</b>						
10 mb/s	1%	✕	✕	✕	✕	✕
100 mb/s	37%	✕	✕	✕	✕	✕
Other (all sub 1 000 mb/s)	64%	✕	✕	✕	✕	✕
Subtotal sub 1 000 mb/s	15%	✕	✕	✕	✕	✕
1 000 mb/s	100%	✕	✕	✕	✕	✕
Total	20%	298	210	88	127	630

Source: BT additional regulatory financial statements

### Supply-side: Control of Infrastructure not easily replicated

- 7.319 As is the case with TISBO circuits, AISBO circuits are not easy to duplicate. Apart from taking time and money to build, large upfront investments in fibre and duct have to be sunk in order to serve this market. In the case of AISBO circuits, a relatively high proportion of costs are made up of building duct and fibre. These costs are not incurred on an equal basis by BT and OCPs. Rather BT has a very significant cost advantage because of the ubiquity of its network.

- 7.320 Ofcom considers that the assessment of this criterion under the discussion on the low bandwidth TISBO market also generally applies to the low bandwidth AISBO market.

### **Supply-side: Economies of scale**

- 7.321 The economies of scale that characterise the provision of TISBO services also apply to the provision of AISBO services. The main economies of scale in supplying AISBO derive from the large one-off costs required to build ducts and lay fibre (once duct has been built and fibre laid, the incremental cost of supplying additional AISBO services over these ducts and fibre is relatively small).
- 7.322 Ofcom considers that the assessment of this criterion under the discussion on the low bandwidth TISBO market also generally applies to the low bandwidth AISBO market.

### **Supply-side: Economies of scope**

- 7.323 Economies of scope arise if the costs incurred in supplying one service can also be shared with other products. This is the case in the AISBO market, because the cost of digging duct and laying fibre can be used to carry a range of products and services apart from AISBO services. As these costs account for a high proportion of total costs, all communications providers try to maximise the number of products that can be supplied by means of the same duct and fibre. BT is likely to enjoy greater economies of scope than OCPs because it offers a relatively large number of products and because its share of most of these services is high. Therefore, BT can spread the costs of the AISBO common inputs over a larger array of products and services.
- 7.324 Ofcom therefore considers that the assessment of this criterion under the discussion on the low bandwidth TISBO market also generally applies to the low bandwidth AISBO market.

### **Supply side: ease of market entry**

- 7.325 As with low bandwidth TISBO services, Ofcom considers that there are multiple, substantial obstacles to new firms wishing to enter the low bandwidth AISBO market. As noted above, the market is characterised by significant economies of scale and scope, which enable BT (the largest supplier of AISBO and other related services) to produce at lower average cost than its smaller rivals. The fact that most of the investments that are required to enter this market are sunk costs (i.e. costs that cannot be recovered if a firm decides to exit the market) further increases the risk for firms that are uncertain of their ability to successfully establish themselves in the market, constituting an additional entry barrier in the market.
- 7.326 Ofcom therefore considers that the assessment of this criterion under the discussion on the low bandwidth TISBO market also generally applies to the low bandwidth AISBO market.

### **Supply side: Barriers to expansion**

- 7.327 The factors that create barriers to entry in the market for low bandwidth AISBO services equally impede expansion by firms already operating in the market. This reduces the scope for competition within the low bandwidth AISBO market.

- 7.328 Ofcom therefore considers that the assessment of this criterion under the discussion on the low bandwidth TISBO market also generally applies to the low bandwidth AISBO market.

### **Countervailing buyer power**

- 7.329 Ofcom's view is that buyer power is very unlikely to mitigate BT's market power in the AISBO market. The reasoning that applies to the low bandwidth TISBO market also applies here.

### **Evidence of past anti-competitive conduct**

- 7.330 As noted above, evidence of previous anti-competitive behaviour affecting the market under review can indicate that a market is not effectively competitive, either because the conduct would not itself be viable in a competitive market or because the conduct itself reduces competition in the market.
- 7.331 Ofcom has received one complaint since the 2003/04 Review regarding an allegation of BT's anti-competitive conduct in connection with the supply of AISBO. Specifically, a CP lodged a complaint with Ofcom on 11 May 2007 regarding BT's WES/WEES product portfolio. In the complaint the CP alleged that wholesale price changes announced by BT on 14 March 2007 were not cost-orientated, contrary to a requirement imposed under the 2003/04 Review (i.e. BT's SMP condition HH3). The CP also complained that BT was in breach of its obligation not to unduly discriminate.
- 7.332 In particular the CP complained that shorter distance lower bandwidth Ethernet circuits, the input it typically uses to compete with BT in retail business connectivity markets, had become much more expensive in comparison with the (retail) services it had been purchasing up until that point. In contrast longer distance higher bandwidth Ethernet circuits, which it typically did not purchase, had become cheaper.
- 7.333 Ofcom decided not to open a full investigation into these complaints, on the basis that the issues raised would be dealt with in the present review. Having now reviewed the issues raised, Ofcom has provisionally concluded that:
- The returns on WES/WEES<sup>146</sup> appear to exceed BT's cost of capital, by the order of over 10%;
  - The current pricing structure for WES/WEES appears to be unbalanced. In particular, margins on connection are much higher than on local end rental charges (in relation to which margins appear to be negative); and
  - backhaul per metre distance charges are significantly above fully attributed cost.
- 7.334 The CP's particular complaint about shorter distance lower bandwidth WES circuits does not appear to be well supported by our analysis. Further details regarding Ofcom's analysis and planned action is set out in Annex 12. For present purposes, it is worth noting that the facts appear to substantiate the view that BT can

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<sup>146</sup> BT prices both wholesale extension services (WES) and wholesale end to end extension services (WEES) in the same way. For the purpose of this analysis we have treated these two services as BT has i.e. as if they are the same service.

potentially price significantly and persistently above cost in this market, which generally indicates that it has SMP. As discussed in Section 8, we propose to introduce a charge control on BT's low bandwidth AISBO services. The details of this control will be the subject of a separate review, which will include additional analysis of service profitability.

## Market for high bandwidth alternative interface symmetric broadband origination over 1Gbit/s in the UK (excluding Hull area)

### Summary of conclusions

- 7.335 Ofcom's view is that no player in the market has SMP in the very high bandwidth AISBO market and that, therefore, the market is effectively competitive.
- 7.336 The very high revenues that can be earned in the downstream retail markets that correspond to this market mean that Communications Providers are generally willing to sink the high fixed costs that are necessary to operate in this market. Further, the very large amount of traffic that can be carried over a single high bandwidth AISBO service enables Communications Providers to attain scale in this market and prevent other factors such as economies of scope from placing BT at a cost advantage. These conclusions are reflected in the relatively unconcentrated nature of the market (see market shares presented below).
- 7.337 The paragraphs below present Ofcom's analysis of why an assessment of the criteria that are most relevant to the assessment of SMP in this market indicate that the market is effectively competitive.

### Quantitative information criteria: market shares

- 7.338 BT's volume share in the market for wholesale alternative interface symmetric broadband origination over 1Gbit/s is 26%. This is very close to the 25% level at which the Commission would normally dismiss concerns about unilateral dominance without the need for further analysis.

**Table 28: Volume shares for high bandwidth alternative interface symmetric broadband origination in the UK (excluding the Hull area) (2006)**

	Share (%)
Colt	45
BT	26
Vtesse	13
Verizon	12
Others (no other CP had >1%)	4

Source: CP data, Ofcom

- 7.339 Moreover, BT's volume share appears to have fallen very steeply since the last market review, when BT was estimated to have in excess of 70% of all sales of AISBO over 1 Gbit/s. Moreover, BT faces a number of competitors in the market, which are either larger than BT or which still have a substantial presence in the market.
- 7.340 We consider that no OCP is likely to have SMP. Even the largest player in the market, Colt with a 45% market share, is likely to be constrained by other players who have a strong presence in the market and by customers who are likely to have countervailing buyer power. Moreover, this market is subject to strong growth, which appears to suggest that there are few barriers to expansion in the market.

### **Quantitative information: Profitability**

- 7.341 BT does not isolate the profitability of alternative interface circuits of above 1 Gbit/s. Therefore, Ofcom has not assessed the profits that BT makes in this market.

### **Supply-side: Control of Infrastructure not easily replicated**

- 7.342 The fact that this market is characterised by a relatively small number of very high bandwidth services means that BT's rollout of very high bandwidth AISBO infrastructure is less extensive than its rollout of other leased line networks. Further, at this stage AISBO services are still generally provided on a point-to-point basis, which implies that some of the economies of density that BT attains in respect of its SDH/PDH infrastructure are less likely to apply in the current market. This places BT on a more equal footing with its competitors, although it still benefits from already having in place many of the trench and duct investments necessary to compete in the market.
- 7.343 In any event, the very high revenues that can be earned in this market from individual customers mean that OCPs are generally willing to invest in the high fixed costs that are necessary to serve particular customers. This implies that BT's control of infrastructure is unlikely to be a source of SMP in this market.

### **Supply-side: Economies of scale**

- 7.344 Ofcom considers that the very large amount of traffic that can be carried over a single high bandwidth Ethernet line enable CPs to attain scale in this market. Even though high fixed costs are incurred when entering this market, BT is not likely to operate at any particular cost advantage.
- 7.345 Therefore BT is unlikely to derive any advantages from the economies of scale that characterise this market.

### **Supply-side: Economies of scope**

- 7.346 Because of the very high volumes of traffic that are carried over high bandwidth AISBO circuits, Ofcom considers that the ability to derive additional efficiencies from economies of scope is less likely to create advantages for an operator in this market. This is reflected by the fact that two players that do not have significant shares in other wholesale market are significant players in this market (i.e. Vtesse and Verizon). Therefore economies of scope are not likely to create SMP for BT in this market.

### **Supply side: Ease of market entry**

- 7.347 The relatively unconcentrated nature of the market reflects the fact that entry barriers are not substantial in this market. It seems likely that the relatively high expected retail revenues that can be earned from retail products offered over very high bandwidth circuits provide an assurance to OCPs that sunk costs can be recovered, thereby making the market more attractive to potential entrants.

### **Supply side: Barriers to expansion**

- 7.348 Ofcom considers that the factors which imply that there are few significant barriers to entry in this market also imply that there are few barriers to expansion in this market. Just as sunk costs and economies of scale and scope do not impede new

players entering the market, these factors do not appear to impede existing players from expanding in the market. Moreover, the growth that characterises this market increases the size of the market addressable to all players seeking to expand in this market.

### **Countervailing buyer power**

7.349 Ofcom considers that significant countervailing buyer power is likely to exist in this market. Low entry barriers in this market enable OCPs (the main buyers of these services) to either self provide or to credibly threaten to use an alternative supplier. This is reflected in BT's relatively low share in the market.

### **Evidence of past anti-competitive conduct**

7.350 Ofcom is not aware of any evidence of past anti-competitive conduct in this market.

*Question 10: Do stakeholders agree with our assessment of SMP in wholesale AISBO markets in the UK excluding the Hull area?*



## National market for trunk segments

### Summary of conclusions

- 7.351 Having reviewed the evidence, Ofcom considers that BT has SMP in the national market for trunk services. Our view is based on:
- BT's high market share (which appears to reflect not only its own retail operations but also a high share of sales to OCPs);
  - BT's apparent profitability in this market;
  - the ubiquity of BT's infrastructure and the number of routes subject to little or no competition;
  - economies of scale;
  - barriers which impede OCPs entering or expanding in this market.
- 7.352 The paragraphs below present Ofcom's analysis of the criteria most relevant to the assessment of SMP in this market.

### Quantitative information criteria: market shares

- 7.353 Before examining the various CPs' shares in this market, the paragraphs below set out the methodology used to calculate market shares.

#### *Methodology used to calculate market shares*

- 7.354 As is the case in other wholesale markets, our calculation of trunk market shares is based on data provided to us regarding CPs' wholesale and retail activities. The calculation of market shares is based on the following identity:

$$\text{Total trunk market} = \text{BT self-supply} + \text{BT sales to OCPs} + \text{OCP self-supply} + \text{OCP sales to other OCPs}$$

- 7.355 Data on 'BT's sales to OCPs' and 'OCP sales to other OCPs' were directly provided to us by CPs.
- 7.356 We did not obtain direct information on CPs' self-supply. However, it was possible to estimate a particular CP's self-supply by examining the total trunk requirements that corresponded to its activities in the various retail leased line markets. Specifically, we assessed a CP's trunk requirements by identifying the physical location of each of the 'terminating ends' of the retail circuits supplied by that CP to its retail customers. As BT has data which enabled us to match each post code in the UK to a particular aggregation node, it was then possible to assess whether a particular retail circuit required a trunk segment and (where this was the case) it was also possible to identify the precise nodes through which the trunk capacity would be provided. This analysis enabled us to determine the total trunk requirements for a CP. In order to calculate the CP's self-supply, we subtracted its

purchases of trunk segments (i.e. trunk purchases from other CPs including BT) from its total trunk retail requirements.

- 7.357 Finally, a CP's trunk market share was calculated by adding its self-supply and any sales it made to OCPs and dividing this by the overall number of trunk segments in the market.<sup>147</sup>

*Bandwidth weightings applied to calculate market shares*

- 7.358 In order to account for the distribution of different bandwidths within the trunk market (and specifically in order to give more weight to higher bandwidth lines) we sought to apply a revenue weighting to particular lines. We developed a proxy for revenue weighting because we were not able to gather revenue information from CPs in a suitable format for our analysis.
- 7.359 Our proxy was in the form of a 'weighted bandwidth' figure. The weightings factors for different bandwidth lines are set out below. These weightings were discussed at length in Ofcom's disaggregated markets consultation and are based on the EC's recommendation on retail leased lines prices.<sup>148</sup>

**Table 29: Bandwidth ranges and weighting factors**

Bandwidth category	
Low (Up to & including 8Mbit/s)	1
High (Above 8Mbit/s and less than 155 Mbit/s)	4.5
Very High (155 Mbit/s and above)	12.5

*Market shares*

- 7.360 Table 30 below sets out BT's trunk market shares using the approach explained above.

**Table 30: Estimates of trunk market shares based on circuit counts**

	BT	OCPs	TOTAL
Retail circuits requiring trunk	41,488	29,842	71,330
OCP provision*	18,063	11,779	29,842
<i>Total wholesale trunk circuits</i>	<i>59,551</i>	<i>11,779</i>	<i>71,330</i>
<b>Upper estimate of BT wholesale share</b>	<b>83%</b>	17%	
<b>Share based solely on retail shares</b>	<b>58%</b>	42%	

\*As the total number of circuits provided by BT and OCPs on the merchant market was higher than total OCP trunk requirements, these figures were adjusted to account for this.

Source: CP data, Ofcom

- 7.361 Table 30 shows an estimate of BT's wholesale trunk market share of 83%. We believe that this is likely to be an upper bound of BT's market share because:

<sup>147</sup> As noted above, our proposed trunk definition only includes transmission between major aggregation nodes. On this basis, our calculations excluded all Tier-1 traffic which falls outside our definition of trunk.

<sup>148</sup> See: <http://www.ofcom.org.uk/consult/condocs/disagg/consultation.pdf> (page 98)

- BT sales of trunk segments to OCPs may be used to supply retail services outside the retail leased line set of markets. Because of the method used to calculate market shares (i.e. deriving a CP's total trunk requirements from its activities across the various retail leased lines market), including these sales in our trunk market share analysis may understate the extent of OCP self-supply in the markets under consideration; and
- The market shares are based on circuit counts, which do not capture the extent to which BT provides only part of a trunk segment to an OCP.

7.362 Therefore, the 83% figure is likely to overstate BT's 'true' position in the trunk market. The discussion below seeks to identify how BT's high market share changes when these assumptions are altered.

#### *Sales of trunk to OCPs and self-supply*

7.363 As noted above, it may be the case that some of the circuits BT sells to OCPs are used to supply services in separate retail markets. While traditional interface retail leased lines account for most of the demand for SDH/PDH trunk services, SDH/PDH trunk segments are also used to provide retail services that fall outside of our market review. The main relevant example of such a service would be a VPN.

7.364 It may be that trunk services used to provide these other services, in principle, also belong in the SDH/PDH trunk market. However, because of our method of calculating market shares (i.e. deriving a CP's total trunk requirements from its activities in the various retail leased line markets), including these sales in our trunk market share analysis may lead to BT's share being overstated. More specifically, including these sales may serve to understate the extent of OCP self-supply in the markets under consideration. This would be less likely to occur if BT's own provision of trunk services also included sales used to supply services outside the retail leased line markets. If so, this could (at least partially) 'cancel out' distortions to market shares caused by BT sales to OCPs including some element of these sales.

7.365 As far as possible, we have sought to avoid including SDH/PDH trunk segments that are used to provide retail services that fall outside of our market review in the data used to calculate market shares. In particular, we sought retail data from CPs that distinguished retail leased lines from other connectivity requirements. However, it remains the case that the data may include some sales that are used for services outside the retail leased line markets.

7.366 In order to deal with this potential issue we conducted a sensitivity analysis that excludes all sales of trunk segments to OCPs by BT. Even assuming that BT and OCPs entirely self-supply their own circuits (i.e. that each CP's share of the (wholesale) trunk market corresponds to its overall position across all the retail leased line markets), BT still has a market share of 58% (see Table 30). Because we know that OCPs do in fact acquire a substantial number of trunk capacity from BT this estimate is likely to substantially underestimate BT's position in the trunk market.

#### *Assessment of trunk segments based on circuit counts*

7.367 Basing market shares on circuit counts may also have the effect of somewhat overstating BT's share of the trunk market.

- 7.368 This is because an OCP may use only a short element of BT's trunk before grooming traffic onto its own trunk network (this would occur if its own trunk nodes were located only a short distance from a BT aggregation node). Our definition of the trunk market (i.e. transmission between major aggregation nodes on the SDH trunk network) ensures that often these sales will not be included in the trunk market share figures. This is because this type of short-distance usage of BT's trunk network would often arise in the case of intra-city routes, which under our proposed market definition are excluded from the trunk market.
- 7.369 Nevertheless, we analyse below BT's market shares by assessing trunk circuits sold in terms of the total distances between relevant Tier 1 nodes (i.e. BT's share of total trunk kilometres). We calculated the particular length of a circuit provided over a trunk route and then added these distances to calculate the total distance of trunk circuits sold.
- 7.370 The revised approach to assessing market shares (set out in Table 31 below) still implies that BT would have an 86% market share (based on total trunk distance), made up of self-supply (59%) and provision to OCPs (27%). Even assuming that OCPs entirely self-supplied their trunk requirements, BT's self-supply would still constitute 59% of total trunk kilometres.

**Table 31: Estimates of trunk market shares based on trunk distances**

Trunk requirements	Wholesale provision			
	BT (self-supply)	BT (to OCPs)	OCPs (self-supply +OCPs)	TOTAL
Total trunk distance (km)	3,812,260	1,779,366	888,654	6,480,279
Trunk shares based on distance	59%	27%	14%	

### Summary

- 7.371 Our analysis suggests that BT's market share is likely to lie somewhere between 58% and 86%. Although this is a broad range, the general conclusion is that BT's share is under any scenario likely to be well above the thresholds that give rise to a presumption of SMP.
- 7.372 BT's high share is explained both by its high share of the various retail markets and by its high share of sales to OCPs.

### Quantitative information: Profitability

- 7.373 As discussed above, ROCE is the profitability measure most often used by economic regulators and competition authorities when assessing whether profit levels are sufficiently high to indicate that a firm has SMP. ROCE is an appropriate indicator of profitability in wholesale markets as the supply of leased lines on a wholesale basis (including trunk) requires a considerable investment in both infrastructure and equipment. As discussed above, profits which are significantly and persistently above the WACC may indicate that the firm has SMP.
- 7.374 Table 32 below shows BT's reported profitability for trunk segments of the network (all bandwidths) for 2006/07 and 2005/06.

**Table 32: BT trunk market profitability**

All in £m	ROCE %	Turnover	Profit	MCE
<b>Trunk (all bandwidths)</b>				
2006/07	59%	300	177	300
2005/06	50%	342	203	405

Source: BT regulatory financial statements (2005/06 figures have been restated so as to enable comparison with the 2006/07 figures).

- 7.375 The figures presented in Table 32 indicate that trunk profitability is high. Specifically, BT's trunk profitability (59% on a fully attributed cost basis) is well above BT's cost of capital (11.4%).
- 7.376 The 2003/04 Review provides information on the profits that BT earned in the trunk market in 2002/03. Although this information is not directly comparable to the ROCE set out above, it indicates that at that time BT priced trunk segments substantially above both fully allocated costs and standalone costs<sup>149</sup>. This information (taken together with the information on BT's ROCE in the paragraphs above) suggests that BT's profits in this market are persistent.
- 7.377 The above information suggests that BT has SMP in the trunk market. If other operators had similar costs and could provide trunk themselves at this cost level, these returns would not be sustainable and would be even less likely to be increasing (as appears to have occurred from 2005/06 to 2006/07).
- 7.378 The results need to be assessed against the background of the quality of data which form the basis to this analysis. It is somewhat counterintuitive for trunk returns to be above the returns associated with origination/termination markets and it is therefore important to consider whether the recorded cost data are sufficiently robust and accurately reflect 'true' costs of provision. We are however not aware of any reason to believe BT's costs to be understated here. It appears that BT has been able to sustain such high levels of profitability because trunk services, unlike most origination services, have not been subject to a price control. Since the 2003/04 Review was carried out, it appears that competitive forces in the trunk market have not constrained BT's pricing.

### Qualitative criteria

- 7.379 The following paragraphs consider the SMP qualitative criteria identified by the EC and ERG. Criteria which may give rise to SMP on the supply-side are first considered, followed by criteria which may give rise to SMP on the demand side. Finally, we consider evidence of previous anti-competitive behaviour on the part of BT in this market.

#### Supply-side: Control of Infrastructure not easily replicated

- 7.380 As was the case in the 2003/04 Review, BT and OCPs have supplied Ofcom with information detailing the extent of their UK fibre optic networks. These have not

<sup>149</sup> See Annex B of 2003/04 Review, p 340.

been reproduced here, but are generally publicly available, notably on CPs' websites. In addition, each CP has provided us with information on its main points of presence. This information makes clear that apart from BT, many CPs have points of presence in many of the urban centres where the aggregation nodes are located.

- 7.381 Annex 8 provides detailed information regarding CPs' presence at both ends of different trunk routes. This considers CPs' proximity to BT Tier 1 nodes located within those aggregation points or at least having a point of presence within the relevant Tier 1 serving area. This information suggests that there are various routes over which multiple CPs could (at least in principle) compete. However, (as discussed in our market definition assessment) there are in fact comparatively few routes where three or more CPs (including BT) have trunk capacity.
- 7.382 This is consistent with the market share and profitability analyses set out above. It is unlikely that BT would have a high market share and would earn high profits in the market if OCPs were able to compete effectively for trunk capacity. Hence, although many CPs appear to have networks capable of providing core connectivity, the extent to which these networks are used instead of relying on BT's SDH network appears to be limited.
- 7.383 The following sections set out information on the potential constraints that OCPs' trunk networks could impose on BT.

*Information on PPC trunk segments sold to OCPs by BT*

- 7.384 When purchasing a terminating segment from BT, where a trunk segment is required, OCPs can choose between buying a trunk segment from BT, self-providing or alternatively buying from another OCP. Ofcom expects that where viable, OCPs would generally prefer to self-provide trunk segments. Our market definition analysis however suggests that OCPs, in many cases, rely on BT trunk (at least when providing retail leased lines to customers which also use BT's PPCs). This suggests that OCPs are unable to either self provide trunk segments or source them from elsewhere.
- 7.385 The discussion on trunk market definition in Section 5 provides information on the proportion of terminating segments sold along with a trunk segment. As at 2006, it appears that 45% of PPCs were sold with trunk segments (based on inter-Tier 1 node traffic). This compares to the last market review where as of March 2004, 56% of PPCs were sold with trunk segments. This could suggest that OCPs' reliance on BT has diminished. However, we do not place much weight on these comparisons as these figures include trunk between any BT Tier 1 node, whereas our revised trunk definition excludes a large number of intra-city trunk circuits.
- 7.386 Our analysis suggests that approximately 18% of retail leased lines require a trunk component on a revised definition. This compares to approximately 10% of PPC sales including a trunk component on the same definition. Even when taking into account only the PPCs that actually require trunk (based on Ofcom's revised definition of trunk between "aggregation nodes"), this information implies that over 50% of PPCs are still purchased with a trunk segment which runs between aggregation nodes.
- 7.387 In conclusion, the data presented in this section suggest that OCPs still depend significantly on BT for the supply of trunk capacity.

## Supply-side: Economies of scale

- 7.388 Ofcom considers that the trunk market is characterised by substantial economies of scale. Entering this market requires large up-front investments in fixed costs. Once these have been sunk, the incremental cost of supplying large volumes of individual circuits is relatively small. This roll-out has been economic for BT because of it having been the first provider to sink all the costs needed to create a ubiquitous network, and because of the high volumes it has been able to achieve as the former monopoly.
- 7.389 As presented above, there are a number of inter-city routes that are potentially served by CPs using their own trunk networks. However, the prospects for further building out on the remaining routes is likely to be more limited as these are routes for smaller centres where lower demand makes it less likely that investments in competing trunks will be made. Further growth within the timeframe of the review is therefore likely to be limited. This suggests to Ofcom that the prospect of competition developing on less dense routes on a forward-looking basis is limited within the timeframe relevant to this review. Further rollout is likely to be uneconomic for OCPs, given their small retail market shares, and the fact that they would need to grow significantly to match BT's economies of scale.
- 7.390 The CVRs estimated by Europe Economics presented in the 2003/04 Review implied the existence of substantial economies of scale in the provision of trunk segments (where volume measures total capacity in terms of Mbit/s)<sup>150</sup>. Europe Economics calculated the following CVR slope coefficients (expressed in percentage terms) relating to core networks:
- duct - 0%;
  - optical fibre - 11%;
  - SDH equipment - 46%; and
  - operating costs - 30%.
- 7.391 Although these estimates are now quite old, the cost components that have potentially materially changed since these calculations were carried out have been SDH equipment and operating costs, the cost of which may have fallen in recent years. For a new entrant these elements of trunk costs are relatively small in comparison to the cost of ducting and optical fibre, implying that there is little to suggest that the general results of the analysis carried out above would have changed.
- 7.392 The evidence outlined above strongly suggests that the provision of trunk segments is characterised by significant economies of scale. Comparing BT's volumes of trunk segments as against the volumes provided by OCPs provides some indication of whether BT is able to exploit these economies of scale to a greater degree than its counterparts.
- 7.393 As BT's current share of the total trunk market is higher than that of individual OCPs, it seems likely that BT is in a position to exploit these scale economies to a

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<sup>150</sup> The CVRs used refer to the core element of the provision of end to end leased lines, and as such are useful as a proxy for the cost relationships inherent in the provision of intra Tier 1 transmission.

greater extent than its competitors. In summary, it is likely that BT's ability to exploit economies of scale strengthens its SMP in the market for trunk.

### Supply-side: Economies of scope

- 7.394 Economies of scope exist when it is cheaper to produce two or more products together than to produce them separately. In the context of trunk markets, economies of scope arise if the cost of supplying trunk services can be shared with other products.
- 7.395 Economies of scope can create SMP because in order to produce efficiently, an entrant may have to enter various markets simultaneously, which can serve to increase sunk costs, capital requirements etc. Whether or not economies of scope are likely to create SMP depends on various factors: the magnitude of the common costs, the range of products and services over which they are shared, the volume of these various products and services, and finally whether OCPs are able to attain the same economies of scope as BT.
- 7.396 As noted in the preceding discussion on economies of scale, trunk segments include duct and fibre, and these inputs account for the largest fixed costs of supplying a trunk network.
- 7.397 Moreover, these inputs are not solely attributable to the trunk market for leased lines but are also used over a range of other outputs. Specifically, apart from leased lines these elements of the trunk market can also be used to carry a range of other trunk products including PSTN, ATM and Frame Relay, implying that common costs are likely to represent a large portion of the costs of supplying trunk services.
- 7.398 Whether or not this feature of the trunk market is likely to confer SMP on BT depends on whether OCPs produce the same range of outputs as BT and whether they produce similar volumes of these outputs as BT. BT's high participation in the fixed telephony sector – for example, its 48% retail share of the fixed voice call volumes (excluding NTS voice calls)<sup>151</sup> – indicates that OCPs are not able to spread their common costs to the same extent as BT over the same range of activities.
- 7.399 A further factor pointed to in the 2003/04 Review that was likely to provide BT with economies of scope was BT's ability to spread a significant portion of the costs of duct over both trunk and origination/termination services. While in principle, the trunk network is physically distinct from the origination/termination network, in practice a substantial portion of circuits that are priced as trunk services are not routed on BT's SDH Tier 1 network (which was defined in the 2003/04 Review as the physical boundary of BT's trunk network). This implies that BT's position in the trunk market is likely to benefit from the large scale of its origination and termination network. To some extent Ofcom's revised market definition may reduce this effect as intra-City traffic between Tier 1 nodes would now generally not be counted as trunk. Nevertheless, this effect may not be entirely eliminated.
- 7.400 Summing up, the combination of the wide range of BT's activities, combined with its higher volumes of the various products and services which generate economies of scope and the magnitude of common costs, indicate that BT is likely to be in a position to exploit these economies of scope to a greater degree than OCPs. Ofcom

<sup>151</sup> BT's market share of various retail calls markets – facts from the Communications Market Report 2007

[http://www.ofcom.org.uk/research/cm/cmr07/cm07\\_print/cm07\\_3.pdf](http://www.ofcom.org.uk/research/cm/cmr07/cm07_print/cm07_3.pdf)



is therefore of the view that economies of scope provide a potential source of market power for BT.

#### Supply side: Absence of potential competition

- 7.401 As noted above, the threat of potential entry can prevent firms from raising prices above competitive levels. Ofcom believes, however, that the likelihood of substantial entry by new players in the trunk market is low. Most of the major CPs are already present in this market and (as discussed immediately below) there are significant barriers to entry into this market.

#### Supply side: ease of market entry

- 7.402 The discussion above indicates that there are multiple obstacles to new firms wishing to enter the trunk market, many of which are likely to be substantial. As noted above, the market is characterised by significant economies of scale and scope, which enable BT (the largest supplier of trunk and other related services) to produce at lower average cost than its smaller rivals. The fact that some of the investments that are required to enter this market are sunk costs further increases the risk for firms that are uncertain of their ability to successfully establish themselves in the market, constituting an additional entry barrier in the market.

#### Supply side: Barriers to expansion

- 7.403 A market subject to barriers to entry of the form which exist in the market for trunk segments can still be effectively competitive if there are sufficient players already in the market, and these can readily expand in such a way to constrain an incumbent operator. Ofcom considers, however, that many of the factors that impede an entity entering the market for trunk routes are also likely to impede existing players expanding in that market.
- 7.404 Our discussion above on market definition also makes clear that there are barriers to existing players shifting additional traffic onto their existing network (as may arise for example if an OCP wishes to stop acquiring trunk capacity from BT and instead migrate that traffic onto its own core network). As noted above, such a move could require substantial investments in new interconnect and associated infrastructure. Because of current uncertainties regarding the development of traditional interface services (particularly in regard to their status on the NGN), OCPs appear unwilling to make these new investments. In short, the risk that the life of these investments could be limited is one factor which appears to impede OCPs making additional use of their existing trunk networks at the present time.

#### Demand-side: Countervailing buying power

- 7.405 All the entities that acquire trunk segments from BT are communications providers, and there are a relatively small number of such buyers (compared, for example, to many retail markets). If these communications providers were able to exert strong bargaining power, BT's ability to act independently of these customers would be undermined.
- 7.406 CPs' ability to exercise buyer power is determined by their ability to buy trunk from OCPs and/or to self-provide trunk services. There are various reasons to believe that neither of these possibilities is sufficiently strong to constrain BT's SMP in the overall market.

- 7.407 First of all, it is important to note that the largest purchaser of trunk segments is BT's own retail arm – the possibility of it acquiring trunk from another Communications Provider in anything apart from exceptional cases is very small.
- 7.408 Turning to other CPs' ability to self-provide, while it is clear that most other CPs have their own trunk networks in place these providers continue to depend extensively on BT's trunk network. This is even taking account of Ofcom's proposed revised definition which excludes the short distance link between BT's Tier 1 nodes in the same urban area where OCPs rarely self provide. OCPs continue to require BT for their purchase of SDH/PDH trunk even though they may have their own core networks.
- 7.409 The fact that BT prices its wholesale trunk services on a national basis indicates that it is able to act to a large degree independently of buyers even in those areas where it faces potential facilities-based competition.
- 7.410 The configuration of many OCPs' own networks also makes it likely that they will generally use BT's core network, rather than relying on the network of other OCPs. It is often more convenient to buy trunk segments from just one buyer, rather than dealing with numerous different entities. As discussed above, interconnection generally requires some sunk costs associated with setting up system interfaces; billing arrangements etc, which unless already incurred would act as a barrier to interconnection. In this regard BT's core network size makes it the seller of choice.
- 7.411 Further, the proximity of these CPs' network nodes to those of BT, and costs of interconnecting with OCPs for routes currently provided by BT suggests that on many trunk segment routes BT's trunk segment customers are unlikely to turn to other OCPs' trunk.
- 7.412 In general the evidence continues to suggest that OCPs lack sufficient countervailing power to attenuate BT's SMP in this market.

#### Previous anti-competitive behavior

- 7.413 As noted above, evidence of previous anti-competitive behaviour in the market under review can suggest that the market is not effectively competitive, because the conduct would not be viable in a competitive market. In this regard, the conduct leading to the complaints referred to in paragraphs 7.45 to 7.54 and 7.234 to 7.237 is consistent with BT having SMP in the wholesale trunk markets, because BT's conduct may not have been viable in an effectively competitive market.

#### Likelihood of competition developing in the future

- 7.414 Ofcom has assessed whether the SMP that presently characterises the market is likely to diminish during the period covered by this review. Ofcom has not been able to identify any developments that would serve to reduce the high structural barriers to entry that characterise the market, which would generate sufficient competitive pressures within the next four years to alter the current finding of SMP.
- 7.415 In particular, Ofcom considers that the low rate of growth which characterises many of the retail leased line markets that make use of trunk segments is likely to prevent BT's wholesale competitors expanding to a scale where they can operate as efficiently as BT.

- 7.416 Further, Ofcom is not aware of any OCP plans to expand their trunk network coverage in the foreseeable future. It appears likely that such expansion would be too costly and time consuming for the prospect of it to provide a substantial constraint on BT's conduct. Ofcom therefore considers that, even on a forward-looking basis, BT's ubiquity puts it at a very significant advantage over OCPs in the trunk market.

*Question 11: Do stakeholders agree with our assessment of SMP in the wholesale trunk segments market?*

## Substantive Assessment of markets in the Hull area

7.417 The following sections proceed to consider each of the markets relevant to the supply of leased lines in Hull. This section first considers whether there is SMP in the market for retail low bandwidth traditional interface leased lines supplied in Hull and then proceeds to examine each of the wholesale markets in the Hull area.

### Market for low bandwidth traditional interface retail leased lines including analogue circuits and digital circuits at bandwidths up to and including 8Mbit/s in Hull area

7.418 Using the SMP criteria identified above, Ofcom has analysed whether there is SMP in Hull in the market for retail low bandwidth traditional interface leased lines.

7.419 As explained above, this market is assessed on the basis that there is no SMP regulation at the retail level. However, the assessment does take into consideration the remedies that are proposed in this market review in the corresponding upstream wholesale market (i.e. the low bandwidth traditional interface symmetric broadband origination market in Hull). Specifically, the wholesale regulation which Ofcom intends to implement in Hull (set out in Section 8) is taken into account.

## Summary of conclusions

7.420 Our assessment of the retail market for low bandwidth traditional interface leased lines points strongly to KCOM no longer having SMP in this market. This conclusion is based largely on KCOM's low market share, which appears to have fallen considerably since the 2003/04 Review.

## Quantitative information criteria: market shares

7.421 The table below indicates that KCOM has around 25% of the retail low bandwidth leased line market in Hull. C&W's share is higher than KCOM's and BT's share is the same as KCOM's. Global Crossing is also a significant player in the market. The relatively unconcentrated nature of the market shares strongly suggests that no single player has SMP.

**Table 33: Volume shares for low bandwidth traditional interface retail leased lines in the Hull area (2006)**

	Share (%)
C&W	33
KCOM	25
BT	25
Global Crossing	14
Others (no other CP had >1%)	2

Source: CP data, Ofcom

7.422 Further, while reliable figures on KCOM's previous market shares are not available it does appear that KCOM's share of sales of retail low bandwidth leased lines to end-users has fallen significantly in recent years. The 2003/04 Review estimated an approximate market share for KCOM equal to 76%. This suggests that the retail

leased line market in Hull is competitive and that there are no significant barriers to entry and expansion in the market.

### Qualitative criteria

- 7.423 KCOM and the other players' respective shares in the market are well below a level from which SMP can normally be inferred. Ofcom has sought to investigate whether notwithstanding these shares, any other SMP criteria indicate that any supplier of retail leased lines in the Hull area may have SMP.
- 7.424 The evidence suggests that this is highly unlikely. As noted above, our analysis of retail markets in the UK excluding Hull indicates that there are few structural impediments to competition that arise purely at the retail level. Further, the relatively unconcentrated nature of the retail market in Hull provides compelling evidence that any SMP that is upstream of the retail leased line market is not impeding competition at the retail level. As noted above, the fact that KCOM's market share has fallen since the last market review also indicates that the retail market in Hull is effectively competitive.

*Question 12: Do stakeholders agree with our assessment of SMP in the retail low bandwidth market in the Hull area?*

### Ofcom's assessment of SMP in wholesale markets in Hull

- 7.425 As is the case in wholesale markets outside Hull, the various wholesale markets in Hull are assessed in the absence of any remedies being applied.
- 7.426 Ofcom considers that the relevant criteria to be used to assess SMP in Hull wholesale markets are the same as those that are used to assess SMP in wholesale markets outside of Hull.

### Market for low bandwidth traditional interface symmetric broadband origination in the Hull area

#### Summary of conclusions

- 7.427 Ofcom's view is that KCOM has SMP in the low bandwidth TISBO market. The factors which are generally accepted to give rise to entry barriers in telecommunications markets apply strongly in this market. These are not offset by the high revenues which can be earned in higher bandwidth markets or in markets which provide greater opportunities for traffic aggregation.
- 7.428 As discussed below, Ofcom considers that the following factors provide strong evidence that KCOM has SMP in this market:
- KCOM's high market share;
  - The ubiquity of KCOM's infrastructure and the fact that this infrastructure is not easily duplicated;
  - KCOM's ability to exploit economies of scale and scope;

- The existence of significant barriers to entry and expansion, including as a result of sunk costs.

7.429 The paragraphs below present Ofcom's analysis of the criteria that are most relevant to the assessment of SMP in this market.

#### Quantitative information criteria: market shares

7.430 The table below presents estimates for market shares for the low bandwidth TISBO market in Hull. It is important to note that some of the data that we received for this market was incomplete, which may have the effect of biasing KCOM's share downward. In 2006, KCOM was estimated to have 51% of the market, although the data issues mentioned above suggest that its share of this market could in fact be higher. KCOM's market share is consistent with a presumption of dominance.

**Table 34: Volume shares for low bandwidth traditional interface symmetric broadband origination in the Hull area (2006)**

	Share (%)
KCOM	51
C&W	24
BT	21
Global Crossing	4

Source: CP data, Ofcom

7.431 Although 51% is significantly below the market share that KCOM was calculated to have in the last review, the fact that this figure may in fact understate KCOM's true share in this market, combined with some doubts about the reliability of the data presented in the 2003/04 Review means that Ofcom is reluctant to conclude that KCOM's share has fallen steeply since the last review.

#### Supply-side: Control of Infrastructure not easily replicated

7.432 KCOM has the most substantial network coverage in the Hull area. KCOM's position is broadly analogous to the position of BT in the wider UK market. The extent to which it is profitable for OCPs to enter wholesale markets in the Hull area is considered in Ofcom's discussion of barriers to entry below.

#### Supply-side: Economies of scale

7.433 KCOM's position as the largest supplier in the market implies that it is better able to exploit economies of scale than any of its smaller competitors. This strengthens KCOM's position in the low bandwidth TISBO market.

#### Supply-side: Economies of scope

7.434 No CP offers as broad a range of services as KCOM, and for each service provided, KCOM has the largest number of customers. This enables KCOM to exploit economies of scope in this market to a greater extent than any other CP.

7.435 Ofcom considers that KCOM enjoys greater economies of scope than any other communications provider in this area and that this strengthens KCOM's position in the low bandwidth TISBO market.

### Supply side: Absence of potential competition

7.436 Ofcom believes that the likelihood of substantial entry by new players in this market is low. Various Communication Providers are already present in this market and (as discussed immediately below) there are significant barriers to entry into this market.

### Supply side: Ease of market entry

7.437 Ofcom considers that there are multiple obstacles to new firms wishing to enter the low bandwidth TISBO market, many of which are likely to be substantial. The general analysis of this criterion as applied to the low bandwidth TISBO market outside Hull applies to this market. However, the small size of the Hull market implies that sunk costs may be even higher in this market relative to the revenues that can be earned therein. This is because:

- investments that are made to serve a particular customer are unlikely to be able to be spread over other customers (e.g. it may be necessary to dig trenches and build duct in order to serve an additional customer); and
- the small size of the market may also impede economies of density being attained (i.e. there may be insufficient custom to aggregate traffic from multiple customers onto a single piece of infrastructure).

### Supply side: Barriers to expansion

7.438 The factors that create barriers to entry in the market for low bandwidth TISBO services equally impede the expansion by firms already operating in the market. The discussion above on low bandwidth TISBO applies similarly to this market.

### Demand-side: Countervailing buying power

7.439 Ofcom does not believe that any purchaser of TISBO is in a position to counter KCOM's strong position in this market. The analysis of this criterion as applied to the low bandwidth TISBO market outside Hull applies similarly to this market.

### Previous anti-competitive behavior

7.440 Ofcom is not aware of any evidence of past anti-competitive conduct in this market.

### Likelihood of competition developing in the future

7.441 Ofcom has assessed whether the SMP that presently characterises the market is likely to be attenuated during the period covered by this review. Ofcom has not been able to identify any developments that would serve to reduce the high structural barriers to entry that characterise the market, which would generate sufficient competitive pressures within the next four years to alter the current finding of SMP.

7.442 Ofcom considers that the barriers to entry and expansion that currently exist are likely to continue for the next four years.

## Market for high bandwidth traditional interface symmetric broadband origination above 8Mbit/s up to and including 45Mbit/s in the Hull area

### Summary of conclusions

- 7.443 Ofcom's view is that KCOM has SMP in the high bandwidth TISBO market in Hull.
- 7.444 As discussed below, Ofcom considers that the following factors provide strong evidence that KCOM has SMP in this market:
- KCOM's very high market share (which appears to have risen since the last review);
  - The ubiquity of KCOM's infrastructure and the fact that this infrastructure is not easily duplicated;
  - KCOM's ability to exploit economies of scale and scope;
  - The existence of significant barriers to entry and expansion, including as a result of sunk costs.
- 7.445 The paragraphs below present Ofcom's analysis of whether the criteria that are most relevant to the assessment of SMP in wholesale markets indicate that KCOM or any other operator has SMP in the market under review.

### Quantitative information criteria: market shares

- 7.446 The table below presents market shares for the high bandwidth TISBO market in Hull. In 2006, KCOM was estimated to have 80% of the market, which is higher than the estimate of KCOM's market share presented in the last market review (i.e. 65%). C&W is the only other operator that is present in the market.

**Table 35: Volume shares for high bandwidth traditional interface symmetric broadband origination in the Hull area (2006)**

	Share (%)
KCOM	80
C&W	20

Source: CP data, Ofcom

- 7.447 KCOM's very high share creates a strong presumption of dominance in this market.

### Supply-side: Control of Infrastructure not easily replicated

- 7.448 As noted above, KCOM has the most substantial network coverage in the Hull area. Although Hull is a relatively small territorial area, the lack of density in the market means that the economic characteristics of this market are more analogous to those which exist in UK excluding Hull and CELA to those which exist in the CELA area. Therefore, KCOM's position is broadly analogous to the position of BT in the high bandwidth TISBO market in the UK excluding Hull and CELA market.
- 7.449 The extent to which it is profitable for OCPs to enter wholesale markets in the Hull area is considered in Ofcom's discussion of barriers to entry below.



### Supply-side: Economies of scale

- 7.450 KCOM's position as the largest supplier in the market implies that it is better able to exploit economies of scale than any of its smaller competitors. This strengthens KCOM's position in the high bandwidth TISBO market.

### Supply-side: Economies of scope

- 7.451 No CP offers as broad a range of services as KCOM, and for each service provided, KCOM has the largest number of customers. This enables KCOM to exploit economies of scope in this market to a greater extent than any other CP.
- 7.452 Ofcom considers that KCOM enjoys greater economies of scope than any other communications provider in this area and that this strengthens its market position in the high bandwidth TISBO market.

### Supply side: Absence of potential competition

- 7.453 Ofcom believes that the likelihood of substantial entry by new players in this market is low. This is essentially because there are significant barriers to entry into this market (especially given the small size of the market).

### Supply side: Ease of market entry

- 7.454 Ofcom considers that there are multiple obstacles to new firms wishing to enter the high bandwidth TISBO market, many of which are likely to be substantial. The analysis of this criterion as applied to the low bandwidth TISBO market in Hull applies similarly to this market.

### Supply side: Barriers to expansion

- 7.455 The factors that create barriers to entry in the market for high bandwidth TISBO services equally impede the expansion by firms already operating in the market (in this case there is only one other firm in the market). The analysis of this criterion as applied to the high bandwidth TISBO market outside Hull applies similarly to this market.

### Demand-side: Countervailing buying power

- 7.456 Ofcom does not believe that any purchaser of TISBO is in a position to counter KCOM's strong position in this market. The analysis of this criterion as applied to the high bandwidth TISBO market in the UK excluding Hull and CELA applies similarly to this market.

### Previous anti-competitive behavior

- 7.457 Ofcom is not aware of any evidence of past anti-competitive conduct in this market.

### Likelihood of competition developing in the future

- 7.458 Ofcom has assessed whether the SMP that presently characterises the market is likely to be attenuated during the period covered by this review. Ofcom has not been able to identify any developments that would serve to reduce the high structural barriers to entry that characterise the market, which would generate

sufficient competitive pressures within the next four years to alter the current finding of SMP.

- 7.459 Ofcom considers that the barriers to entry and expansion that currently exist are likely to continue for the next four years.

### **Market for very high bandwidth traditional interface symmetric broadband origination over 45 Mbit/s in the Hull area**

#### **Summary of conclusions**

- 7.460 Ofcom's view is that KCOM has SMP in the very high bandwidth TISBO market in Hull.
- 7.461 As discussed below, Ofcom considers that the following factors provide strong evidence that KCOM has SMP in this market:
- KCOM's very high market share;
  - The ubiquity of KCOM's infrastructure and the fact that this infrastructure is not easily duplicated;
  - KCOM's ability to exploit economies of scale and scope;
  - The existence of significant barriers to entry and expansion, including as a result of sunk costs.
- 7.462 The sections below present our analysis of the criteria that are most relevant to the assessment of SMP in wholesale markets.

#### Quantitative information criteria: market shares

- 7.463 The table below presents market shares for the high bandwidth TISBO market in Hull. In 2006, KCOM was estimated to have 98% of the market. BT is the only other operator that is present in the market.

**Table 36: Volume shares for very high bandwidth traditional interface symmetric broadband origination in the Hull area (2006)**

	Share (%)
KCOM	98
BT	2

Source: CP data, Ofcom

- 7.464 KCOM's very high share creates a strong presumption of dominance in this market.

#### Supply-side: Control of Infrastructure not easily replicated

- 7.465 As noted above, KCOM has the most substantial network coverage in the Hull area. The lack of density in the market means that the economic characteristics of this market appear to be analogous to those which exist in lower bandwidth markets elsewhere in the UK.

7.466 The extent to which it is profitable for OCPs to enter wholesale markets in the Hull area is considered in Ofcom's discussion of barriers to entry below.

#### Supply-side: Economies of scale

7.467 KCOM's position as the largest supplier in the market implies that it is better able to exploit economies of scale than BT (its only competitor in the market). This strengthens KCOM's position in the market.

#### Supply-side: Economies of scope

7.468 No CP offers as broad a range of services as KCOM, and for each service provided, KCOM has the largest number of customers. This enables KCOM to exploit economies of scope in this market to a greater extent than any other CP.

7.469 Ofcom considers that KCOM enjoys greater economies of scope than any other communications provider in this area and that this strengthens its market position in the high bandwidth TISBO market.

#### Supply side: Absence of potential competition

7.470 Ofcom believes that the likelihood of substantial entry by new players in this market is low. This is essentially because there are significant barriers to entry into this market.

#### Supply side: Ease of market entry

7.471 Ofcom considers that there are multiple obstacles to new firms wishing to enter the very high bandwidth TISBO market, many of which are likely to be substantial. The analysis of this criterion in lower bandwidth markets throughout the UK applies similarly to this market. In particular, the low demand for very high bandwidth services in the Hull market implies that sunk costs may impede entry in this market. This is because:

- investments that are made to serve a particular customer are unlikely to be able to be spread over other customers (e.g. it may be necessary to dig trenches and build duct in order to serve an additional customer); and
- the small size of the market may also impede economies of density being attained (i.e. there may be insufficient custom to aggregate traffic from multiple customers onto a single piece of infrastructure).

7.472 Therefore, the factors which make the very high bandwidth market outside of Hull competitive do not apply within Hull.

#### Supply side: Barriers to expansion

7.473 As the only other player that operates in this market has a negligible share of this market, Ofcom considers that this criterion is of minimal relevance in this market.

#### Demand-side: Countervailing buying power

7.474 KCOM's very high market share in this market suggests that there is little or no countervailing buyer power in the market.

Previous anti-competitive behavior

7.475 Ofcom is not aware of any evidence of past anti-competitive conduct in this market.

Likelihood of competition developing in the future

7.476 Ofcom has assessed whether the SMP that presently characterises the market is likely to be attenuated during the period covered by this review. Ofcom has not been able to identify any developments that would serve to reduce the high structural barriers to entry that characterise the market, which would generate sufficient competitive pressures within the next four years to alter the current finding of SMP.

7.477 Ofcom considers that the barriers to entry and expansion that currently exist are likely to continue for the next four years.

*Question 13: Do stakeholders agree with our assessment of SMP in wholesale TISBO markets in the Hull area?*

## **Market for low bandwidth alternative interface symmetric broadband origination up to and including 1Gbit/s in the Hull area**

### **Low bandwidth AISBO: summary of conclusions**

7.478 Ofcom's view is that KCOM has SMP in the low bandwidth AISBO market. The factors which are generally accepted to give rise to entry barriers in telecommunications markets apply strongly in this market. These are not offset by the high revenues which can be earned in higher bandwidth markets or in markets which provide greater opportunities for traffic aggregation.

7.479 As discussed below, Ofcom considers that the following factors provide strong evidence that KCOM has SMP in this market:

- KCOM's high market share;
- The ubiquity of KCOM's infrastructure and the fact that this infrastructure is not easily duplicated;
- KCOM's ability to exploit economies of scale and scope;
- The existence of significant barriers to entry and expansion, including as a result of sunk costs.

7.480 The sections below present our analysis of the criteria that are most relevant to the assessment of SMP in wholesale markets.

Quantitative information criteria: market shares

7.481 Table 64Table 37 below presents estimates for market shares for the low bandwidth AISBO market in Hull. These estimates may in fact understate KCOM's true share of the market because some of the data provided by KCOM may be incomplete. In 2006, KCOM was estimated to have 67% of the market, although the data issues mentioned above suggest that its share of this market could in fact be higher. KCOM's market share is consistent with a presumption of dominance.

**Table 37: Volume shares for low bandwidth alternative interface symmetric broadband origination in the Hull area (2006)**

	Share (%)
KCOM	67
BT	33

Source: CP data, Ofcom

7.482 It is not clear whether KCOM's share has fallen since the last review, both because of doubts about the 67% figure presented above and because of doubts about KCOM's precise share in the 2003/04 Review.

7.483 KCOM's high market share creates a strong presumption of dominance.

#### Supply-side: Control of Infrastructure not easily replicated

7.484 KCOM has the most substantial network coverage in the Hull area. KCOM's position is broadly analogous to BT's position in the wider UK market. The extent to which it is profitable for OCPs to enter wholesale markets in the Hull area is considered in Ofcom's discussion of barriers to entry below.

#### Supply-side: Economies of scale

7.485 KCOM's position as the largest supplier in the market implies that it is better able to exploit economies of scale than BT (its only other competitor in the market). This strengthens KCOM's position in the low bandwidth AISBO market.

#### Supply-side: Economies of scope

7.486 No CP offers as broad a range of services as KCOM, and for each service provided, KCOM has the largest number of customers. This enables KCOM to exploit economies of scope in this market to a greater extent than any other CP.

7.487 Ofcom considers that KCOM enjoys greater economies of scope than any other communications provider in this area and that this strengthens KCOM's market position in the low bandwidth AISBO market.

#### Supply side: Absence of potential competition

7.488 Ofcom believes that the likelihood of substantial entry by new players in this market is low. This is because of the significant barriers to entry into this market.

#### Supply side: ease of market entry

7.489 Ofcom considers that there are multiple obstacles to new firms wishing to enter the low bandwidth AISBO market, many of which are likely to be substantial. The analysis of this criterion as applied to the low bandwidth TISBO market in Hull applies similarly to this market.

#### Supply side: Barriers to expansion

7.490 The factors that create barriers to entry in the market for low bandwidth AISBO services equally impede the expansion by firms already operating in the market.

The analysis of this criterion as applied to the low bandwidth AISBO market outside Hull applies similarly to this market.

#### Demand-side: Countervailing buying power

7.491 Ofcom does not believe that any purchaser of AISBO is in a position to counter KCOM's strong position in this market. The analysis of this criterion as applied to the low bandwidth AISBO market outside Hull applies similarly to this market.

#### Previous anti-competitive behavior

7.492 Ofcom is not aware of any evidence of past anti-competitive conduct in this market.

#### Likelihood of competition developing in the future

7.493 Ofcom has assessed whether the SMP that presently characterises the market is likely to be attenuated during the period covered by this review. Ofcom has not been able to identify any developments that would serve to reduce the high structural barriers to entry that characterise the market, which would generate sufficient competitive pressures within the next four years to alter the current finding of SMP.

7.494 Ofcom considers that the barriers to entry and expansion that currently exist are likely to continue for the next four years.

### **Market for high bandwidth alternative interface symmetric broadband origination over 1Gbit/s in the Hull area**

#### **Summary of conclusions**

7.495 Ofcom's view is that KCOM has SMP in the high bandwidth AISBO market in Hull.

7.496 As discussed below, Ofcom considers that the following factors provide strong evidence that KCOM has SMP in this market:

- KCOM's 100% market share;
- The ubiquity of KCOM's infrastructure and the fact that this infrastructure is not easily duplicated;
- KCOM's ability to exploit economies of scale and scope;
- The existence of significant barriers to entry and expansion, including as a result of sunk costs.

7.497 The sections below present our analysis of the criteria that are most relevant to the assessment of SMP in wholesale markets.

#### Quantitative information criteria: market shares

7.498 Table 38 below presents market shares for the high bandwidth AISBO market in Hull. In 2006, KCOM was estimated to have 100% of the market.

**Table 38: Volume shares for high bandwidth alternative interface symmetric broadband origination in the Hull area (2006)**

	Share (%)
KCOM	100

Source: CP data, Ofcom

7.499 KCOM's 100% share creates a strong presumption of dominance in this market.

#### Supply-side: Control of Infrastructure not easily replicated

7.500 As noted above, KCOM has the most substantial network coverage in the Hull area. The lack of density in the market means that the economic characteristics of this market appear to be analogous to those which exist in lower bandwidth markets elsewhere in the UK.

7.501 The extent to which it is profitable for OCPs to enter wholesale markets in the Hull area is considered in Ofcom's discussion of barriers to entry below.

#### Supply-side: Economies of scale

7.502 KCOM's position as the only supplier in the market implies that would be better able to exploit economies of scale than any entrant in the market. This strengthens KCOM's position in the market.

#### Supply-side: Economies of scope

7.503 No CP offers as broad a range of services as KCOM, and for each service provided, KCOM has the largest number of customers. This enables KCOM to exploit economies of scope in this market to a greater extent than any other CP.

7.504 Ofcom considers that KCOM enjoys greater economies of scope than any other communications provider in this area and that this strengthens its market position in the high bandwidth AISBO market.

#### Supply side: Absence of potential competition

7.505 There is no evidence to suggest that new players are likely to enter this market. While OCPs have entered the high bandwidth AISBO market outside Hull, the fact that they have not done so in this market indicates that there are significant barriers to entry into this market.

#### Supply side: Ease of market entry

7.506 Ofcom considers that the obstacles which appear to impede entry in the very high bandwidth TISBO market in the Hull area also apply to the very high bandwidth AISBO market.

#### Supply side: Barriers to expansion

7.507 As there are no other players that operate in this market this criterion is of minimal relevance in this market.

Demand-side: Countervailing buying power

7.508 KCOM's 100% market share suggests that there is little or no countervailing buyer power in the market.

Previous anti-competitive behavior

7.509 Ofcom is not aware of any evidence of past anti-competitive conduct in this market.

Likelihood of competition developing in the future

7.510 Ofcom has assessed whether the SMP that presently characterises the market is likely to be attenuated during the period covered by this review. Ofcom has not been able to identify any developments that would serve to reduce the high structural barriers to entry that characterise the market, which would generate sufficient competitive pressures within the next four years to alter the current finding of SMP.

7.511 Ofcom considers that the barriers to entry and expansion that currently exist are likely to continue for the next four years.

*Question 14: Do stakeholders agree with our assessment of SMP in wholesale AISBO markets in the Hull area?*

*Question 15: For those markets where we have found no SMP and propose to deregulate, do you agree with Ofcom that the available evidence supports the finding of no SMP?*