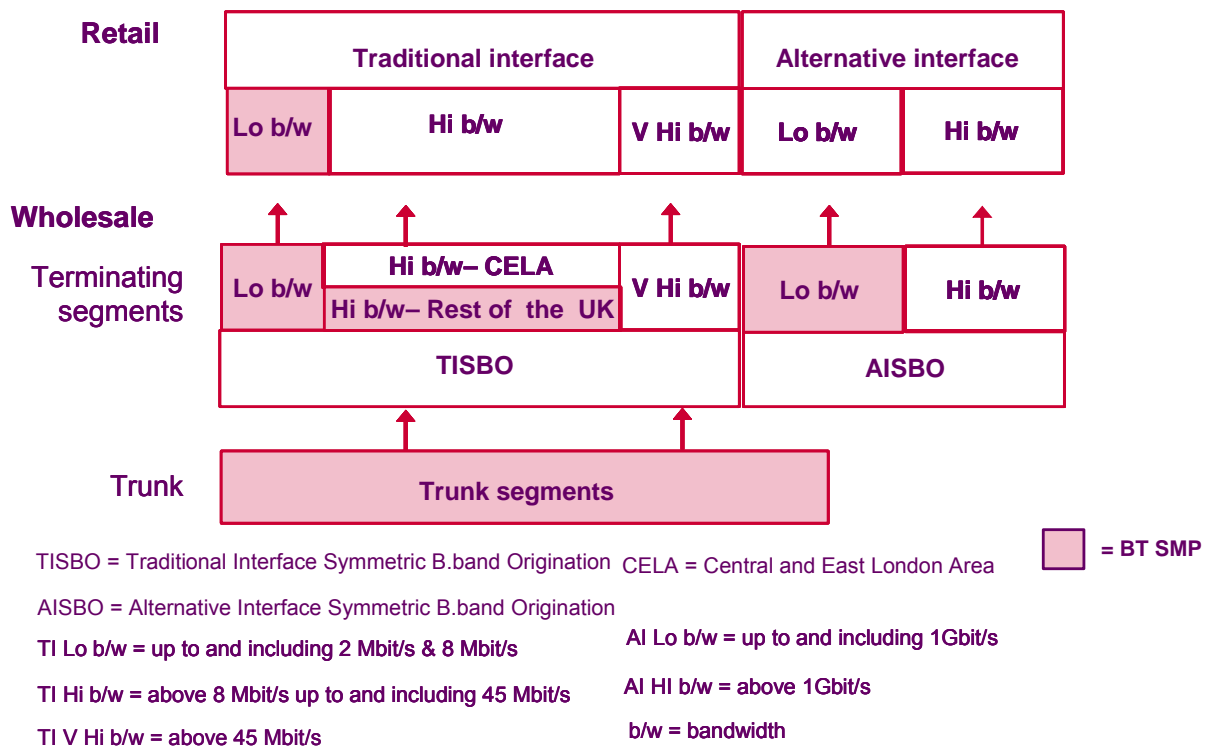


## Section 8

# Regulatory remedies and impact assessment

- 8.1 This Section considers the options for regulatory remedies in the light of the market definition analyses and market power assessment set out in Sections 3 to 7. It also includes an Impact Assessment, as defined in section 7 of the Communications Act (the Act). Any comments on this impact assessment should be sent to us by the closing date for this consultation and will be considered in finalising our proposals.
- 8.2 In Section 7, we found that BT has SMP in the following markets for retail leased lines, wholesale symmetric broadband origination terminating segments, and trunk segments in the UK, excluding the Hull area:
- Retail market for low bandwidth traditional interface leased lines;
  - Wholesale market for low bandwidth Traditional Interface Symmetric Broadband Origination (TISBO);
  - Wholesale market for high bandwidth Traditional Interface Symmetric Broadband Origination (TISBO) in the UK excluding the CELA;
  - Wholesale market for low bandwidth Alternative Interface Symmetric Broadband Origination (AISBO); and
  - Wholesale trunk segments.
- 8.3 Figure 64 below illustrates the findings of the market definition and SMP assessment for BT.

Figure 64: Summary of market definition and SMP assessment



8.4 In section 7 we also concluded that KCOM has SMP in the following markets for retail leased lines and wholesale symmetric broadband origination terminating segments in the Hull area:

- Wholesale market for low bandwidth Traditional Interface Symmetric Broadband Origination (TISBO);
- Wholesale market for high bandwidth Traditional Interface Symmetric Broadband Origination (TISBO);
- Wholesale market for very high bandwidth Traditional Interface Symmetric Broadband Origination (TISBO);
- Wholesale market for low bandwidth Alternative Interface Symmetric Broadband Origination (AISBO); and
- Wholesale market for high bandwidth Alternative Interface Symmetric Broadband Origination (AISBO).

Cost accounting and accounting separation obligations

8.5 BT and KCOM are currently subject to cost accounting and accounting separation requirements in a range of markets in which they have been found to have SMP, including the leased lines markets covered by the 2003/04 Review. Those

requirements were set out in a Statement issued in July 2004 (the 2004 Statement on Regulatory Reporting)<sup>152</sup>.

- 8.6 We discuss at the end of this Section our proposals for the types of cost accounting and accounting separation obligation that should in the future apply to BT and KCOM in relation to those leased lines markets where they have been found to have SMP in the current review.

### Interconnection and accommodation services

- 8.7 For those wholesale markets where BT has SMP, Ofcom has also identified in Section 7 the need to impose obligations relating to certain accommodation and interconnection services in addition to the SMP Conditions in the relevant SMP markets.
- 8.8 Ofcom considers that in order to ensure that regulation in these markets is effective, it is necessary to consider additional obligations in relation to the following services:
- In Span Handover (“ISH”) and Customer sited Handover (“CSH”);
  - In Building Handover (“IBH”);
  - ISH extension circuits; and
  - Accommodation services.
- 8.9 Ofcom has identified the above services as the appropriate technical areas under the Framework to be considered for additional obligations on the SMP provider. The details of such services are discussed later in this Section.

### **Revocation of existing remedies**

- 8.10 The 2003/04 Review imposed SMP conditions on BT and KCOM in a number of markets. In some of those markets, our analysis indicates that SMP no longer exists; in others, new SMP conditions are proposed, on the basis of either new or existing market definitions. In either case, the majority of SMP conditions introduced by the 2003/04 Review should no longer apply, once the present market review has been concluded. We therefore propose to revoke all of the SMP conditions imposed on BT and KCOM in the 2003/04 Review with the exception of those SMP conditions relating to existing charge controls. For the latter, we propose to continue to apply the old obligations until the current charge controls expire and replace them with the new obligations after that time.

### **The legal framework for imposing SMP conditions**

- 8.11 In considering the imposition of SMP conditions, Ofcom has had regard for its duties under the Act and the EC framework for telecommunications regulation. It has also taken account of relevant guidelines produced by the EC, the ERG, Ofel and Ofcom.
- 8.12 Section 87(1) of the Act, which implements Art. 8 of the Access Directive, provides that, where Ofcom has made a determination that a person is dominant in a

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<sup>152</sup> [http://www.ofcom.org.uk/consult/condocs/fin\\_reporting/fin\\_report\\_statement/](http://www.ofcom.org.uk/consult/condocs/fin_reporting/fin_report_statement/)

particular market, it must set such SMP conditions as it considers appropriate and as are authorised under the Act.

- 8.13 In assessing the appropriateness of regulatory remedies and pursuant to Art. 5(3) of the Framework Directive Ofcom has taken into account paragraphs 21 and 114 of the EC's SMP Guidelines which state that NRAs must impose one or more appropriate SMP services conditions on a dominant provider, and that it would be inconsistent with the objectives of the Framework Directive not to impose any SMP services conditions on an undertaking which has SMP.
- 8.14 The Act (Section s87-92) sets out the obligations that Ofcom may impose if it finds that any undertaking has SMP. Sections 87 to 92 implement Articles 9 to 13 of the Access Directive and Articles 17 to 19 of the Universal Service Directive.
- 8.15 The SMP conditions which Ofcom is authorised to impose on a dominant provider include requirements to do the following:
- To provide network access to the relevant network and facilities;
  - Not to discriminate unduly in their provision;
  - obligations to secure transparency in relation to interconnection and/or network access; and
  - To maintain separated accounts.
- 8.16 Ofcom may also impose:
- Price controls;
  - Rules about the recovery of costs and cost orientation;
  - Rules about the use of cost accounting systems; and
  - Rules about the adjustment of prices.
- 8.17 In considering the sort of remedies to impose, we have had regard to our general duties as set out in Section 3 of the Act. Section 3(1) states that Ofcom's principal duty is to further the interests of citizens in relation to communications matters and consumers in relevant markets, where appropriate, by promoting competition. Specifically, Section 3(2)(b) states that Ofcom is required to secure the availability of a wide range of electronic communications services throughout the UK.
- 8.18 Section 3(4)(b) explains that, in meeting these requirements, Ofcom must have regard to the desirability of promoting competition in relevant markets. Section 3(4)(e) states that Ofcom must have regard, in performing its duties, to the desirability of encouraging the availability and use of high speed data transfer services throughout the UK. Also, pursuant to Section 3(5) of the Act, in furthering the interests of consumers, Ofcom must have regard to choice, price, quality of service and value for money.
- 8.19 Section 4 of the Act sets out the duties of Ofcom to act in accordance with its Community obligations which flow from Article 8 of the Framework Directive, and include the duty:

- To promote competition;
  - To contribute to the development of the internal market;
  - To promote the interests of all EU citizens;
  - Not to favour one type of network, service or facility over another;
  - To encourage network access and service interoperability in order to promote efficiency and competition; and
  - To encourage compliance with relevant international standards.
- 8.20 Ofcom is also required under Section 6 of the Act to ensure that regulation by Ofcom does not involve the imposition or maintenance of unnecessary burdens and to consider the scope for effective self-regulation.
- 8.21 We have also taken account of:
- The EC's SMP Guidelines<sup>153</sup>;
  - The Access Guidelines published by Oftel in September 2002<sup>154</sup>; and
  - The Revised ERG Common Position on the approach to appropriate remedies in the regulatory framework for electronic communications networks and services (the ERG Remedies Position)<sup>155</sup>.
- 8.22 The Commission's SMP Guidelines state at paragraph 15 that regulation should aim to promote an open and competitive market, and at paragraph 16 that ex ante regulations should be imposed to ensure that an SMP provider cannot use its market power to restrict or distort competition on the relevant market or leverage market power onto adjacent markets.
- 8.23 The Commission considers that in most cases it is preferable to apply regulation at the wholesale level. Ofcom agrees with the Commission's view. Regulation at the wholesale level can serve a twofold purpose. First, it can be used to address SMP concerns in the relevant wholesale market. Second, this might, in turn, increase competition in the downstream markets that rely on these wholesale inputs and render retail regulation unnecessary.
- 8.24 The 2002 Access Guidelines describe the circumstances in which Ofcom would consider the imposition of wholesale access obligations to be appropriate, give guidance on the nature of the wholesale products Ofcom would expect to be supplied as a result of an obligation to provide access, and describe the conditions under which products should be made available.

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<sup>153</sup> Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services (2002/C 165/03).

<sup>154</sup> These guidelines can be found at

[http://www.ofcom.org.uk/static/archive/oftel/publications/ind\\_guidelines/acce0902.htm](http://www.ofcom.org.uk/static/archive/oftel/publications/ind_guidelines/acce0902.htm).

<sup>155</sup> See [http://erg.eu.int/doc/meeting/erg\\_06\\_33\\_remedies\\_common\\_position\\_june\\_06.pdf](http://erg.eu.int/doc/meeting/erg_06_33_remedies_common_position_june_06.pdf)

8.25 As well as being appropriate, as required by Section 87(1) of the Act, each SMP condition must also satisfy the tests set out in Section 47(2) of the Act. These are that each condition must be:

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

8.26 It is Ofcom's view that the SMP service conditions proposed for KCOM and BT in this Section satisfy the relevant requirements specified in the Act and relevant Directives. This is explained later in this Section.

### **EC Recommendation**

8.27 Ofcom is aware that two of the markets in which we propose to apply ex ante regulation have been removed from the second edition of the EC Recommendation on product and service market susceptible to ex ante regulation. The markets concerned are the retail market for low bandwidth leased lines (outside the Hull area) and the wholesale market for trunk segments.

8.28 The explanatory note accompanying the Recommendation (the Explanatory Note) states, however, that National Regulatory Authorities (NRAs) may be able to regulate markets which differ from those identified in the Recommendation, where this is justified by national circumstances. Ofcom also notes that BT is currently subject to SMP regulation in these markets and that a further market review is required in order to determine whether ex ante regulation is still required. As Ofcom's preliminary conclusion is that BT still has SMP in these markets, we consider the imposition of appropriate ex ante remedies to be consistent with the requirements of the EC framework, and those of the Communications Act 2003.

8.29 The Explanatory Note also refers to three criteria which the Commission considers should be met when analysing markets not identified in the Recommendation. The criteria are that a market should be subject to high and non-transitory entry barriers, that it would not tend towards effective competition without ex ante regulatory intervention and that competition law by itself would be insufficient to address the market failure.

8.30 Whilst Ofcom does not believe that the passing of these criteria constitutes a legal requirement for the imposition of regulatory obligations, it considers that these criteria are met in the case of the retail market for low bandwidth leased lines and the wholesale market for trunk segments. In the case of the former, the evidence indicates that BT's retail services are not yet technically and commercially replicable by its competitors and that its market share is persistently high, having increased marginally to 80% in 2006. In the case of the latter, our SMP finding reflects BT's persistently high market share and high level of profit in this market, as well as the existence of economies of scale and other factors which impede market entry and expansion. In both cases, Ofcom considers that a reliance on competition law alone would not be sufficient to promote the development of effective competition.

## Impact assessment

- 8.31 Impact assessments provide a valuable way of assessing different options for regulation and showing why the preferred option was chosen. They form part of best practice policy-making. This is reflected in section 7 of the Act, which sets out that generally we have to carry out impact assessments where our proposals would be likely to have a significant effect on businesses or the general public, or when there is a major change in Ofcom's activities. However, as a matter of policy Ofcom is committed to carrying out and publishing impact assessments in relation to the great majority of our policy decisions. For further information about our approach to impact assessments, see the guidelines, Better policy-making: Ofcom's approach to impact assessment, which are on our website:  
[http://www.ofcom.org.uk/consult/policy\\_making/guidelines.pdf](http://www.ofcom.org.uk/consult/policy_making/guidelines.pdf).
- 8.32 In this document, the impact assessment is included in this Section alongside the discussion of the appropriate remedies for each market where we have found SMP in Section 7. Those assessments along with the following paragraphs constitute Ofcom's impact assessment for this market review.

## Policy Objectives

- 8.33 Ofcom's overarching aim in these markets is to further the interests of citizens and consumers whilst also minimising the burden of regulation.
- 8.34 This objective is derived from Ofcom's statutory duties as set out in the Act. Under Section 3 of the Act, Ofcom's principal duties are:
- Section 3(1)(a): to further the interests of citizens in relation to communications matters; and
  - Section 3(1)(b): to further the interests of consumers in relevant markets, where appropriate by promoting competition.
- 8.35 We have placed particular emphasis on the promotion of competition, which we consider is likely to be the most effective way of furthering citizen and consumer interests in the markets under review.
- 8.36 Ofcom will always seek the least intrusive regulatory measures to achieve its policy objectives. This principle is derived from Ofcom's duty under Section 6 of the Act to minimise the burden of regulation.
- 8.37 In addition to the overarching objective referred to above, we have taken account of a number of secondary objectives, which are as follows:
- service availability: To promote the availability of a range of leased line services throughout the UK, including the continued availability of analogue and low bandwidth digital leased lines;
  - choice: to ensure where possible that consumers have a choice of supplier;
  - prices: to ensure that services are available at prices that are reasonably related to the efficient costs of supply, preferably as a result of effective competition;
  - service quality: to promote the availability of high quality services which are designed to meet consumer requirements;
  - investment and innovation: to promote efficient investment in the development of new and innovative services; and

- access to bottleneck facilities: to ensure that bottleneck facilities and services are made available to competing service providers in a manner that is not unduly discriminatory.

### **Policy options and approach to impact assessment**

8.38 For each of the markets with SMP, the options considered are broadly as follows:

- no regulation;
- the status quo;
- variations and additional measures, including, where relevant, removing existing regulation.

8.39 The variations and additional measures vary by market, according to the circumstances found therein.

8.40 These options have been assessed in terms of their impact on the objectives set out above. Particular emphasis has been placed on the extent to which they are likely to promote effective competition, and thereby further the interests of citizens and consumers, whilst minimising the burden of regulation. In this case, the relevant consumers are mainly the business consumers who use leased line services, although there will also be some indirect effects on consumers who purchase the goods and services produced by those businesses.

8.41 Where appropriate, we have considered the prospective impact on other stakeholders, notably the communications providers who provide leased lines services, including both those with and without SMP.

8.42 Our assessment of the various options has been informed by the findings of our market analysis and SMP analysis, as set out in Section 3 to 7.

### **Markets where we have found no SMP**

8.43 For those markets where in Section 7 we have found no operator with SMP, we are obliged under the Communications Act to remove any existing remedies and impose no new ones. These markets are:

- Market for wholesale high bandwidth TISBO in the CELA;
- Market for wholesale very high bandwidth TISBO in the UK excluding the Hull area;
- Market for wholesale high bandwidth AISBO in the UK excluding the Hull area; and
- Market for retail low bandwidth leased lines in the Hull area.

8.44 For those markets, we have not conducted a formal assessment of options, since the only policy option available is the removal of regulation.



## Interconnection and accommodation services relating to BT's provision of services in the wholesale TISBOs, AISBOs and trunk markets

8.69 The Commission has not identified a market for interconnection and accommodation services in support of leased lines in its Recommendation. However, paragraph 3 of section 3.3 of the explanatory memorandum to the Recommendation states that:

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

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

- wholesale low bandwidth TISBO (up to and including 8Mbit/s);
- wholesale high bandwidth TISBO (above 8Mbit/s up to and including 155Mbit/s);
- wholesale low bandwidth AISBO; and
- wholesale trunk segments.

8.71 Accordingly, Ofcom considers it necessary and appropriate to impose certain obligations in these markets in order to remedy the problems identified. These are discussed below.

8.72 However, Ofcom is of the view that these obligations and their likely consequences are not sufficient to address the problems in the markets identified. Therefore, Ofcom considers that in order to ensure that regulation in these markets is effective, it is necessary to consider whether additional obligations are required in relation to interconnection and accommodation services. Ofcom therefore considers that interconnection and accommodation services should properly be considered as a technical area as set out by the Commission.

### Rationale

8.73 Those communications providers that wish to interconnect with BT and purchase wholesale AISBO and TISBO services must first purchase the relevant interconnection service from BT. In order to remedy BT's SMP in the wholesale TISBO, wholesale AISBO and trunk segments markets, Ofcom proposes to impose remedies in these markets, as outlined later in this Section. However, SMP regulation of these markets alone is insufficient to achieve an overall solution to BT's market power in these markets.

8.74 To achieve an overall solution, Ofcom considers that it is also necessary to regulate BT's provision of interconnection links and equipment, in the absence of which, BT would have an incentive to charge prices well above the cost of provision. As communications providers must purchase these links and equipment to interconnect and purchase interconnection services, this would have the same effect as charging

excessive prices for the regulated interconnection services in each SMP market, and would undermine the remedies that are being imposed by Ofcom.

- 8.75 Ofcom also considers that it is necessary to regulate BT's provision of accommodation in support of disaggregated services, in the absence of which, BT would have an incentive to charge prices well above the cost of provision. As communications providers must purchase accommodation if they wish to use their own equipment in conjunction with disaggregated services, this would have the same effect as charging excessive prices for the regulated disaggregated services in each SMP market, and would undermine the remedies that are being imposed by Ofcom.
- 8.76 Ofcom considers that it would be insufficient to regulate only one type of interconnection product as they each perform very different functions.

### Services involved

- 8.77 A Point of Connection ("POC") is the point at which another communications provider's network interconnects with BT's network. The relevant services provided at a POC can broadly be divided into equipment and links. Equipment is provided at a POC in the form of multiplexers or terminal equipment which are used for the aggregation, disaggregation and termination of partial circuits ready for onward transmission. Links are circuits which link the equipment of two interconnecting communications providers in order to allow transmission between the networks of these two communications providers.
- 8.78 BT currently provides the following broad types of POC equipment and links:
- Customer-sited handover (CSH): BT provides a point of interconnection at the site of the interconnecting communications provider. In order to do so, BT has to extend its network out to the point of interconnection and provide a CSH link along with CSH POC equipment. CSH is provided in support of TISBO products; and
  - In-span handover (ISH): both BT and another communications provider build out their networks to a handover point located between their premises. The handover point is close to the BT exchange and therefore most of the build is the responsibility of the interconnecting communications provider. BT provides the part of the ISH link running from the handover point to its POC, along with ISH equipment at the POC. ISH is provided in support of TISBO products.
- 8.79 In addition to the handover products described above BT also provides a product in support of accommodation services called Cablelink. Cablelink has both internal and external variants. The internal variant allows a communications provider to connect two remote licensed areas of the BT exchange building (i.e. two separate areas in which the communications provider has installed its equipment) or to connect equipment in the communications provider's licensed area to a pre-existing fibre entering the exchange building via the cable chamber. The external variant allows a communications provider's external fibre cable to be pulled into the exchange building by BT and routed to the communications provider's licensed area.
- 8.80 BT currently provides three types of accommodation services: co-mingling, Netlocate and BTLocate. Co-mingling is exclusively provided in support of LLU<sup>156</sup> whilst Netlocate is used to provide accommodation for the majority of other services

<sup>156</sup> <http://www.ofcom.org.uk/static/archive/oftel/publications/broadband/llu/comi1001.htm>

provided by a CP which require equipment hosted in the local exchange. BTLocate is a commercial product with fewer restrictions in terms of both customer and use. Currently, any CP wishing to use disaggregated AISBO or TISBO products is required to purchase Netlocate if they wish to deploy their own equipment in the exchange unless that product is LLU backhaul in which case the terminating equipment can be deployed in the LLU co-mingling area.

- 8.81 Ofcom believes that the use of disaggregated products will facilitate competition and innovation in the interests of consumers by allowing other communications providers to access BT's bottleneck assets at least cost. Ofcom therefore wishes to encourage the use of disaggregated AISBO and TISBO products.
- 8.82 BT does make available Netlocate to support products other than LLU but many communications providers believe that the pricing of Netlocate discourages its use and, therefore, disaggregated products. Ofcom believes that the availability of accommodation is a necessary technical area and further believes that in order to minimise start-up costs and encourage communications providers to use disaggregated AISBO and/or TISBO products the price and availability of such space should be regulated.
- 8.83 Given the widespread deployment of LLU Ofcom believes that the incremental costs of providing co-mingling space in support of AISBO and TISBO products should be minimal and, where those costs are incurred, should be recovered in a manner similar to the existing LLU co-mingling product. Ofcom therefore expects that the pricing for co-mingling in support of AISBO and TISBO products should be largely consistent with the pricing of co-mingling in support of LLU, and its prices transparent, non-discriminatory and cost-oriented.
- 8.84 It is also Ofcom's view that where a CP has unbundled an exchange to provide LLU services and also intends to leverage that investment to provide leased line services and has taken accommodation in that exchange to facilitate this then BT should support the provision of In-Building Handover (IBH) as an alternative to ISH or CSH.
- 8.85 Ofcom therefore proposes to require BT to make available IBH as an alternative to ISH and CSH for those customers who have chosen to take accommodation from BT. Indeed Ofcom believes that costs could be minimised by allowing communications providers to share their co-mingling space across exchange-based services, i.e. across LLU and AISBO/TISBO and IBH, and encourages BT to consider the removal of such restrictions. Ofcom also believes that the contractual arrangements, particularly in respect of service level agreements, should be aligned with LLU co-mingling.

## CSH

- 8.86 CSH does not involve building out to BT exchanges and the significant costs of doing so. Therefore, it is the normal mode of interconnection for a new communications provider or where an interconnection route is expected to carry a limited volume of traffic. Regulation of CSH is essential to ensure that barriers to entry for new interconnecting communications providers are low. If communications providers can only interconnect using ISH links and equipment and the significant costs of building their links up to the BT exchange, this could deter market entry and therefore affect the development of competition in these markets.

## ISH

8.87 ISH is the preferred method of interconnection between two communications providers who have reasonably extensive network infrastructure. An interconnecting communications provider will aim to interconnect as close as possible to BT, in order to minimise the charges payable to BT. Regulation of ISH (including the ISH extension and STM-1 point of handover ISH and CSH products discussed below) is necessary to ensure that communications providers have the option of building out their own networks and connecting closer to BT's exchange. This therefore assists a communications provider's ability to extend their own infrastructure and reduces their reliance on BT's.

## IBH

8.88 IBH would allow a communications provider to implement handover within their licensed area within BT's exchange building in those cases where they have chosen to purchase such space from BT. Such an interconnect will minimise the charges payable to BT for interconnection services and allow the communications provider to maximise the return on their investment in both exchange space and backhaul by increasing its utility to the provider and achieving greater economies of scope.

## Accommodation

8.89 Accommodation is required to be purchased by any communications provider wishing to use the disaggregated AISBO and/or TISBO products available from BT in conjunction with their own aggregation equipment. Regulation of Netlocate is required to ensure that the incentives for using disaggregated products and investing in local access infrastructure are not undermined by the inability to obtain space or excessive pricing of it.

## **Conclusions**

8.90 Ofcom has therefore concluded that BT should be subject to the obligation to provide the following interconnection services:

- In Span Handover (ISH)
- Customer Sited Handover (CSH)
- In building Handover (IBH).

8.91 Ofcom has further concluded that BT should be required to provide accommodation within its local exchange buildings in support of disaggregated AISBO and TISBO leased line products and that the availability of such space should be on non-discriminatory, transparent and cost-oriented terms.

8.92 The remedies imposed in relation to BT's provision of CSH, ISH, IBH and accommodation services are set out in the regulatory options appraisal below.

## **Communications Act tests**

8.93 Section 47(2) of the Communications Act requires regulatory obligations to be justifiable, non-discriminatory, proportionate and transparent. They are justifiable in that they relate to the need identified to ensure competition develops fairly and to the benefit of consumers. They do not discriminate against BT in that BT is the only

SMP provider in this market. They are proportionate in that BT could exploit its SMP by means of withdrawing the provision of such interconnection services. They are transparent in that they are set out clearly in Annex 15.

## Regulatory remedies - BT

8.94 In considering remedies, we look first at the wholesale markets in which BT has SMP, and then at the low bandwidth retail market. This ordering is used because the need for remedies in the downstream retail market has to be examined on the assumption that appropriate SMP remedies are already in place in the relevant wholesale markets in accordance with Section 5.91(2) of the Act and Art. 17(1) of the USD. The focus is then on whether additional retail remedies are required.

### Wholesale markets – current remedies

8.95 The last market review found BT to have SMP in the wholesale markets for low and high bandwidth TISBOs, AISBOs at all bandwidths and trunk segments. As a result of the SMP findings, a series of regulatory obligations were imposed on BT:

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

8.96 BT is also subject to:

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

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

### Objectives of the wholesale level remedies

- 8.97 The wholesale market remedies can broadly be divided into those intended to prevent refusal to supply, those intended to prevent excessive pricing and those designed to prevent other types of anti-competitive behaviour.
- 8.98 The key of such objective is that of ensuring that SMP at the wholesale level does not restrict or distort competition in relevant downstream leased line markets. Regulation in wholesale (as opposed to retail) markets is intended to encourage communications providers to combine wholesale products with use of their own networks where possible to compete in retail leased lines markets. Compared to retail regulation alone, this is intended to increase the extent of infrastructure subject to competitive pressure on costs and to encourage retail service innovation. The requirement not to unduly discriminate is a key element in the promotion of downstream competition.
- 8.99 The obligation to supply was intentionally framed in general terms so that Ofcom did not need to specify the details of the products to be supplied and to allow the regulation to respond to market developments.
- 8.100 The cost-orientation obligation was intended to ensure that prices reflected LRIC plus “an appropriate mark-up” for the recovery of common costs. Note that, whilst in the TISBO market, the cost-orientation requirement currently operates in conjunction with an RPI-X price control, in the AISBO and trunk markets there is no such control at present and cost orientation alone applies. At the time of the last review, the AISBO market was considered insufficiently developed to require a price control to be imposed and the cost orientation rule was therefore intended to allow a “degree of flexibility...in the approach to the recovery of cost of capital”. It was stated that “it is necessary to give time for the effects of the cost orientation obligation to impact on the competitiveness of the market before considering whether a price control is necessary. The need for a price control will be considered when the market is next reviewed.
- 8.101 In trunk markets, the cost-orientation requirement was intended to balance the objectives of reducing “current excessive prices”, whilst not deterring competition and allowing some geographic de-averaging of prices. A charge control was not considered appropriate because the market was regarded as prospectively competitive.
- 8.102 The requirement to supply PPCs on specific terms was intended to encourage competition in retail markets by enabling communications providers to supply end-to-end leased line products and value added business products in competition with BT.

### Relevance of BT Undertakings for the leased lines market

- 8.103 BT’s Undertakings, given to Ofcom under Section 155 of the Enterprise Act in *lieu* of a market reference to the Competition Commission, require BT to comply with a series of regulatory obligations to apply to some of its wholesale access and

backhaul services. Some of the obligations imposed apply directly to products offered by BT in the AISBO market:

- To provide WES and BES services on an Equivalence of Input (Eol) basis
- To provide new WES Access, WES Backhaul and WEES products on an Eol basis<sup>157</sup>.

8.104 With respect to the TISBO market, the Undertakings commit BT to make available to any Communications Provider within a reasonable period of time new TI Local Access and Backhaul Products<sup>158</sup>. Other TISBO services, however, do not have to be provided on an Eol basis.

8.105 The Undertakings established the principle of “Equivalence of Inputs” or “EOI” which means that BT provides, in respect of a particular product or service, the same product or service to all Communications Providers (including BT) on the same timescales, terms and conditions (including price and service levels) by means of the same systems and processes, and includes the provision to all Communications Providers (including BT) of the same Commercial Information about such products, services, systems and processes. In particular, it includes the use by BT of such systems and processes in the same way as other Communications Providers and with the same degree of reliability and performance as experienced by other Communications Providers<sup>159</sup>.

8.106 The Undertakings were designed to ensure that BT does not discriminate between its own downstream divisions (BT Retail and BTGS) and competitors when offering access services. The set of remedies set out in the Undertakings were particularly engineered to address non price discrimination.

### **Wholesale markets – assessment of options and proposed remedies**

8.107 In the following paragraphs, we consider the remedies that should apply in the wholesale markets where we have found BT to have SMP. In each case we evaluate the three broad options identified above, in terms of:

- Their appropriateness in addressing the competitive issues identifies in Section 7;
- their likely effectiveness in promoting our policy objectives; and
- their impact on stakeholders.

8.108 In setting out our proposals for each relevant market, we then outline how we believe the proposed regulatory framework complies with the relevant Communications Act tests.

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<sup>157</sup> Section 3.1.

<sup>158</sup> Section 5.5.

<sup>159</sup> Section 2.1.



## Wholesale market for low bandwidth TISBO in the UK

### Options assessment

#### Option 1: No regulation

- 8.109 In Section 7, we propose to find that BT has SMP in this market for low bandwidth TISBO in the UK excluding the Hull area. BT controls bottleneck infrastructure which cannot be readily duplicated by competitors, given the importance of sunk costs and presence of economies of scale and scope. An absence of regulation would be unlikely to result in the development of effective competition in downstream markets (in terms of price, roll-out, service quality and product differentiation). Other providers would be less likely to enter to provide downstream services as they would require access to be provided by BT and, in the absence of regulation, BT would have little incentive to provide services to them. The likely consequence of this would be a restriction of competition in this market and in the provision of downstream low bandwidth leased lines services.
- 8.110 In addition, paragraph 21 of the EC's SMP Guidelines sets out that, in the opinion of the Commission, at least one regulatory obligation should be imposed where an NRA designates an undertaking to have SMP.
- 8.111 Ofcom considers that this option would poorly serve our policy objectives and should therefore be rejected.

#### Option 2: Status quo

- 8.112 As noted above, BT is currently subject to the following obligations in this market: an obligation to provide network access, an obligation not to unduly discriminate, cost orientation and accounting separation obligations, charge controls, a set of transparency obligations, and a quality of service obligation.
- 8.113 As discussed in the SMP assessment in Section 7,, these measures have had limited success in achieving Ofcom's policy objectives. On one hand, there has been some growth in the consumption of PPCs, PPC service quality is considered by industry stakeholders to be reasonably good, and PPC prices have fallen under the terms of the charge control.
- 8.114 On the other hand:
- BT's market share has risen in this market, suggesting that competitive pressures may not have increased sufficiently and that BT's dominance in this market has strengthened;
  - the regulatory regime for service quality is considered by industry stakeholders to be over-complex and in some respects ineffective; and
  - our 2006 review of replicability concluded that the wholesale services provided by BT to its competitors were not equivalent to those provided to its own downstream business, and that BT's retail services were not therefore replicable by other CPs.
- 8.115 Some CPs have also argued that PPCs are overpriced, in spite of the low returns shown on these services in BT's regulatory accounts.

- 8.116 In view of these factors, Ofcom does not consider that it would be appropriate simply to maintain the status quo.
- 8.117 This does not mean that the existing regime is fundamentally flawed – the existing remedies undoubtedly go some way towards promoting downstream competition by providing access to bottleneck facilities on reasonable terms. In our view, however, it does mean that the existing obligations have been less than fully effective and that consideration should be given to some variations and additional measures.

### Option 3: Variations and additional measures

- 8.118 As discussed above, and in the light of the SMP assessment carried out with respect to this market, we believe that a change to the current regime is required in order to promote competition and further the interests of end users in downstream markets.
- 8.119 Our proposed approach for this market is based on:
- reviewing the charge control with considerations to extend it to cover SDSL products;
  - reviewing the SLA regime;
  - adopting an amended interpretation of the no undue discrimination obligation, under which there would be a presumption that saw-tooth discounts are anti-competitive;
  - requiring BT to address flaws in the PPC regulatory accounting regime;
  - encouraging BT to address the other obstacles to replicability identified in the 2006 review;
  - seeking a commitment from BT to consult on the introduction of more efficiently designed SDH access and backhaul products.

### *Charge controls and SLAs*

- 8.120 The review of charge control, which is being taken forward as a separate project, will address stakeholder concerns over the pricing of PPCs and concerns over SDSL pricing.
- 8.121 The review of SLA regime which is currently being carried out by the OTA, is aimed at simplifying existing SLAs, which are regarded by industry as over-complex and of limited use, and sharpening the incentives on BT to deliver good quality service to its wholesale customers. If the OTA's initiative leads to industry agreement on improvements to the existing regime, Ofcom's intention is to amend and simplify the existing PPC Direction to reflect the outcome. If the OTA initiative fails to lead to an industry agreement, Ofcom will consult on changes to the existing Direction, taking account of the OTA's findings.

### *No undue discrimination*

- 8.122 In relation to non-discrimination, saw-tooth discounts are discounts which can lead to a decline in the overall level of charges following an increase in the level of consumption. To give a simple example, a supplier may offer a 10% discount if pre-discount expenditure exceeds £100. If the discount applies to all expenditure, rather

than just the incremental expenditure in excess of £100, an increase in volumes which just triggers the pre-discount expenditure threshold could lead to a reduction in post-discount spending.

- 8.123 In August 2003, a complaint was submitted to Ofel regarding BT's Netstream 16 and Netstream 16 tariffs<sup>160</sup>. The complaint concerned the saw-tooth discounts available on these services, which it was alleged made the tariffs unmatchable and therefore anti-competitive. The complaint was withdrawn on 30 March 2005 and Ofcom indicated that the issue would be considered further in the context of the Telecoms Strategic Review, which in turn foreshadowed the present market review.
- 8.124 Ofcom remains concerned that saw-tooth discounts may act as a barrier to market entry or expansion and, in a market characterised by SMP, may restrict the development of competition. This is particularly the case where a dominant supplier has secured a major contract to supply a bundle of services, and where the competitive conditions vary for different parts of the bundle. In these circumstances, the availability of saw-tooth discounts may deter the customer from unbundling the contract and seeking alternative offers for the more competitive parts of the bundle.
- 8.125 Given their potentially anti-competitive effects, Ofcom is inclined to the view that there should be a presumption that saw-tooth discounts are unduly discriminatory, and therefore in breach of an SMP requirement not to discriminate unduly. Ofcom believes that the undue discrimination requirement proposed for this market should be interpreted in this way. The implication of this is that, if we were to investigate a complaint that BT had breached its no undue discrimination obligation by applying saw-tooth discounts in this market, the burden would be on BT to show that the saw-tooth discounts had not restricted competition.
- 8.126 Ofcom understands that BT continues to offer saw-tooth discounts in respect of the Netstream products sold to mobile operators, and may do so in relation to other products sold to other CPs and its own downstream business. Ofcom regards these products as wholesale products, as they are provided to other CPs as inputs into retail products. If our proposed interpretation of the non-discrimination requirement is confirmed following this consultation, Ofcom would expect BT to review its pricing practices for these wholesale products.
- 8.127 Ofcom considers that the proposed interpretation of the no undue discrimination obligation should also apply in the other leased lines markets in which BT has SMP.

#### *PPCs and replicability*

- 8.128 Ofcom is already taking steps to ensure that BT addresses the weaknesses in the PPC accounting regime. This will lead to improvements which will be reflected in the regulatory accounts for 2007/08, which are due to be published in August 2008.
- 8.129 We understand that BT is in the process of developing proposals to address the other obstacles to replicability identified in the April 2006 statement<sup>161</sup>. We have indicated that, once those obstacles have been removed, we will consult on a relaxation of SMP obligations applied to BT in the downstream retail market for low bandwidth leased lines. That remains our intention.

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<sup>160</sup> See [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>161</sup> See <http://www.ofcom.org.uk/consult/condocs/busretail/statement/>

*SDH access and backhaul*

- 8.130 The Undertakings included a commitment from BT to offer disaggregated SDH access and backhaul services (TILLAPs and TILLBPs), should there be a reasonable level of demand for those services. The idea behind these services was that they would enable CPs to aggregate PPC traffic at BT local exchanges, and thereby secure improved economies of scale and scope.
- 8.131 The wording of the Undertakings indicates that it should be possible to aggregate a TILLAP and a TILLBP to form a PPC. In practice, this requirement led to the TILLAP and TILLBP products, on which BT consulted early in 2007, being inefficiently designed. As a result, they were expensive, and demand for the services did not materialise.
- 8.132 In order to address this issue, Ofcom has been in discussion with BT over the introduction of more efficiently designed SDH access and backhaul products. This matter is being taken forward as part of discussions with BT over the Undertakings, and will be covered in a future consultation on the Undertakings later in 2008.

*Other measures*

- 8.133 As part of our proposed approach, we also believe that it may be appropriate to explore the scope for more radical remedies such as dark fibre in the access network. This possibility is discussed briefly later in this section, with a more comprehensive discussion presented in Annex 10.

Impact on stakeholders

- 8.134 The no regulation option would fail to meet our central objective of furthering the interests of citizens and consumers. In terms of its impact on other stakeholders, it is likely that it would benefit BT by reducing the competitive pressure on its activities in the downstream retail market for low bandwidth leased lines. BT's competitors are likely to be disadvantaged because they may not be given non-discriminatory access to the bottleneck facilities controlled by BT, and may therefore be less able to compete effectively in the retail market.
- 8.135 The status quo option would be likely to bring some benefits to consumers, for example through lower prices, but would be unlikely to promote a significant increase in competition in this market because of the issues discussed above. As a result, it is likely that BT's competitors would continue to operate at a disadvantage in the related downstream markets.
- 8.136 The third option would provide additional benefits to BT's competitors, by addressing specific issues which inhibit competition in downstream markets, and to end users, who would see an increase in competition and may therefore benefit from greater choice, lower prices and improved service quality at the retail level.

**Proposed Remedies**Network access

- 8.137 Ofcom believes that it is appropriate to impose a requirement on BT as a result of its SMP to meet reasonable requests for Network Access. Ofcom considers that, in the absence of such a requirement, BT would have an incentive not to provide such access, and would be able to monopolise the provision in the downstream markets.

- 8.138 Section 87(3) of the Act authorises the setting of an SMP services condition requiring the dominant provider to provide such Network Access as Ofcom may, from time to time, direct. These conditions may, pursuant to Section 87(5), include provision for securing fairness and reasonableness in the way in which requests for Network Access are made and responded to and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.
- 8.139 When considering the imposition of such conditions in a particular case, Ofcom must have regard to the six factors set out in Section 87(4) of the Act, including *inter alia*, the technical and economic viability of installing other competing facilities and the feasibility of the proposed Network Access.
- 8.140 The definition of access and the way in which Ofcom might assess reasonable demands for access are set out in the Access Guidelines. Ofcom considers that it is appropriate in cases where a Communications Provider has SMP to impose an access obligation on that provider requiring it to meet all reasonable requests for Network Access within the relevant wholesale market, irrespective of the technology required, on fair and reasonable terms, conditions and charges.
- 8.141 As discussed in the SMP assessment in Section 7 there are considerable sunk costs associated with building networks to provide leased lines services. It is unlikely to be economically viable to build competing access networks on a sufficient scale to provide effective constraint on BT's SMP in the downstream markets.
- 8.142 Therefore, Ofcom is currently of the view that a requirement on BT to provide Network Access is appropriate as it facilitates competition in downstream markets by enabling Communications Providers to compete without the need to invest in a network which might not be economically viable in all cases.
- 8.143 Currently BT is required to provide three different Network Access products in this market, under the existing Directions:
- PPCs: obligation to provide PPCs terminating segments in the UK, excluding the Hull area
  - LLU Backhaul: obligation to provide LLU Backhaul traditional interface services to LLU operators to backhaul their broadband traffic from LLU sites
  - RBS Backhaul: obligation to provide RBS Backhaul circuits to Mobile Network Operators (MNOs).
- 8.144 PPCs terminating segments remain the relevant product for fostering competition in downstream markets. PPCs uptake has increased since the last review, and has contributed to foster competition in downstream markets where BT market share has declined. Ofcom therefore consider it appropriate to continue to require BT to provide PPCs. The details of the service BT has to offer are detailed in the PPC Direction in Annex 15.
- 8.145 For RBS Backhaul, MNOs have migrated in the past years a substantial portion of their retail leased lines to RBS Backhaul services. We therefore consider that it is appropriate to continue to require BT to offer RBS Backhaul. While the service has well served so far the purpose of MNOs, it needs to develop in the future to account for the predicted growth in bandwidth demand for backhauling mobile data services.

The structure of the service needs therefore to account for that, and ensure that it enables MNOs to accommodate efficiently and economically their changing backhaul requirements. The details of the service BT has to offer are outlined in the RBS Backhaul direction in Annex 15.

- 8.146 On the other hand, there has not been any demand in recent years for low bandwidth traditional interface LLU Backhaul. Our market definition has on a forward looking basis found LLU backhaul to be in the Alternative Interface market. The trend going forward is for Alternative Interface circuits at high bandwidths that offer better economies of scope and scale. We therefore consider that it is no longer appropriate to require BT to offer LLU Backhaul in this market.
- 8.147 In the course of the current market review, some OCPs have argued to Ofcom that BT has failed to make available a fit-for-purpose wholesale SDSL product, and that this has prevented them from competing effectively in the associated retail market. In addition, OCPs have complained about the pricing for BT's wholesale SDSL services.
- 8.148 We have considered OCPs representations on this matter, and reviewed it in the light of the domestic market conditions and the international experience with wholesale SDSL. In other EU countries, notably France and Belgium, wholesale SDSL has proven successful in providing a substitute for the traditional interface 2 Mbit/s leased lines retail product.
- 8.149 We believe there is a role for SDSL services to provide symmetric bandwidth to enterprises in the future. Firstly, the product potentially offers a cheaper alternative to traditional interface 2 Mbit/s leased lines, for which retail competition has been slow to emerge. Secondly, it can be provided over future broadband networks alongside residential broadband, without the need for a separate infrastructure, as it is the case for the current SDH 2 Mbit/s leased lines.
- 8.150 We therefore confirm that the access obligation applies to wholesale SDSL services as well as other traditional interface low bandwidth products. We do however recognise that with BT migrating to 21CN, it could be difficult to improve the current product (which uses separate DSLAMs from those for residential ADSL services) while investing in new platforms. We therefore would like to see BT and OCPs engaging in developing a wholesale SDSL product based on BT's MSANs and NGN. Given the uncertainty over the design of such a product, we do not feel at this stage it is appropriate for us to issue a specific Direction, but prefer to let market players agree on what the best solution should be. We will however retain the ability to issue a Direction under the proposed SMP condition in the future, should any outcome of any such agreement (or lack of) not be considered fully satisfactory for the industry and end users.
- 8.151 BT is currently subject to a Direction issued under the access condition which sets out a range of conditions under which PPCs must be provided. These conditions are currently being reviewed by the OTA, which is seeking to agree with industry an improved set of KPIs, SLAs and SLGs. This review is likely to be completed by the spring of 2008. Should the OTA's exercise lead to a set of SLAs/SLGs agreed upon by the whole industry, we would in the Final Statement to this review amend the PPC Direction to reflect the agreed outcome. Where possible we would seek to rely on a self-regulatory approach to SLAs and SLGs, rather than one based on regulatory direction.

- 8.152 In the event that the OTA's review fails to lead to an agreement, we would consult separately on the basis of the OTA's recommendation on a new set of proposals for the SLA/SLG regime, which would then be enforced under the proposed SMP conditions.
- 8.153 As explained above, we propose that certain interconnection and accommodation services should be considered as technical areas related to the markets where Ofcom has found SMP. We therefore propose to apply this condition to the technical areas outlined above.

#### Obligation not to unduly discriminate

- 8.154 Ofcom believes that it is appropriate to impose a requirement on BT as a result of its SMP in the low bandwidth TISBO market not to discriminate unduly in the provision of Network Access. Ofcom considers that, in the absence of such a requirement, the dominant provider would have an incentive to give preferential treatment to its downstream divisions.
- 8.155 Section 87(6)(a) of the Act authorises the setting of an SMP services condition requiring the dominant provider not to unduly discriminate against particular persons, or against a particular description of persons, in relation to matters connected with the provision of Network Access.
- 8.156 Where dominant providers are vertically integrated, like BT, they may have an incentive to provide wholesale services on terms and conditions that favour their own retail activities in a way that would have an adverse effect on competition. In particular, they may charge competing providers more than the amount charged (through transfer charging) to their own retail activities for wholesale services, thereby increasing the costs of competing providers and giving themselves an unfair competitive advantage. They might also provide services on different terms and conditions, for example with different delivery timescales and this would disadvantage their retail competitors and in turn consumers.
- 8.157 It could be argued that Competition Law might provide adequate provision to address allegations or evidence of discriminatory behaviour. However, Ofcom considers that at the wholesale level sector specific regulation provides a more efficient and more secure means of securing effective competition in the relevant market. In addition, it allows Ofcom to place a greater emphasis on promoting competition (for example by restricting the ability of an SMP operator to target segments of the retail market). A no undue discrimination condition would therefore ensure that parties were treated on an equitable basis.
- 8.158 Recital 17 of the Access Directive states that non-discrimination obligations ensure that undertakings with market power do not distort competition, in particular where they are vertically integrated undertakings that supply services to competitors in downstream markets. This is clearly the case with respect to low bandwidth TISBO services.
- 8.159 A prohibition of discrimination might have disadvantages if it prevented discrimination that was economically efficient or justified. However, the proposed obligation would only prevent discrimination that was undue.
- 8.160 Ofcom has considered how it will treat undue discrimination in its guidelines of 15 November 2005 on Undue discrimination by SMP providers ("the Discrimination Guidelines"). Ofcom considers that undue discrimination in particular occurs when

an SMP provider does not reflect relevant differences between (or does not reflect relevant similarities in) the circumstances of customers in the transaction conditions it offers, and where such behaviour would harm competition.

- 8.161 In the case of non-price differences in transaction conditions (and similar prices) offered by a vertically integrated SMP provider between an internal and external wholesale customer, Ofcom will presume undue discrimination. Such a presumption may be rebutted if an SMP provider can demonstrate objective justification for the differences.
- 8.162 As discussed above, we also consider that there should be a presumption that saw-tooth discounts are unduly discriminatory, in view of their potentially anti-competitive effects.
- 8.163 As explained above, we have concluded that certain interconnection and accommodation services can be considered as technical areas related to the markets where Ofcom has found SMP. We therefore propose to apply this condition to the technical areas outlined above.

### Cost orientation

- 8.164 In Section 7, we reviewed the profitability of low bandwidth TISBO and concluded that, although the reported returns earned on low bandwidth services are lower than BT's cost of capital, we have concerns that those returns may be understated. In addition, the information provided by BT suggests that for a number of its PPC services, prices are either below long run incremental cost (LRIC) or above stand alone cost (SAC). In other words, the prices of some services may be outside the range that would be expected to apply in a competitive market. As a result, efficient investment in competing wholesale infrastructure may have been deterred, and effective competition in downstream markets may have been hampered.
- 8.165 In view of these concerns, Ofcom considers that a cost orientation obligation is required to ensure that wholesale prices are in future aligned to costs. This relationship between prices and costs for individual service elements will be examined further in the proposed consultation on leased lines charge controls, which is discussed further below.
- 8.166 As explained above, we have concluded that certain interconnection and accommodation services can be considered as technical areas related to the markets where Ofcom has found SMP. We therefore propose to apply this condition to the technical areas outlined above.
- 8.167 The proposed cost accounting and accounting separation obligations are discussed at the end of this Section.

### Charge controls

- 8.168 A cost orientation obligation constrains the incumbent from charging its competitors prices that are either too high, or too low, compared with a level compatible with competitive market conditions. However, by itself it does not encourage the incumbent to reduce its costs over time by becoming more efficient in the provision of such services.
- 8.169 BT has been found to have SMP in this market, and is currently subject to charge controls expiring in September 2008. Our assessment of BT's market power has



identified continued concerns over the level of its pricing for low bandwidth TISBOs. Ofcom therefore believes that a charge control on the prices of those services is required over the next four years to create the incentives for BT to reduce its prices for low bandwidth TISBOs.

- 8.170 As noted above, several CPs have argued that BT has failed to make available wholesale SDSL services that would enable them to compete effectively in downstream markets. In particular, there has been dissatisfaction with the pricing regime, which, some OCPs have argued, is not reflective of the underlying cost of provision. In view of the concerns that have been raised, we propose to review the charge controls going forward after the current one expires in September 2008 and consider the possibility of extending it to wholesale SDSL.
- 8.171 A number of CPs have also argued that BT's charges for ancillary services such as Excess Construction Charges are excessive, and are applied in a discriminatory manner. In their view, the scope of the charge control should be extended to cover these services. We intend to consult separately on the form and level of the charge controls for wholesale leased line services.
- 8.172 As explained above, we have concluded that certain interconnection and accommodation services can be considered as technical areas related to the markets where Ofcom has found SMP. We therefore propose to include these services within the charge control.

#### Transparency and notification obligations

- 8.173 BT is currently subject to the following SMP obligations, aimed at promoting transparency and ensuring non-discrimination:
- An obligation to publish a reference offer, including terms and conditions of provisioning and repair;
  - an obligation to give 90 days notice of changes to prices, terms and conditions for existing traditional interface symmetric broadband origination services;
  - an obligation to give 28 days notice of the introduction of prices, terms and conditions for new traditional interface symmetric broadband origination services;
  - a requirement to notify technical information with 90 days notice;
  - an obligation to publish quality of service information, as directed by Ofcom; and
  - obligations relating to requests for new network access.
- 8.174 These requirements are designed to support the non discrimination obligation. In particular, they are designed to ensure that BT does not use non-price discrimination to restrict competition in downstream markets.
- 8.175 These forms of discrimination are particularly relevant when dealing with a vertically integrated incumbent, as in BT's case. Ofcom therefore consider it appropriate to maintain these obligations on BT.
- 8.176 BT is currently subject to a Direction requiring it to publish quality of service information for PPCs on a quarterly basis. We propose to amend this Direction in

the light of the OTA's review of PPC service quality, which as noted above is due to be completed in Spring 2008. This will be the subject of a separate consultation.

- 8.177 As explained above, we have concluded that certain interconnection and accommodation services can be considered as technical areas related to the markets where Ofcom has found SMP. We therefore propose to apply these conditions to the technical areas outlined above.

## Conclusions

- 8.178 After considering the above options, Ofcom proposes the following regulatory remedies for low bandwidth TISBOs:

- an obligation to provide Network Access;
- a requirement not to unduly discriminate;
- cost orientation;
- charge controls;
- a requirement to publish a reference offer;
- an obligation to give 90 days notice of changes to prices, terms and conditions for existing services;
- an obligation to give 28 days notice of the introduction of prices, terms and conditions for new services;
- a requirement to publish quality of service information;
- a requirement to notify technical information with 90 days notice; and
- obligations relating to requests for new network access.

## Communications Act tests

- 8.179 Section 47(2) of the Communications Act requires regulatory obligations to be justifiable, non-discriminatory, proportionate and transparent. They are justifiable in that they relate to the need identified to ensure competition develops fairly and to the benefit of consumers. They do not discriminate against BT in that BT is the only SMP provider in this market. They are proportionate in that BT could exploit its SMP by means of extracting supra natural profits or withdraw the provision of such services. They are transparent in that they are set out clearly in Annex 15.

## Wholesale market for high bandwidth TISBO in the UK excluding the CELA and the Hull area

### Options assessment

#### Option 1: No regulation

- 8.180 BT's market share in this market is estimated to be 45%. In the light of this finding and other factors discussed in Section 7, we have found BT to have SMP in this market.

- 8.181 Under these circumstances, if ex ante obligations were to be withdrawn in their entirety, there is a risk that BT would cease to make its network facilities available to competing firms, either entirely or on terms and conditions that were not unduly discriminatory. Such behaviour could reduce the choice of suppliers available to consumers of related retail services or otherwise restrict competition in downstream markets. It would also be likely to have distributional effects, benefiting BT at the expense of competing suppliers.
- 8.182 We therefore believe, in accordance with the EC SMP Guidelines, that this option should be rejected.

### Option 2: Status quo

- 8.183 BT is currently subject to the following obligations in this market: obligation to provide network access, obligation not to unduly discriminate, cost orientation and accounting separation, charge controls, a set of transparency obligation, and a quality of service obligation. The full details of the current obligations applying to BT have been outlined earlier in this Section.
- 8.184 BT is subject to essentially the same set of SMP obligations in this market as in the wholesale market low bandwidth TISBOs, including a charge control. In this case, however, the remedies have been more successful in supporting an increase in competition. This is reflected in the emergence of a separate CELA market for high bandwidth services, in which no supplier has SMP, and in the reduction in BT's market share in other parts of the UK.
- 8.185 However, Ofcom does not believe it would be appropriate simply to maintain the status quo. Some of the weaknesses in the current regime that were discussed above in relation to low bandwidth services also apply in the high bandwidth market. In particular, the shortcomings of the SLA/SLG regime, which is regarded as over-complex and in some respects ineffective.
- 8.186 As noted in the sub-section on the low bandwidth TISBO market, some CPs also believe that PPCs are over-priced, and we understand that their concerns extend to the pricing of high bandwidth services, even though the reported returns on those services are once again well below BT's cost of capital.

### Option 3: Variations and additional measures

- 8.187 The measures aimed at addressing weaknesses in the current regime include some of those discussed above in the context of low bandwidth services:
- Reviewing the SLA regime;
  - seeking a commitment from BT to consult on the introduction of more efficiently designed SDH access and backhaul products.
- 8.188 With respect to these issues, the approach described earlier in the sub section on the low bandwidth TISBO market applies here as well.

### Impact on stakeholders

- 8.189 While BT would gain from the withdrawal of regulation, its competitors may be exposed to anti competitive behaviour that would prevent them from competing effectively with BT in downstream markets. We do not consider that the option of no

regulation would therefore further their interests, or the interests of citizens and consumers in this market.

- 8.190 Maintaining the status quo would fail to address the weaknesses of the current regime. This would potentially benefit BT, but could damage its competitors to the potential detriment of consumers in downstream markets.
- 8.191 Overall, we believe that the proposed variations and additional measures for this market will further the interests of citizens and consumers by promoting the continued growth of competition, which in turn is likely to lead to greater choice, lower prices, improved service quality and more rapid innovation in downstream retail markets.

## **Proposed remedies**

### Network access

- 8.192 Ofcom believes that it is appropriate to impose a requirement on BT as a result of its SMP to meet reasonable requests for Network Access. Ofcom considers that, in the absence of such a requirement, BT would have an incentive not to provide such access, and would be able to monopolise the provision in downstream markets.
- 8.193 The considerations relevant to network access are essentially the same in this market as in the wholesale market for low bandwidth TISBO, as discussed above.
- 8.194 As in the case of low bandwidth TISBO, Ofcom proposes that this condition should also apply to the interconnection and accommodation services outlined above which can be considered as technical areas related to high bandwidth TISBO provision.
- 8.195 BT is currently subject to a PPC direction in this market. For the same reasons discussed in relation to the low bandwidth TISBO market, we propose that BT should continue to be subject to a PPC Direction in this market.

### No undue discrimination

- 8.196 Ofcom believes that it is appropriate to impose a requirement on BT as a result of its SMP in the low bandwidth TISBOs market not to discriminate unduly in the provision of Network Access. Ofcom considers that, in the absence of such a requirement, the dominant provider would have an incentive to give preferential treatment to its downstream divisions.
- 8.197 The basis for this proposal is the same as in the case of low bandwidth TISBOs, as discussed earlier in this Section.
- 8.198 As in the case of low bandwidth TISBOs, Ofcom proposes that this condition should also apply to the interconnection and accommodation services discussed above which can be considered as technical areas related to high bandwidth TISBO provision.

### Cost orientation

- 8.199 Ofcom proposes to retain the cost orientation obligation which currently applies in this market, for the same reasons discussed above in relation to low bandwidth TISBO.

8.200 We propose that this condition should also apply to the interconnection and accommodation services which can be considered as technical areas related to high bandwidth TISBO provision in this market.

### Charge controls

8.201 In this market, BT is currently subject to a charge control which expires in September 2008. Ofcom currently considers that a new charge control should be introduced at that time, which will be the subject of a separate consultation.

8.202 We propose that the interconnection and accommodation services which, as discussed above, can be considered as technical areas related to this market, should be included within the charge control.

### Transparency and notification obligations

8.203 BT is currently subject to the following transparency and notification obligations:

- An obligation to publish a reference offer, including terms and conditions of provisioning and repair;
- an obligation to give 90 days notice of changes to prices, terms and conditions for existing services;
- an obligation to give 28 days notice of the introduction of prices, terms and conditions for new services;
- a requirement to publish quality of service information;
- a requirement to notify technical information with 90 days notice; and
- obligations relating to requests for new network access.

8.204 As in the case of low bandwidth TISBO, these requirements are designed to ensure that BT does not use non-price discrimination to favour its own downstream business. Ofcom considers that the case for such obligations remains strong and therefore proposes to retain these conditions.

8.205 We propose that this condition should also apply to the interconnection and accommodation services discussed above which can be considered as technical areas related to high bandwidth TISBO provision.

### Conclusions

8.206 After considering the above options, Ofcom proposes the following SMP remedies for the high bandwidth TISBO market in the UK excluding the CELA and the Hull area:

- an obligation to provide Network Access;
- a requirement not to unduly discriminate;
- cost orientation;
- charge controls;

- a requirement to publish a reference offer;
- an obligation to give 90 days notice of changes to prices, terms and conditions for existing services;
- an obligation to give 28 days notice of the introduction of prices, terms and conditions for new services;
- a requirement to publish quality of service information;
- a requirement to notify technical information with 90 days notice; and
- obligations relating to requests for new network access.

### Communications Act tests

8.207 Section 47(2) of the Communications Act requires regulatory obligations to be justifiable, non-discriminatory, proportionate and transparent. They are justifiable in that they relate to the need identified to ensure competition develops fairly and to the benefit of consumers. They do not discriminate against BT in that BT is the only SMP provider in this market. They are proportionate in that BT could exploit its SMP by means of extracting supra natural profits or withdraw the provision of such services. They are transparent in that they are set out clearly in Annex 15.

*Question 16: Do stakeholders agree with our assessment of the appropriate regulatory option and our proposed remedies for the wholesale TISBO markets in the UK excluding the Hull area?*

## Wholesale market for low bandwidth AISBOs in the UK

### Options assessment

#### Option 1: no regulation

8.208 In our view, the option of no regulation in this market should be rejected, for essentially the same reasons as were discussed above in relation to low bandwidth TISBO services.

8.209 BT has been found to have SMP in this market, with a high market share (72%) which has changed little in recent years. BT has control over bottleneck facilities in the access and backhaul network. Unless it is obliged to make these facilities available to its competitors in the related downstream markets, and to do so on terms which are not unduly discriminatory, it would have little incentive to do so.

8.210 We therefore propose to reject the no regulation option.

#### Option 2: status quo

8.211 As noted above, BT is currently subject to the following obligations in this market: an obligation to provide network access, a requirement not to unduly discriminate, cost orientation and accounting separation obligations, and a set of transparency obligations. A charge control was not applied because the market was at a very early stage of development in 2004, and it was considered that a charge control might impede its growth.

- 8.212 The services in this market are also affected in an important way by the BT Undertakings. The Undertakings commit BT to providing WES, BES, WEES, WES Access and WES Backhaul services on an EOI basis.
- 8.213 The current regime has had some success in promoting competition in related downstream markets. Most obviously, the growth of LLU-based broadband competition has been assisted by the availability of BES, demand for which has increased dramatically in the past 2-3 years. Sales of BT's other AISBO services have also grown, although less rapidly, and perhaps less quickly than had been anticipated at the time of the 2003/04 Review.
- 8.214 BT's competitors argue that AISBO demand has been impeded, not by any lack of market potential, but by shortcomings in BT's services. We consider below whether these arguments have substance and, if so, how the regulatory environment can be amended to address them.

### Option 3: variations and additional measures

- 8.215 We have considered a number of possible variations, most of which are related to the issues raised by CPs, which include the following:
- i) Poor quality of service;
  - ii) The high cost of space in exchanges and restrictions on the uses to which it can be put;
  - iii) Poor product development, and particularly delays in developing backhaul products based on more efficient WDM technology;
  - iv) Distance limitations on BES and WES services; and
  - v) Excessive and discriminatory pricing.
- 8.216 We have also considered whether the existing regime can be simplified, to take advantage of BT's commitment to provide wholesale Ethernet services on the basis of EOI.
- 8.217 The first of these issues is currently being addressed in a separate consultation on the Openreach SLA/SLG regime<sup>162</sup>. The final policy from that consultation will be reflected in the Final Statement that will conclude this market review. We propose to roll over the outcome of this consultation on to the newly defined low bandwidth AISBO market.

### *Accommodation in local exchanges*

- 8.218 A number of CPs have either rented or are interested in renting, space in BT local exchanges for the purpose of terminating and aggregating AISBO circuits. BT provides a 'Netlocate' service in order to meet these demands. However, some CPs argue that this service, which is not currently subject to ex ante regulation, is over-priced. They also object to the fact that they are not permitted to use the same space to house, for example, LLU and AISBO equipment – they are not permitted to use the much cheaper co-mingling space used for LLU to house AISBO equipment, which they argue would enable them to use the space more efficiently.

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<sup>162</sup> See: <http://www.ofcom.org.uk/consult/condocs/slg/>

- 8.219 As discussed earlier in this Section, we believe that accommodation services for wholesale AISBO should be regarded as a technical area, related to the markets for wholesale leased lines and should be regulated. Earlier in the Section we have outlined the type of services BT should offer. Below we detail the remedies that should apply to such services.

*Product development*

- 8.220 Several CPs have argued that BT has been slow to develop Ethernet services based on WDM technology to provide more efficient backhaul solutions. At present, WESs, BESs and WEES are provisioned using point-to-point fibre.
- 8.221 Ofcom has sought to address this issue through discussions with BT over the implementation of the Undertakings. BT, through Openreach, plans to invest in the development of a new national backhaul network which will make extensive use of WDM technology. This is being taken forward by Openreach in a project known as Project Orchid.
- 8.222 Ofcom is currently seeking from BT a commitment to a roll-out timetable for wholesale Ethernet products based on this new backhaul network. The outcome of the Undertakings discussions will be the subject of a separate consultation, which we expect to be published later in 2008.

*Limited distance of BES and WES services*

- 8.223 BES and WES circuits currently offered under the Undertakings are limited to distances of 25 Kms (with an extended reach product of 35 Kms distance limit), to ensure that OCPs would not use these services for building their own long distance trunk or core networks.
- 8.224 Since the Undertakings came into effect, however, a number of CPs, including BT, have argued that the current limits are creating problems in limiting the availability and use of WES and BES circuits, and that they should therefore be removed.
- 8.225 We have considered this issue in the context of our discussion with BT on the implementation of the Undertakings, and have agreed that such restrictions should be removed. Our concern over the use of BT's Ethernet circuits to construct core networks will be addressed by clarifying that BT is not obliged to provide wholesale Ethernet trunk services, as these are not included in the market for trunk segments. BT's obligations in respect of AI terminating segments relate to the provision of access and backhaul services alone. It is anticipated that BT will meet these obligations by providing services out of Openreach, which in accordance with the Undertakings will not be involved in the provision of trunk services. This issue will be discussed further in the future consultation on BT's Undertakings referred to above.

*Excessive and discriminatory pricing*

- 8.226 As discussed in Section 7, one of BT's competitors submitted a complaint to Ofcom in May 2007, alleging that the prices for some of BT's wholesale Ethernet services are excessive and that the structure of charges is designed to discriminate against external customers and in favour of BT's own downstream business. Ofcom decided not to open an investigation into this complaint on the grounds that the issue could best be addressed in the context of this market review.



- 8.227 As part of this review, we have examined the pricing of BT's wholesale Ethernet services, and our results are set out in Annex 12. We have concluded that, on the basis of the data currently available, the structure of the prices proposed by BT appears to be broadly aligned with cost, but that the returns earned on these services are somewhat higher than BT's cost of capital.
- 8.228 Looking ahead, and taking account of the planned investment in Project Orchid, we consider it important to ensure both (i) that BT has an incentive to improve the efficiency of its service provision and (ii) that BT's wholesale customers benefit from cost reductions thereby achieved. In our view the best way to further these objectives is to impose a charge control on the services provided by BT in the wholesale market for low bandwidth AISBO services. We therefore propose to introduce such a control, the details of which would be the subject of a separate consultation.

#### *Simplification of existing regime*

- 8.229 A significant development in this market since 2004 is that, under the terms of the Undertakings, BT is now committed to provide a range of AISBO services on an EOI basis out of Openreach. The provisions of the Undertakings are also designed to prevent information flows out of Openreach to other parts of BT which might give BT's downstream businesses a competitive advantage. These commitments should mean that BT is no longer in a position to discriminate in favour of its own downstream business when providing services such as WES, BES and WEES. They also provide an opportunity to simplify the existing framework for wholesale AISBOs.
- 8.230 Given the application of EOI, Ofcom considers that it may no longer be necessary to maintain the existing SMP obligations related to the notification of changes to prices, terms and conditions, technical information and requests for new network access. That is because the application of EOI should itself ensure that BT is not in a position to discriminate in these areas in favour of its own downstream business.
- 8.231 Ofcom therefore proposes to retain the obligation to publish a reference offer, but to remove the specific obligations related to advance notifications. However, if developments in the market indicate that the EOI commitment has been less than fully effective in preventing non-price discrimination, Ofcom will consider the re-imposition of such obligations.
- 8.232 In conclusion, in response to the competitive problems identified during the course of this review, we propose the following variations to the current framework for wholesale AISBO services to apply to the low bandwidth wholesale AISBO market in the UK:
- regulate SLAs/SLGs;
  - regulate the provision of accommodation services required by OCPs to aggregate wholesale AISBO services; and
  - impose charge controls on low bandwidth wholesale AISBO services.

#### Impact on stakeholders

- 8.233 There is a significant risk that, without ex ante regulation, effective competition would fail to develop in the associated retail markets, and that this would be

detrimental to citizen and consumer interests, while providing BT with an unfair advantage over its competitors.

- 8.234 Keeping the current regulation without any changes (“status quo”), on the other hand, would fall short of promoting effective competition to the benefit of end users in downstream market, given the competitive problems discussed above.
- 8.235 We believe that the proposed variations and additional measures best serve the interests of BT’s competitors and consumers in downstream markets, while at the same time lowering the regulatory burden on BT by removing transparency obligation that are addressed through BTs voluntary undertakings provided at the end of the Telecom Strategy Review (TSR).

## **Proposed remedies**

### Network access

- 8.236 Ofcom believes that it is appropriate to impose a requirement on BT as a result of its SMP to meet reasonable requests for Network Access. Ofcom considers that, in the absence of such a requirement, BT would have an incentive not to provide such access, and would be able to monopolise the provision in the downstream markets.
- 8.237 The considerations underlying this proposal are essentially the same as those discussed above in the context of low bandwidth TISBOs and will not be repeated here.
- 8.238 Under the existing SMP provisions, BT provides two different Network Access products in this market:
- Wholesale Ethernet Services (WES); and
  - Backhaul Extension Services (BES).
- 8.239 WESs are increasingly becoming important inputs into competing Ethernet retail services and are likely to do so even more once BT’s planned migration to 21CN is completed. As such, Ofcom believes that BT should continue to be obliged to offer WESs to its competitors.
- 8.240 BT’s current portfolio for Ethernet-based LLU backhaul products is represented by Backhaul Extension Services (BESs). Such services have become increasingly important in allowing competing LLU providers to groom their traffic from LLU sites back onto their networks, hence enabling more effective competition in downstream broadband markets. Ofcom believes that BT should continue to offer such services in the future.
- 8.241 For both these services, however, we believe that the Undertakings provide sufficient guarantees with respect to the types of product that BT should offer and the way it should offer them, that there is no need to issue specific Directions. Ofcom will retain in any case the ability to issue such Directions, should problems arise that warrant such intervention.
- 8.242 In addition, as discussed above, BT has committed through the Undertakings to provide WES Access, WES Backhaul and WEES services. To the extent that these services fall within the low bandwidth AISBO market (i.e. to the extent that these services operate at bandwidths of up to and including 1Gbit/s), Ofcom considers it

appropriate for these commitments to be reflected in BT's SMP obligations. The WES Direction in Annex 15 has been amended accordingly.

- 8.243 The 2003/04 Review did not include a Direction setting out detailed requirements for the provision of AISBO services – there was no equivalent of the PPC Direction. However, as the importance of Ethernet services increased, the absence of any SLA/SLG regulation led to a significant amount of dissatisfaction amongst BT's wholesale customers. Ethernet services were therefore included in a recently completed Ofcom review of the service level obligations applied to Openreach.
- 8.244 The results of that review were published on 10 December 2007 and, in the case of Ethernet services, will be implemented through a Direction issued pursuant to the Network Access obligation imposed by the 2003/04 Review.
- 8.245 Because of the change in the AISBO market definition, the new Direction will cease to apply from the date when the new LLMR provisions enter into force. However, we propose to carry over the existing quality of service obligations into the new framework, and re-impose such obligations under the new SMP conditions for wholesale low bandwidth AISBOs. The details of such requirements are outlined in the Wholesale Ethernet SLAs/SLGs Direction in Annex 15.
- 8.246 It is proposed that this condition should also apply to the interconnection and accommodation services discussed above which can be considered as technical areas related to low bandwidth AISBO provision.

#### No undue discrimination

- 8.247 Ofcom believes that it is appropriate to impose a requirement on BT as a result of its SMP in the low bandwidth AISBOs market not to discriminate unduly in the provision of Network Access. Ofcom considers that, in the absence of such a requirement, the dominant provider would have an incentive to give preferential treatment to its downstream divisions.
- 8.248 The factors underlying this proposal is the same as those set out above in the context of the wholesale market for low bandwidth TISBOs.
- 8.249 We propose that this condition should also apply to the interconnection and accommodation services discussed above which can be considered as technical areas related to the low bandwidth AISBO market.

#### Cost orientation

- 8.250 Ofcom proposes that BT's provision of low bandwidth AISBO services should be subject, as now, to cost orientation. The rationale for these proposals is as set out above in the sub-section on low bandwidth TISBOs
- 8.251 It is proposed that this condition should also apply to the interconnection and accommodation services discussed above which can be considered as technical areas related to low bandwidth AISBO provision.

#### Charge controls

- 8.252 As noted above, the 2003/04 Review did not impose a charge control on BT in the AISBO market because that market was at that stage at a very early stage of

development, and a charge control might have stifled its growth. Those circumstances no longer apply.

- 8.253 As shown in Section 5 and in Annex 5, the market for AISBO services has grown rapidly in recent years, and it is expected to continue to grow over the period covered by this market review.
- 8.254 In addition, as discussed in section 7, the returns currently earned by BT on its AISBO services are significantly higher than its cost of capital, and planned investments by BT (notably in the backhaul network) are expected to bring down the costs of providing these services significantly over the next few years.
- 8.255 Finally, a number of stakeholders have expressed concern that the prices of particular AISBO services are excessive, and that BT has rebalanced its AISBO tariffs in a way which does not reflect the underlying costs of service provision, and which favours BT's own downstream business. On this last point, Ofcom has reviewed information provided by BT on the justification for its price rebalancing, and the results are set out on Annex 12.
- 8.256 In the light of these factors, Ofcom considers that a charge control should be applied to BT's low bandwidth AISBO services, in order to ensure that BT has an appropriate incentive to improve the efficiency of its operations and that its wholesale customers benefit from such improvements through lower prices. This in turn should help to promote effective competition and market growth in the associated retail market.
- 8.257 We propose that the charge control should also cover the interconnection and accommodation services discussed above which can be regarded as technical areas related to this market.
- 8.258 The form of the proposed charge control would be the subject of a separate consultation. As a result we propose that the obligation to comply with the charge control does not become effective until after this separate review and consultation is completed.

### Transparency and notification obligations

- 8.259 BT is currently subject to the following transparency obligations:
- i) an obligation to publish a reference offer;
  - ii) an obligation to give 90 days notice of changes to prices, terms and conditions for existing services;
  - iii) an obligation to give 28 days notice of the introduction of prices, terms and conditions for new services;
  - iv) an obligation to publish quality of service information;
  - v) a requirement to notify technical information with 90 days Notice; and
  - vi) obligations relating to requests for new network access.

- 8.260 As in the case of wholesale TISBO markets, these obligations are designed to ensure that BT does not use non-price discrimination to favour its own retail business at the expense of its retail competitors.
- 8.261 As discussed above, Ofcom considers that, given BT's commitment to EOI for the main AISBO services, it may no longer be necessary to impose specific obligations related to the notification of changes to prices, terms and conditions, technical information, quality of service and requests for new network access (i.e. (ii) – (vi) above) other than the requirement to give reasonable notice of any changes to Ofcom and affected third parties. That is because the application of EOI should itself ensure that BT is not in a position to discriminate in these areas in favour of its own downstream business.
- 8.262 Ofcom therefore proposes to retain the requirement to publish a reference offer, but to remove the obligations referred to in points (ii) – (vi) above, replacing them with a general obligation to notify Ofcom and affected third parties a reasonable period before any amendments are made. If the EOI obligations turn out to be less than fully effective in preventing undue discrimination, we would review the situation and re-consider the imposition additional measures as required.
- 8.263 We propose that the requirement to publish a reference offer should also apply to the interconnection and accommodation services discussed earlier in this Section.

### Conclusions

- 8.264 On the basis of the above, we propose to reject the no regulation option on the grounds that it would be likely to lead to a reduction of competition in downstream retail markets, which would be against the interests of citizens and consumers.
- 8.265 We propose to retain a number of the existing SMP obligations but to make several modifications to the current regime. These include the introduction of a charge control and the removal of certain transparency and notification obligations, in recognition of BT's commitment to EOI in this market. We believe that these proposals will meet our primary objective of furthering the interests of citizens and consumers, while minimising the burden of regulation.
- 8.266 After considering all the above options, Ofcom proposes to apply the following SMP obligations to BT in this market:
- an obligation to provide Network Access;
  - a requirement not to unduly discriminate;
  - cost orientation;
  - charge controls; and
  - a requirement to publish a reference offer.

### **Communications Act tests**

- 8.267 Section 47(2) of the Communications Act requires regulatory obligations to be justifiable, non-discriminatory, proportionate and transparent. They are justifiable in that they relate to the need identified to ensure competition develops fairly and to the benefit of consumers. They do not discriminate against BT in that BT is the only

SMP provider in this market. They are proportionate in that BT could exploit its SMP by means of extracting supra natural profits or withdraw the provision of such services. They are transparent in that they are set out clearly in Annex 15.

*Question 17: Do stakeholders agree with our assessment of the appropriate regulatory option and our proposed remedies for the wholesale low bandwidth AISBO market in the UK excluding the Hull area?*

## Wholesale market for trunk segments

### Options assessment

#### Option 1: no regulation

- 8.268 The 2003/04 Review concluded that BT had SMP in this market, but that in the future years we should expect a competitive environment to emerge. However, our SMP assessment in Section 7 shows that competition has not increased to the extent expected, and that BT retains a dominant position in this market, with a persistently high market share and rates of return which are well above its cost of capital.
- 8.269 Given BT's SMP position, Ofcom believes that in the absence of regulation there is a significant risk that BT would cease to provide trunk services to other CPs on terms which are not unduly discriminatory, and this would lead to a reduction or distortion of competition in downstream markets, to the detriment of consumers. Ofcom therefore rejects the no regulation option.

#### Option 2: status quo

- 8.270 BT is currently subject to the following obligations in this market: obligation to provide network access, obligation not to unduly discriminate, cost orientation and accounting separation, a set of transparency obligation, and a quality of service obligation. The full details of the current obligations applying to BT have been outlined earlier in this Section.
- 8.271 The current regime can be considered successful in some respects in that it has ensured that other CPs have access to PPC trunk services of reasonable quality. This in turn has enabled other CPs to compete in downstream retail markets more effectively than would otherwise have been the case.
- 8.272 However, the existing regulatory framework has in some respects failed to promote the desired outcome. Below we discuss the competitive issues we have identified in the course of this review.

#### *Prices*

- 8.273 The price of trunk services remains very high, despite the cost orientation obligation. This is to some extent linked to shortcomings in BT's regulatory accounting system, which until recently made the available profitability data unreliable. It may also be due to the fact that the cost orientation obligation, as currently interpreted, only requires individual tariffs to fall between a LRIC floor and a Stand Alone Cost ceiling. This is a relatively weak constraint as the range between floor and ceiling can be large and there is no additional restriction on the average level of prices or profitability for the services in the market. Ofcom believes that the high price of

trunk services has contributed to the high level of prices for long distance retail circuits, which as noted in Section 5 are well above the EC average.

### *Replicability*

8.274 As discussed above in the context of TISBOs, Ofcom's April 2006 statement on replicability found that, for a variety of reasons, BT's low bandwidth retail leased lines were not replicable by its competitors. These reasons were related to weaknesses in the provision by BT of PPC wholesale products, including trunk segments.

### *Service quality and KPIs*

8.275 Again, as discussed above in relation to TISBOs, many CPs consider that the existing regulatory framework for service quality is over-complex and in some respects ineffective.

8.276 Given these shortcomings, Ofcom does not believe it would be appropriate simply to maintain the existing set of SMP obligations. Possible variations and additional measures are discussed below.

### Option 3: variations and additional remedies

8.277 Our proposed approach in this market is based on the following:

- i) maintaining the existing SMP obligations broadly as they are at present;
- ii) introducing a charge control for trunk services;
- iii) reviewing the SLA regime;
- iv) requiring BT to address flaws in the PPC regulatory accounting regime; and
- v) encouraging BT to address the other obstacles to replicability identified in the 2006 review.

8.278 The rationale for points (iii) – (v) is the same as discussed above in the context of wholesale SMP TISBO services.

8.279 In terms of changes to the existing regime, our most significant proposal is the introduction of a charge control. In our view, this is the best way to ensure that the average level of prices for trunk services is reasonably related to cost. The implementation of a charge control is likely to lead to a significant reduction in the price of trunk segments, which in turn is likely to be reflected in lower prices in the retail market.

### Impact on stakeholders

8.280 In the presence of BT's SMP in the market for trunk segments, the no regulation option would fail to promote competition and to further the interests of consumers and citizens in downstream markets.

8.281 The status quo, on the other hand, would fall short of adequately addressing the competitive problems discussed above, and in particular the persisting high prices of trunk segments. This, in turn, will give BT's an advantage, in the for of continued

excess profits on trunk segments, with downstream customers paying the highest price in the form of expensive downstream long distance circuits.

- 8.282 We believe that the proposed variations and additional measures will benefit alternative providers and consumers, while ensuring that BT is still able to earn a reasonable rate of return on its investment in trunk provision. In particular, by extending the charge control to trunk segments, consumers in downstream markets should enjoy in the future lower prices for long distance leased lines in the UK.

## **Proposed remedies**

### Network access

- 8.283 BT is currently under an obligation to provide network access to trunk segments upon request on fair and reasonable terms. As BT has been found to have SMP in this market, Ofcom proposes that this obligation should continue to apply. The considerations which underpin this proposal are the same as those discussed above in the context of low bandwidth TISBOs. It is proposed that this condition should also apply to the interconnection and accommodation services discussed above which are related to the provision of trunk segments.

### No undue discrimination

- 8.284 BT is currently prohibited from discriminating unduly against any person or class of persons in relation to matters connected with Network Access. Ofcom proposes that this requirement should remain in place. The rationale for this proposal is as set out above in the sub-section on the low bandwidth TISBO market.
- 8.285 We consider that this condition should also apply to the interconnection and accommodation services discussed above which are related to the provision of trunk segments.

### Cost orientation

- 8.286 BT is currently subject to a basis of charges obligation which requires it to be able to demonstrate that its charges for trunk segments are reasonably derived from the costs of provision, measured on a forward looking LRIC basis. Ofcom proposes that this obligation should continue to apply.
- 8.287 The purpose of the cost orientation obligation is to ensure that the charges for trunk segments lie within the range that would be expected to apply in an effectively competitive market. This means that they should in all cases lie between the LRIC floor and the SAC ceiling for the service concerned. The prices of groups of services within the trunk segments market should also meet the relevant combinatorial tests i.e. for any service combination, prices should not be either below the LRIC floor or above the SAC ceiling.
- 8.288 We believe that this condition should also apply to the interconnection and accommodation services discussed above which are related to the provision of trunk segments.

### Charge controls

- 8.289 As noted above, the 2003/04 Review did not impose a charge control on trunk segments because the market was regarded as prospectively competitive. As



discussed in Section 7, however, the anticipated increase in competition has not occurred in this market: BT's market share remains high and the prices for trunk segments continue to generate very high rates of return, well in excess of BT's cost of capital. There is also no indication that the level of competition is likely to increase significantly over the lifetime of this market review.

- 8.290 Given these circumstances, we propose to review the possibility to introduce a charge control for BT's PPC trunk segment services. The purpose of this control will be to ensure that the returns earned by BT on these services are adequate but not excessive, that BT has an incentive to improve the efficiency of service provision, and that BT's customers benefit from efficiency improvements through lower prices.
- 8.291 We propose that the charge control should also apply to the interconnection and accommodation services discussed above which are related to the provision of trunk segments.
- 8.292 The form of the proposed charge control will be the subject of a separate consultation. As a result we propose that the obligation to comply with the charge control does not become effective until after this separate review and consultation is completed.

### Transparency and notification obligations

- 8.293 BT is currently subject to the following SMP obligations, which are designed to promote transparency and non-discrimination:
- a requirement to publish a reference offer;
  - same day notification of changes to prices, terms and conditions for wholesale trunk segment products;
  - a requirement to provide quality of service information;
  - a requirement to notify technical information with 90 days notice; and
  - obligations relating to requests for new network access.
- 8.294 Given BT's continued position of SMP in this market, we propose to retain these conditions, with certain modifications. Specifically, we propose to amend the same day notification requirement to bring it into line with the requirements which apply in the markets for terminating segments. As a result, BT will be required to give 90 days notice of changes to prices, terms and conditions for existing services and 28 days notice of the introduction of prices and terms and conditions for new services.
- 8.295 We consider that this condition should also apply to the interconnection and accommodation services discussed above which are related to the provision of trunk segments.

### Conclusions

- 8.296 After considering the above options, Ofcom proposes the following regulatory framework for trunk segments:
- an obligation to provide Network Access;

- a requirement not to unduly discriminate;
- cost orientation;
- a charge control;
- a requirement to publish a reference offer;
- an obligation to give 90 days notice of changes to prices, terms and conditions for existing services;
- an obligation to give 28 days notice of the introduction of prices, terms and conditions for new services;
- a requirement to provide quality of service information;
- requirement to notify technical information with 90 days. notice; and
- obligations relating to requests for new network access.

### Communications Act tests

8.297 Section 47(2) of the Communications Act requires regulatory obligations to be justifiable, non-discriminatory, proportionate and transparent. They are justifiable in that they relate to the need identified to ensure competition develops fairly and to the benefit of consumers. They do not discriminate against BT in that BT is the only SMP provider in this market. They are proportionate in that BT could exploit its SMP by means of extracting supra natural profits or withdraw the provision of such services. They are transparent in that the as they are set of clearly in Annex 15.

*Question 18: Do stakeholders agree with our assessment of the appropriate regulatory option and our proposed remedies for the wholesale trunk market?*

### Retail market for low bandwidth leased lines

#### Existing remedies

8.298 In the 2003/04 Review, BT was found to have SMP in the market for analogue and low bandwidth retail leased lines, comprising analogue and digital services of speeds up to and including 2 Mbit/s and 8 Mbit/s, provided over a traditional interface. This was the only retail product market in which SMP was found and hence in which remedies could be imposed. As a result of the SMP finding, the Final Statement concluding the 2003/04 Review sets out the following retail level remedies:

- An obligation to supply on reasonable request the minimum set of retail leased lines and to continue to supply existing 8Mbit/s retail traditional interface leased lines being provided on the date the conditions entered into force;
- a requirement not to unduly discriminate. As indicated in Paragraph 5.54 of the statement, Ofcom considered that this condition should not prevent BT from setting geographically deaveraged tariffs, provided that in doing so it did not

discriminate between customers or have a material adverse effect on competition;

- a voluntary undertaking by BT not to increase the weighted average price of analogue and 8 Mbit/s leased lines by more than RPI before June 2006 or the implementation of the next market review, whichever was the earlier; combined with cost orientation and a cost accounting system to take effect only if BT breaches this voluntary undertaking;
- for all leased lines in this market, a requirement to publish a reference offer (obligation to publish current prices, terms and conditions; and same day price notification); and
- a requirement to publish information concerning delivery and repair times.

8.299 For digital retail leased lines, Ofcom decided to rely on the increased competition expected as a result of wholesale regulation, in particular the price control on wholesale TISBOs, to constrain prices at the retail level.

### Objectives of the retail remedies

8.300 The retail market remedies described above can broadly be divided into three groups on the basis of their underlying aim:

- Remedies intended to ensure supply (continuation of existing supply in the case of 8MBit/s circuits). The obligation to supply the Minimum Set of Leased Lines was a requirement under the Universal Service Directive (USD);
- Remedies intended to prevent exploitation of customers by means of high prices. The relevant retail level remedy is the voluntary undertaking on prices of analogue and 8 Mbit/s circuits. As the intended constraint on (other) digital retail circuit prices was provided by competition based on wholesale remedies, this is considered in the discussion of wholesale remedies above; and
- Remedies intended to prevent anti-competitive behaviour and promote competition. These include the non-discrimination and transparency (publication of prices and conditions) obligations which (it was argued) make it easier for customers to switch supplier. Non-discrimination obligations may also protect particular groups of retail customers from unfair pricing and conditions. These benefits were felt to outweigh the dangers of price publication leading to price following and hence to muted competition. It should also be noted that transparency was a requirement under the USD.

### **Options assessment**

#### Option 1: no regulation

8.301 As discussed in Section 7, BT has been found to have SMP in the market for retail low bandwidth traditional interface leased lines. It is nevertheless important to consider whether there is scope for removing ex ante controls from this market. The option to consider the removal of existing regulation despite the finding of SMP has its origin in Ofcom's obligation under s. 91(2) of the Act (and Art. 17(1) (6) of the USD) to consider whether the imposing of wholesale regulation in the upstream market suffices to achieve its duties and objectives with regards to the relevant downstream market. This thought is strengthened by the fact that the low bandwidth

retail market has now been removed from the list of markets which the EC considers likely to require ex ante regulation. In addition, it is important to consider this option because Ofcom's TSR looked forward to a time when the remaining ex ante controls could be removed from retail markets, and wholesale remedies alone could be used to promote effective competition in downstream markets.

8.302 Ofcom still adheres to the regulatory strategy set out in the TSR. We still therefore anticipate that at some point in the future it should be possible to remove ex ante regulation from the retail market for low bandwidth leased lines, and to rely solely on wholesale regulation. However, we believe that it would be premature to do so at present, for the following reasons:

- As the SMP analysis has shown, BT has a position of entrenched dominance in this market, with a persistently high market share which has increased since the last market review; and
- Ofcom's April 2006 statement on replicability concluded that the services provided by BT in this market are not yet technically and commercially replicable by its competitors. The statement identified a number of issues which BT had to address before the services could be considered replicable, and before steps towards deregulation could be taken.

8.303 We do not consider that the wholesale remedies applied in the related upstream market have been sufficiently effective to warrant deregulation of the retail market. If the existing SMP obligations were to be removed, there is a risk that BT would be able to use its market position to restrict competition in the retail market either (i) by discriminating in favour of its own retail arm when supplying wholesale inputs and/or (ii) through price discrimination in the retail market, discounting where competition is strong and increasing prices where competition is weak. It is also possible that BT would cease to provide some of the legacy services in this market (such as analogue leased lines) prematurely, in order force customers to migrate to newer and more profitable services. Outcomes of this sort would not be in the interests of citizens and consumers.

8.304 For these reasons, we propose to reject the no regulation option. We do, however, believe that it would be appropriate to apply a sunset clause to the SMP obligations imposed in this market, to reflect our view that the development of more effective wholesale remedies will in due course make it unnecessary to apply ex ante regulation at the retail level. We therefore propose that the SMP obligations outlined discussed below should apply for a fixed period of 4 years. If no further market review has been completed during that time which could decide otherwise, the obligations should cease to apply at the end of the period.

### Option 2: status quo

8.305 Broadly speaking, the obligations imposed following the 2003/04 Review, which are described above, were designed to ensure (i) that low bandwidth retail services were universally available and (ii) that the terms on which they were made available did not discriminate unduly between customers and did not involve a margin squeeze. The latter objective was supported by price publication requirements, which would make it easier to identify transgressions. BT also gave an important undertaking to limit price increases for analogue services.

- 8.306 These obligations were comparatively 'light touch' in nature, reflecting Ofcom's view that where possible, regulatory intervention should focus on providing non-discriminatory access to upstream bottlenecks.
- 8.307 It is apparent from the analysis in Section 7 that the existing remedies have not been effective in promoting the development of competition in this market: BT continues to have SMP, and its share of the market has increased to 80%. In Ofcom's view, however, this is primarily because the remedies imposed in the upstream wholesale market have been less than fully effective. The strengths and weaknesses of the wholesale regime have already been discussed.
- 8.308 At the retail level, different stakeholders have contrasting views on the effectiveness of the existing SMP obligations. In the view of some of BT's competitors, BT has been able to tailor its price and service packages in order to win major business contracts, and may have engaged in anti-competitive pricing. However, no formal complaints of anti-competitive pricing have been made to Ofcom and we do not have any evidence that such behaviour has taken place.
- 8.309 On the other hand, BT has argued that the existing obligations restrict its pricing freedom unduly and prevent it from matching the offers made by its competitors. As a result, BT contends that the existing regulations lead to higher prices than would otherwise be the case, to the detriment of consumers.
- 8.310 Ofcom considered these issues in its review of replicability, the findings of which were published in April 2006. Our views have not changed since that time. We remain of the opinion that the existing non-discrimination and pricing transparency obligations should remain in place until BT has demonstrated that it has addressed the barriers to replicability identified in the April 2006 statement and until Ofcom is satisfied that the removal of regulation does not lead to adverse effects harming competition. Although we are aware that BT has made some progress on those issues, it has not yet submitted sufficient evidence to Ofcom which shows that the obstacles have been removed. When it does so and Ofcom is of the view that the removal of retail regulation is appropriate, our intention is to consult on whether replicability has been achieved and, if so, on the deregulatory measures that should follow.
- 8.311 Whilst we believe the existing SMP remedies are broadly appropriate, a number of variations and additional measures have been considered, and these are discussed below.

### Option 3: variations and additional measures

- 8.312 The variations and additional measures we consider are based on the review of the following issues:
- Service provision: is the existing service provision obligation still necessary, now that it is no longer required by the USD?
  - Voluntary undertakings: should voluntary undertakings be sought from BT, as in the 2003/04 Review, and if so, what should be designed to achieve?
- 8.313 Below we consider these issues and set out our proposed variations to the current regime.

*Service provision*

- 8.314 In the last review, the requirement on the Minimum Set of Leased Lines stemming from the USD required Ofcom to mandate an obligation to supply the minimum set of leased lines, provided on the principles of non discrimination, transparency, and, where appropriate, cost orientation and a cost accounting system.
- 8.315 Since the last market review, the EC has withdrawn this regulation, on the basis that it believed that retail markets for low bandwidth digital leased lines in EU markets have developed sufficient retail competition to guarantee the continued supply of those services in the future.
- 8.316 It is therefore necessary to consider whether an obligation to supply is still warranted. The first point to make here is that we have already proposed that BT should be subject to a network access obligation in the upstream wholesale market for low bandwidth services. It might therefore be argued that an additional obligation at the retail level may be unnecessary.
- 8.317 Our discussions with stakeholders, however, indicate that there is a significant amount of concern over the possible withdrawal of analogue and low bandwidth SDH/PDH services. These concerns are linked to BT's planned investment in an IP-based, multi-service 21<sup>st</sup> Century network. In association with this investment, BT is planning to retire the platforms which are currently used to provide analogue and low bandwidth SDH services at some point over the next 4-7 years.
- 8.318 Given these developments, there is a real possibility that, in the absence of regulatory intervention, BT would cease to provide new analogue and low bandwidth digital TI services within the timeframe of this market review, and might also seek to withdraw services from existing customers.
- 8.319 Some stakeholders have expressed a considerable amount of concern about this possibility. In particular, some utility companies have emphasised that they need low bandwidth digital TI services to support critical applications such as those used to monitor the performance of electricity sub-stations. It is anticipated that new applications may be developed which are able to be supported by AI services, but this will involve a significant amount of time and expense.
- 8.320 In Ofcom's view, a balance needs to be struck between the aim of encouraging BT's investment in new, more efficient network infrastructure and the aim of ensuring that retail customers can continue to run key applications without incurring unnecessary expenditure. In our judgement, BT should be required to supply new 2Mbit/s services for the anticipated duration of the present market. In addition, we propose to oblige BT to continue to support the installed base of analogue and digital leased lines, at speeds up to and including 2Mbit/s, over the same period.
- 8.321 In our view, however, it would be disproportionate to oblige BT to continue to supply new lines for analogue and digital circuits of speeds under 2 Mbit/s. As shown in Annex 5, the volume of analogue lines and digital low speed lines has been decreasing steadily. We expect this trend to continue as these can be regarded as legacy services that are likely to be withdrawn once the migration to NGN has been completed.
- 8.322 Instead, we have addressed this issue by seeking a voluntary undertaking from BT regarding the supply of new lines. This option is discussed further below. We also consider that it would be disproportionate to require BT to continue to supply

8Mbit/s leased line services, as we understand from BT that very few of these circuits (about 70) remain in operation.

### *Voluntary undertakings*

8.323 As noted above, at the time of the 2003/04 Review, BT gave a voluntary undertaking in relation to the pricing of analogue and 8Mbit/s digital leased lines, which has now expired.

8.324 In the present review, we have looked at the scope for using voluntary undertakings to address two related issues:

- The supply of new analogue and sub-2Mbit/s digital services; and
- The retail price of analogue circuits.

8.325 The first of these issues has been discussed above. We have indicated that, in our view, there is a balance to be struck between encouraging investment in new, more efficient networks, and protecting the interests of those who want to continue using services provided on legacy platforms.

8.326 The second issue is closely related to the first. The roll-out of BT's 21<sup>st</sup> Century Network is likely to accelerate the existing trend away from analogue and SDH services towards Ethernet based alternatives. As analogue and SDH circuits volumes decline, the unit cost of providing those circuits is likely to rise. In the case of low bandwidth digital services, up to and including 2Mbit/s, this issue will be addressed in setting the proposed charge control. In the case of analogue circuits, however, there will be no upstream charge control to afford protection against higher prices, so the concern remains.

8.327 In the 2003/04 Review, similar concerns were addressed by securing voluntary undertakings from BT, and we believe the same sort of co-regulatory approach could be effective this time around. This is consistent with Ofcom's statutory duty to reduce the burden of regulation where possible.

8.328 BT has indicated that it is prepared to give the following voluntary undertakings:

- that it will continue to supply new analogue retail circuits until 2011 or earlier if, subject to industry agreement and consent by Ofcom, the underlying platform is closed at an earlier date;
- that it will continue to supply new sub-2Mbit/s retail circuits until 2011 or earlier if, subject to industry agreement and consent by Ofcom, the underlying wholesale products are withdrawn from new supply at an earlier date;
- that it will not increase its prices for analogue services more quickly than the rate of inflation (RPI-0%) for a period two years following the publication of the LLMR statement i.e. from 2008 to 2010; and
- that it will commit to a further two-year cap, the level of which would be agreed with Ofcom prior to 2011.

8.329 Ofcom's preliminary view is that these proposals would provide an appropriate level of protection for the users of analogue and low bandwidth leased line services. If BT fails to adhere to its pricing commitment, or if BT and Ofcom should fail to reach

agreement on the two-year cap for 2012, we propose that a cost orientation condition should then come into effect.

- 8.330 The cost orientation condition would require BT charges for analogue circuits to be derived from LRIC, plus a reasonable contribution to fixed common costs.
- 8.331 We would welcome stakeholder submissions on these proposals.

#### *Conclusion on proposed variations*

- 8.332 Based on the above discussion, we propose the following amendments to the current framework:
- accept BT's voluntary undertakings on service provision and pricing for analogue and low bandwidth digital services; and
  - impose a conditional cost orientation obligation, which would only apply if BT fails to adhere to its pricing commitment, or if BT and Ofcom should fail to reach agreement on the two-year cap for 2011/12.
- 8.333 In addition, we propose that these obligations should apply for a fixed period of four years from the entering into force of the new framework proposed in this review. Unless a further market review has been completed during that time, the obligations would fall away at the end of the four year period.

#### Impact on stakeholders

- 8.334 The option of no regulation would not serve well our policy objective for this market. In particular, end users could suffer as a result of service withdrawal or price increases. This risk is particularly high for analogue services, for which no wholesale equivalent exists, and for which BT is in many cases the only supplier.
- 8.335 We consider that citizens and consumers would best be served by a regime broadly similar to the status quo, modified to take account of the voluntary undertakings described above. We believe that these measures would strike an appropriate balance between encouraging efficient investment in the development of new services and protecting the interests of users who continue to rely on legacy products.
- 8.336 We do not believe that it would be proportionate to impose additional SMP conditions on BT, such as a charge control. Our preliminary view is that the proposed voluntary undertaking, coupled with the SMP obligations proposed for the upstream wholesale market, will provide a sufficient level of assurance against excessive charging by BT, although we would welcome stakeholder views on this matter.
- 8.337 We believe therefore that the proposed variations achieve our policy objectives for this market, while minimising the regulatory burden on BT.

#### **Proposed Remedies**

- 8.338 In the light of the above, we propose to apply the following SMP obligations to BT in this market. As discussed and for the reasons set out in 8.304 above, we propose to impose these remedies for a period of 4 years only.



### Obligation to supply

8.339 As discussed above, BT should continue to support the installed base of analogue and digital leased lines, at speeds up to and including 2Mbit/s. In addition, we believe that BT should be obliged to supply new 2Mbit/s services to third parties on reasonable request. The provision of new analogue and sub-2Mbit/s services is addressed by the proposed voluntary undertaking.

### Requirement not to unduly discriminate

8.340 Under the regulation imposed through the 2003/04 Review, BT is under an obligation not to discriminate unduly in the provision of low bandwidth retail leased lines. As discussed above, BT has been found to have SMP in this market. In addition, as outlined in the April 2006 replicability statement, Ofcom does not consider it possible at present for BT's competitors to replicate effectively BT's retail low bandwidth leased line services. The remedies currently applied in the wholesale market for low bandwidth TISBOs and trunk segments have not been sufficient to ensure that BT's competitors can compete effectively in the downstream retail market.

8.341 Ofcom considers therefore that at this stage it is still appropriate to require BT not to unduly discriminate in the provision of retail low bandwidth leased lines products.

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

8.343 As discussed above, Ofcom proposes that, in applying the proposed condition, there should be a presumption that saw-tooth discounts are unduly discriminatory.

### Cost orientation

8.344 In the 2003/04 Review, Ofcom was obliged by the provisions of the USD to consider whether it was appropriate to impose cost orientation for analogue and digital leased lines of speeds up to and including 2 Mbit/s.

8.345 At that time we concluded that this obligation should be imposed on BT, but that they should only come into effect if BT breached its voluntary undertaking on the pricing of analogue circuits. As discussed above, we are inclined to adopt a similar approach in the present review.

8.346 Specifically, we propose that the cost orientation condition should require the costs of analogue circuits to be reasonably derived from the Long Run Incremental Costs of service provision, allowing an appropriate mark-up for the recovery of common costs and including an appropriate return on capital employed.

8.347 This condition would only come into effect if:

- BT breaches its voluntary undertaking for 2008-10 on the pricing of analogue circuits; or
- BT and Ofcom fail to reach agreement on a voluntary undertaking to apply in 2010-2012.

- 8.348 Ofcom does not consider it necessary to apply a cost orientation requirement to low bandwidth digital circuits at bandwidths up to and including 2Mbit/s, because we have already proposed that the wholesale inputs used in their provision should be subject to a charge control. Ofcom also believes that it would be disproportionate to apply a cost orientation requirement to 8Mbit/s circuits, as very few of these circuits remain in service.

Requirement to publish a reference offer (setting out prices, terms and conditions) and same day price notification

- 8.349 Currently BT is subject to an obligation to publish prices, terms and conditions, and to notify changes to those. This obligation was required by the USD provisions for the Minimum Set of Leased Lines, which have now been withdrawn.
- 8.350 The publication provision has had an important role in the regulation of BT's activities in this market because it has provided transparency over pricing. In conjunction with the non-discrimination obligation, the effect has been to prevent BT from bundling low bandwidth leased lines together with other, non-SMP, services and from offering bespoke prices in order to secure business contracts against competition from other CPs.
- 8.351 The issues related to bundling and bespoke pricing were considered in detail in Ofcom's April 2006 statement on Replicability. Ofcom's conclusion at that time was that, until BT's retail services are effectively replicable by its competitors, the current restrictions on bundling and bespoke pricing should remain. BT's low bandwidth leased line services were not considered replicable at that time for a variety of reasons set out in the statement.
- 8.352 Since the April 2006 statement, we understand that BT has made progress in addressing some of the barriers to replicability identified by Ofcom, but that a number of issues have still to be resolved. In these circumstances, it would be premature to consult on whether replicability has now been achieved, and whether the SMP regulations which apply in this market should therefore be relaxed.
- 8.353 Ofcom's intention is to return to this issue as and when BT has presented evidence that all of the issues identified in the replicability statement have been resolved. If our initial review of the evidence suggests that BT's services may now be replicable, we will then consult on whether replicability has been achieved, and whether the regulations should therefore be relaxed.
- 8.354 For the present, however, and in view of the continued SMP position of BT in this market, Ofcom considers that the current publication requirements should continue to apply.

Conclusions: proposed remedies for retail low bandwidth traditional interface leased lines

- 8.355 Ofcom proposes that BT should be subject to the following SMP obligations in the this market:
- Obligation to provide: BT should be required to provide retail low bandwidth leased lines to third parties on reasonable request. This obligation should not apply to 8Mbit/s leased lines, or to the supply of new analogue and sub 2Mbit/s traditional interface digital circuits. The availability of the latter should be addressed through a voluntary undertaking, as referred to below.

- No undue discrimination: For all analogue and digital services at speeds up to and including 2 Mbit/s, a requirement not to unduly discriminate; and
- Reference offer: For all analogue and digital services of speed up to and including 2 Mbit/s, a requirement to publish prices, terms and conditions, and to notify on the same day of entering into force any changes to those prices terms and conditions.

8.356 In addition, Ofcom is minded to accept the following voluntary undertakings from BT:

- that it will continue to supply new analogue retail circuits until 2011 or earlier if, subject to industry agreement and consent by Ofcom, the underlying platform is closed at an earlier date;
- that it will continue to supply new sub-2Mbit/s retail circuits until 2011 or earlier if, subject to industry agreement and consent by Ofcom, the underlying wholesale products are withdrawn from new supply at an earlier date;
- that it will not increase its prices for analogue services more quickly than the rate of inflation (RPI-0%) for a period two years following the publication of the LLMR statement i.e. from 2008 to 2010; and
- that it will commit to a further two-year cap, the level of which would be agreed with Ofcom prior to 2011.

8.357 In addition, Ofcom considers that cost orientation should apply to BT in relation to analogue leased lines but only come into effect if BT should fail to comply with the voluntary undertakings it has given, or in the event of a failure to agree on voluntary undertakings in respect of the pricing of analogue circuits after the first undertakings expires.

### Communications Act tests

8.358 Section 47(2) of the Communications Act requires regulatory obligations to be justifiable, non-discriminatory, proportionate and transparent. They are justifiable in that they relate to the need identified to ensure competition develops fairly and to the benefit of consumers. They do not discriminate against BT in that BT is the only SMP provider in this market, They are proportionate in that BT could exploit its SMP by means of extracting supra natural profits or withdraw the provision of such services. They are transparent in that the as they are set of clearly in Annex 15.

*Question 19: Do stakeholders agree with Ofcom's assessment about the appropriate regulatory option and our proposed remedies for the retail low bandwidth traditional interface market in the UK? In particular, do you think that Ofcom should accept BT's proposed voluntary undertakings that it will continue to supply new analogue and sub-2Mbit/s retail circuits until 2011 or earlier if, subject to industry agreement and consent by Ofcom, the underlying platform is closed at an earlier date; that it will not increase its prices for analogue services more quickly than the rate of inflation (RPI-0%) for a period two years following the publication of the LLMR statement i.e. from 2008 to 2010; and that it will commit to a further two-year cap, the level of which would be agreed with Ofcom prior to 2011?*

## Assessment of options and proposed remedies – KCOM

8.359 In Section 7, we found KCOM to have SMP in the following markets:

- Market for low bandwidth TISBO in the Hull area;
- Market for high bandwidth TISBO in the Hull area;
- Market for very high bandwidth TISBO in the Hull area;
- Market for low bandwidth AISBO in the Hull area; and
- Market for high bandwidth AISBO in the Hull area.

8.360 In the following paragraphs, we consider the remedies that should apply in the wholesale markets in which we have found KCOM to have SMP. In each case we evaluate three broad options:

- Option 1: no regulation
- Option 2: status quo; and
- Option 3: variations and additional measures.

8.361 Those options are evaluated in terms of:

- their likely effectiveness in promoting our policy objectives; and
- their impact on stakeholders.

8.362 The policy issues and the set of available instruments to address them for the low, high and very high TISBO markets are very similar. We have therefore for practical purposes grouped them in the discussion below. Similarly, the discussion regarding the regulatory options for the low and high bandwidth AISBO markets has been grouped.

8.363 As well as setting out our conclusions for the various markets, we outline below how we believe the proposed regulatory framework complies with the relevant Communications Act tests.

### Interconnection services relating to KCOM's provision of services in the wholesale TISBO and AISBO markets

8.364 As discussed in the case of BT, Ofcom has under the EC Framework the power to identify appropriate technical areas linked to SMP markets, such as interconnection services, where it may impose remedies without having to define a separate market for such services.

8.365 As Ofcom has identified KCOM as having SMP in the wholesale TISBO and AISBO markets listed above, we consider that interconnection services for the purpose of accessing the appropriate wholesale SMP services would be an appropriate technical area as defined by the EC Framework<sup>163</sup>.

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<sup>163</sup> Explanatory Memorandum to the Recommendation on Relevant Markets.

- 8.366 However, the issue of proportionality is very important in the case of KCOM. Firstly, the size of the market is such that large scale wholesale entry cannot be expected to materialise. Secondly, the experience so far has shown that there has been no purchases of KCOM's wholesale TISBO products, which were regulated by the 2003/04 Review. Where competition has materialised, it has done so by leveraging alternative infrastructure investments, or by relying on KCOM's retail products. This evidence suggests that OCPs feels that there is a limited case for investments in interconnection facilities and services in the Hull area.
- 8.367 The 2003/04 Review did not directly regulate interconnection services linked to wholesale markets for terminating segments in the Hull area. Any request for such services would have been covered by the general access obligation to supply wholesale products upon request imposed on KCOM. We do not propose to change our approach with respect to this issue.

### **Wholesale markets for low bandwidth, high bandwidth and very high bandwidth TISBO in the Hull area**

- 8.368 KCOM is currently subject to the following wholesale remedies in the markets for low and high bandwidth TISBO:
- General access obligation to supply wholesale products upon request;
  - requirement not to unduly discriminate;
  - cost orientation and accounting separation;
  - requirement to publish a reference offer; and
  - requirement to publish technical information.

- 8.369 We assess below the policy options which have been considered for these markets.

#### Option 1: no regulation

- 8.370 As outlined in Section 7, KCOM has very high market shares in the high bandwidth and very high bandwidth TISBO markets, standing at 80% and 98% respectively in 2006. Under these circumstances, we believe that the no regulation option would be against the interests of citizens and consumers. In the absence of regulation, KCOM may no longer be willing to provide other CPs with wholesale products, or may seek to do so on discriminatory terms. In either case, the likely result would be to restrict or distort competition in the downstream retail markets.
- 8.371 In the low bandwidth TISBO market, the case for ex ante regulation is less clear cut, as KCOM's market share has decreased markedly since the last market review, from 83% in 2003/04 to 51% in 2006. This downward trend might lead to conclude that within the next few years KCOM's market share might fall below 40%, the threshold below which a firm would not normally be expected to have SMP.
- 8.372 We are nevertheless inclined to the view that some level of ex ante regulation should be retained in the low bandwidth market. This is partly because KCOM's market share remains significantly above 40%, and partly because our understanding is that other CPs do not interconnect with each other for the purpose of providing terminating segments to customer sites in the Hull area. Whilst some

companies, notably BT and C&W, self-provide leased line tails, those without their own infrastructure continue to depend on KCOM in order to access business customers in the Hull area. In these circumstances, we consider that the removal of ex ante regulation could stifle the further development of competition in the low bandwidth market, and thereby harm consumer interests.

- 8.373 We therefore propose to reject the no regulation option in respect of all three TISBO markets in the Hull area where KCOM has SMP.

### Option 2: Status quo

- 8.374 In order to evaluate whether the current level of regulation is adequate, we need to consider the results of our SMP assessment in relation to the wholesale TISBO markets in the Hull area.
- 8.375 The SMP analysis has highlighted a varying degree of competition in wholesale TISBO markets in the Hull area since the last review. In the low bandwidth market, KCOM's share of wholesale service provision has declined, and this has been associated with a marked reduction in its share of the retail low bandwidth market. In the high and very high bandwidth markets, on the other hand, KCOM's wholesale market share has increased since the last review.
- 8.376 We have two particular areas of concern in relation to these markets. The first area of concern is linked with KCOM's dominant position arising from its control of bottleneck facilities in the Hull area. KCOM continues to control essential facilities in these markets, and there has been limited infrastructure based market entry. In addition, as discussed in the SMP assessment, we believe that significant barriers to entry continue to exist, and therefore that the prospect of future competitive market entry is low.
- 8.377 The second is KCOM's high (and increasing) market share in the high and very high bandwidth markets. This suggests that other CPs have been reluctant to build out their own networks to serve business sites in the Hull area, even to provide high-value very high bandwidth circuits. This stands in contrast to the position in the rest of the UK, where the wholesale market for very high bandwidth circuits, in particular, is now very competitive.
- 8.378 We have given some consideration to why such a discrepancy in competitive conditions of wholesale high and very high TISBO between the Hull area and the rest of the UK is observed. The most credible explanation for such a discrepancy rests on the different nature of the demand for high and very high bandwidth circuits in the Hull area. There appear to be a concentration of demand for such services in the hands of few users, and particularly local public institutions. Such demand is traditionally been met by KCOM, who is partially owned by the local Hull council, and the contracts appear to be renewed with relative less frequency than is the case for private businesses.
- 8.379 This does not however mean that competition in these markets is unlikely to materialise at all. Given the concentration of the demand, when contracts are put out to tender, even a few customers switching might cause the overall market shares to change significantly. While therefore the prospects for future competition in these markets may be limited, this sort of change may still be possible.
- 8.380 In the face of the continued dominance of KCOM in these markets, we believe it is appropriate to keep the current framework in place.

- 8.381 It has to be noted, however, that the current set of remedies, which includes a cost orientation requirement and accounting separation, while providing a guarantee for KCOM's competitors, has not been fully utilised. For example, our discussions with industry suggest that little use is made of the regulatory accounting information KCOM is currently required to publish in support of its obligation.
- 8.382 On the other side, KCOM has long argued that the requirement to maintain cost accounting and accounting separation systems imposes a significant cost burden on them and is disproportionate, given the relatively small size of the Hull market. We consider the merit of KCOM's position in the next paragraphs.

### Option 3: Variations and additional measures

- 8.383 Given the continued SMP of KCOM in these markets, it is appropriate to consider whether, in addition to the current regulatory framework, we should introduce additional measures. In particular, whether a charge control would be warranted. In addition, we believe it is also worth considering to what extent the same policy objectives could be achieved through means other than formal regulatory obligations.
- 8.384 When considering whether or not to impose a charge control on KCOM's wholesale TISBO services, we have to look at what evidence we have that would support such a tightening of regulation. Since the last market review, Ofcom has not received any formal complaints about the charges of KCOM's wholesale TISBO services. We have also noted in this review how we believe that in the next few years, the TISBO markets in the UK are going to decline, as investments move towards Ethernet services and NGNs. We have no reason to believe differently for the Hull area, and therefore expect a decline in the overall volumes in this market. It is reasonable to conclude that we cannot expect more market entry in the Hull area in the forthcoming years for the purpose of providing wholesale TISBO services. Finally, a charge control would impose a substantial increase in the regulatory burden on KCOM.
- 8.385 Under such circumstances, we believe that the potential benefits of a charge control would be lower than its potential costs. We therefore do not propose to impose a charge control on KCOM's wholesale TISBO services.
- 8.386 There is however a risk that with declining wholesale TISBO volumes, KCOM would have the incentive to increase the price of those services without any type of control on prices, and that such price increases would be passed on to end users in the relevant retail markets. Ofcom therefore considers that some type of access price regulation is required.
- 8.387 Ofcom considers that its regulatory objectives could be met in a less burdensome manner by securing from KCOM a voluntary undertaking on the future direction of the price of its wholesale TISBO services.
- 8.388 KCOM has indicated that it would be prepared to give Ofcom a voluntary undertaking not to increase the prices of its low bandwidth, high bandwidth and very high bandwidth TISBO services more quickly than the general rate of price inflation (RPI+0%) for a period of four years following publication of the statement which sets out the conclusions of this market review.

- 8.389 Such an undertaking would provide a safeguard against price increases, while not imposing an unnecessary burden on KCOM. Ofcom is therefore minded to accept KCOM's proposed voluntary undertaking.
- 8.390 We would, however, welcome stakeholder comments on KCOM's proposed undertaking, before deciding whether to accept it. If the undertaking is accepted, we propose that the cost orientation, cost accounting and accounting separation obligations discussed below should only come into effect if the undertaking is not adhered to.

### Impact on stakeholders

- 8.391 We consider that the no regulation option would lead to a reduction in competition which would be against the interests of citizens and consumers. We believe that an approach based broadly on the existing regime is likely to be appropriate. We do however, believe that consumer interest would best be served by securing an undertaking on pricing from KCOM, rather than by relying on cost orientation and cost accounting conditions, which are costly to administer and which appear to have had relatively little relevance to the competitive process in the Hull area.

## **Proposed Remedies**

### General access obligation to supply wholesale products upon request

- 8.392 As noted above, OCPs currently rely on KCOM to supply in the Hull area retail local ends of circuits that terminate or originate in other parts of the UK. Unlike BT, KCOM does not have any specific obligation with respect to the type of wholesale leased lines access product it should provide. In practice it has offered a wholesale product with a retail wrap which can be used by other CPs to connect customer sites in the Hull area to their networks.
- 8.393 We consider that the existing access obligation has benefited competitors and downstream competition by forcing KCOM to meet demand for wholesale leased lines access. If such an obligation were to be removed, KCOM would have little incentive to continue to provide such a product to downstream competitors, and downstream competition would suffer.
- 8.394 We therefore believe it appropriate to keep the existing obligation to supply in its current form to ensure that competition continues to grow in Kingston.
- 8.395 This obligation should be interpreted to include access to interconnection services ancillary to the provision of wholesale TISBO in the Hull area on fair and reasonable terms.
- 8.396 KCOM has told us that, over the next four years, it may wish to migrate some of its existing TISBO customers onto new services and platforms, associated with its investment in next generation networks. As a result, it may wish to cease provision of some of its existing services, at least for new customers. Ofcom will give due consideration to these matters as and when they will arise in the context of the proposed SMP obligations.

### Requirement not to unduly discriminate

- 8.397 An obligation not to unduly discriminate is appropriate in cases where a vertically integrated incumbent competes in downstream markets with its upstream



customers. This is the case with KCOM. In the presence of an obligation to supply, an obligation not to discriminate unduly ensures that the wholesale access input enables competition in downstream markets by creating a level playing field between the downstream retail arm of the vertically integrated incumbent and its downstream competitors.

- 8.398 We therefore propose to keep this obligation in place in its current form in order to promote competition in downstream leased lines markets in Hull.

#### Option 4: cost orientation

- 8.399 As discussed above, we are inclined to retain the existing cost orientation and accounting separation conditions but to stipulate that they should only come into effect if KCOM fails to adhere to its voluntary undertaking on prices for TISBO services.
- 8.400 If that happens, this conditional obligation would then become effective. In that case, KCOM would have to produce within six months of breaching its own voluntary undertakings a complete set of accounts that demonstrates compliance with the cost orientation and non discrimination obligations.

#### Requirement to publish a reference offer

- 8.401 KCOM is currently required to publish a reference offer, setting out its prices, terms and conditions for low and high bandwidth TISBO products. This obligation provides a degree of transparency which helps to ensure that these products are offered on terms that are not unduly discriminatory. It therefore supports the no undue discrimination obligation.
- 8.402 We believe that this condition should be applied in all three of the wholesale TISBO markets in which KCOM has SMP. As well as supporting the no undue discrimination condition, this obligation will enable Ofcom and KCOM's competitors to monitor KCOM's compliance with its pricing undertaking, if that is accepted.

#### Requirement to publish technical information

- 8.403 Currently KCOM is obliged to provide information about technical conditions relating to the provision of its wholesale access services. In addition, it must give notice 90 days in advance of any changes to existing conditions or introduction of new condition.
- 8.404 This requirement allows KCOM's wholesale customers to plan in advance for any change they might have to introduce as a result to their services. In the absence of such an obligation, there could be adverse effects to competition and end users in downstream markets.
- 8.405 We think therefore that KCOM should continue to be obliged to publish technical information relating to the provision of its wholesale access services.

#### Conclusions: proposed regulatory obligations

- 8.406 On the basis of our market definition, SMP assessment, and the discussion above, we propose to impose the following regulatory obligations on KCOM with respect to the markets for low, high and very high bandwidth TISBO:

- a general access obligation to supply wholesale products upon request;
- a requirement not to unduly discriminate;
- a requirement to publish a reference offer; and
- a requirement to publish technical information.

8.407 In addition, we are inclined to accept KCOM's proposed voluntary undertaking not to increase prices for its low bandwidth TISBO products by more than RPI+0% for four years from the entering into force of the new regulatory framework for leased lines. If KCOM were to fail to adhere to its voluntary undertaking, we propose that cost orientation and accounting separation conditions should come into effect.

### Communications Act tests

8.408 Section 47(2) of the Communications Act requires regulatory obligations to be justifiable, non-discriminatory, proportionate and transparent. They are justifiable in that they relate to the need identified to ensure competition develops fairly and to the benefit of consumers. They do not discriminate against BT in that BT is the only SMP provider in this market, They are proportionate in that BT could exploit its SMP by means of extracting supra natural profits or withdraw the provision of such services. They are transparent in that the as they are set of clearly in Annex 15.

*Question 20: Do stakeholders agree with our assessment of the appropriate regulatory option and our proposed remedies for the wholesale TISBO markets in the Hull area? In particular, do you think Ofcom should accept KCOM's proposed voluntary undertaking not to increase the prices of its wholesale TISBO services by more than RPI+0% over the next four years?*

### **Wholesale market for low and high bandwidth AISBO in the Hull area**

8.409 KCOM is currently subject to the following obligations in the wholesale markets for AISBO services at all bandwidths:

- a general access obligation to supply wholesale products upon request;
- a requirement not to unduly discriminate;
- cost orientation and accounting separation obligations;
- a requirement to publish a reference offer; and
- a requirement to publish technical information.

8.410 We assess below the policy options which have been considered for these markets.

#### Option 1: no regulation

8.411 As discussed in Section 7, KCOM holds a position of SMP in these markets, with a market share of 67% in the wholesale low bandwidth AISBO market, and a 100% market share in the wholesale high bandwidth AISBO market, where it is the only provider of services in the Hull area.

- 8.412 However Ofcom believes that the data supplied by KCOM may not be completely reliable, and this estimate of KCOM's share of this market could best be interpreted as a lower bound. The real market share of KCOM in this market is therefore likely to be in excess of 67%.
- 8.413 Given also the existence of significant entry barriers in this market, Ofcom believes that KCOM's SMP is unlikely to be eroded by competition and is such as to require ex ante regulation. In the absence of such regulation, KCOM would be able to behave anti-competitively in the upstream market to limit competition in the downstream markets. We therefore reject the no regulation option.
- 8.414 This is consistent with the ERG Revised Common Position on Remedies, which states:

*“Without regulation (i.e., no access obligation and no regulated access price, etc.), a vertically integrated undertaking with SMP on the wholesale market is unlikely to discriminate against retail competitors on non-price parameters like quality, information, or product characteristics. It is likely, instead, to either extract downstream rents by setting an excessive price at the wholesale level, or, if this is – for some (non regulatory) reason – not possible, to foreclose the retail market by denial of access. Subject to an access obligation according to Art 12 AD in combination with an obligation to set a cost-oriented price according to Art 13 AD, the vertically integrated undertaking has – deprived of the wholesale price as strategic variable – incentives to discriminate between its own retail affiliate and its retail competitors on other strategic variables.”<sup>164</sup>*

### Option 2: Status quo

- 8.415 KCOM is currently subject to the SMP obligations outlined above in the market for AISBO services at all bandwidths in the Hull area.
- 8.416 As discussed above, KCOM has very high market shares in both the wholesale low bandwidth and high bandwidth AISBO markets. These are reflected in similarly high market shares in the retail markets for AI leased lines in the Hull area.
- 8.417 In the light of the limited development of competition in the retail markets for AI leased lines in the Hull area, Ofcom has considered whether it is necessary to increase the level of regulation applying to KCOM in the wholesale markets for low and high bandwidth AISBO, in order to allow competition to develop at the retail level.

### Option 3: Variations and additional measures

- 8.418 An undue discrimination obligation can allow retail competition to emerge as it ensures that the margin between the SMP operator's wholesale and retail charges is sufficient to allow retail competitors an adequate rate of return. This is sometimes referred to as “retail minus” charging for wholesale services. However, because the wholesale charge is linked to the retail price, by itself it places only limited downward pressure on the latter and so is unlikely to be appropriate, by itself, where there is entrenched dominance at the wholesale level, as in the markets for AISBO in the Hull area. If more competition and market entry at the retail level is to materialise in the future and put downward pressure on retail prices, it may be

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<sup>164</sup> See page 89.

necessary for access charges to be set at a level more compatible with that expected in a competitive market.

- 8.419 One possible solution would be to impose a charge control. However, we believe the imposition of a charge control would not be proportionate in this case, because of the small size of the market. The imposition and administration of a price control would be a substantial exercise for Ofcom and would impose significant costs on KCOM. In addition, we have not received so far any complaints relating to access charges for wholesale AISBO services in the Hull area. In our view, therefore a charge control on KCOM would be disproportionate, and we believe it would be better to try and achieve our policy objective in a less burdensome way.
- 8.420 Another option would be to rely on the cost orientation obligation, as at present. The difficulty with this is that the term “cost orientation” is usually interpreted as consistent with a wide range of charges, for example between incremental cost and stand-alone cost. As such it is perhaps most useful in conjunction with a charge control, in order to prevent anti-competitive or excessive pricing of individual services, whilst the average level of charges for a basket of services is controlled by a charge cap. Whilst it might be possible (at least legally) to interpret cost orientation as requiring charges to be at or close to average costs, this would have poor incentive properties (it would be rather similar to rate of return control which has generally been supplanted by charge controls of the RPI-X type for this reason).
- 8.421 One alternative solution, which could have good incentive properties whilst imposing a low regulatory burden, would be to introduce a mechanism that would link the price of wholesale AISBO services in the Hull area to a suitable benchmark for competitive prices. A candidate for such a benchmark would be BT’s wholesale AISBO prices. Differences between KCOM’s charges and BT’s would require an objective justification, related for example to the costs of supply.
- 8.422 In the low bandwidth AISBO market in the UK outside the Hull area, Ofcom is proposing that BT’s charges will be subject to a charge control, such that they will be brought to a level approximating to those expected in a competitive market. Ofcom has found that the high bandwidth AISBO market in the UK outside the Hull area is competitive and therefore considers that charges applying in this market should be broadly at the competitive level. Unlike regulation based on KCOM’s own costs, such a mechanism would have the advantage that the benchmark would be exogenous to KCOM and so would not damage incentives on KCOM to make efficiency gains.
- 8.423 We therefore consider that this could provide a mechanism for aligning the future prices of wholesale AISBO services in the Hull area with those found in a competitive market.
- 8.424 We have also considered what the most appropriate approach to creating such a linkage would be, and believe that an additional ex ante obligation could potentially be unnecessary and disproportionate.
- 8.425 We think a better solution is to take such benchmarks into account in the event of a dispute relating to KCOM’s charges for AISBO services. That is, if it were alleged that KCOM’s charges breached the obligations set out above, in particular the requirement for charges to be cost oriented and the requirement not to unduly discriminate, Ofcom would consider this in the light of charges for similar services in the UK outside the Hull area. This should provide the adequate incentives to KCOM

to ensure that its charges are reasonable, without having to impose additional formal ex ante obligation.

8.426 We would welcome stakeholder views on this proposal.

### Impact on stakeholders

8.427 We consider that the no regulation option would lead to a reduction in competition which would be against the interests of citizens and consumers. This is particularly important as the market for Ethernet services is bound to increase in the future years and overtake the traditional interface market, and therefore ensuring that a competitive environment develops is very important for end users in the Hull area.

8.428 Keeping the status quo regulation could also potentially fall short of providing the adequate level of promotion of competition for KCOM's competitors and downstream end users in the Hull area.

8.429 We do believe that those interests are best served by not amending the current regulation to include an explicit linkage between KCOM's charges and BT's charges for comparable services, in the manner described above. This approach would also help to reduce the burden of regulation on KCOM.

8.430 In addition, we think that the interests of KCOM's competitors and consumers would not be served well without the requirement for KCOM to publish a reference offer, and to publish technical information concerning its wholesale AISBO services. The first obligation will provide transparency to prospective customers regarding the terms on which access to bottleneck facilities is being made available, and will help to ensure compliance with the requirement for no undue discrimination. The second requirement allows KCOM's wholesale customers to plan in advance for any change they might have to introduce as a result to their services, which requires time.

### **Proposed Remedies**

In the following paragraphs, in the light of the above impact assessment, we consider the following SMP obligations:

- a general access obligation to supply wholesale products upon request;
- a requirement not to unduly discriminate;
- cost orientation;
- a requirement to publish a reference offer; and
- a requirement to publish technical information.

### General access obligation to supply wholesale products upon request

8.431 Currently KCOM is obliged to supply network access in the low bandwidth AISBO market in the Hull area. Some alternative infrastructure has been deployed, and KCOM is exposed to competitors such as BT and C&W. However, in the absence of an obligation to provide network access in this market, there is a risk in the future that competition in the downstream market could be reduced if KCOM's competitors did not have access to its access network.

8.432 We therefore consider that an obligation to supply network access upon request on fair and reasonable terms is appropriate for this market. In the case of a dispute, we would interpret the fairness and reasonableness of KCOM's charges having consideration for BT's charges for comparable services.

#### Requirement not to unduly discriminate

8.433 The EC Framework requires in the presence of dominance that we have consideration or the imposition of a non discrimination obligation. In the presence of a vertically integrated incumbent such as KCOM, such an obligation ensures a level playing field in downstream markets.

8.434 In view of KCOM's SMP position, we think therefore that it is appropriate to impose an obligation not to unduly discriminate on KCOM with respect to wholesale low and high bandwidth AISBO services in the Hull area.

#### Cost orientation

8.435 As discussed above, we believe that some measures are required to ensure that KCOM does not engage in excessive pricing in this market. In particular, we believe that the best approach would be through the imposition of a cost orientation obligation. We therefore propose to apply a cost orientation condition on KCOM.

#### Requirement to publish a reference offer

8.436 We consider that KCOM should be required to publish a reference offer setting out the prices, terms and conditions on which it will supply low and high bandwidth AISBO services.

#### Requirement to publish technical information

8.437 We consider that KCOM should be obliged to publish technical information relating to the provision of its low and high bandwidth AISBO.

#### Conclusions: proposed regulatory obligations

8.438 On the basis of our SMP assessment and the discussion above, we propose to impose the following regulatory obligations on KCOM in Hull with respect to the market for low and high bandwidth AISBO:

- a general access obligation to supply wholesale products upon request;
- a requirement not to unduly discriminate;
- cost orientation;
- a requirement to publish a reference offer; and
- a requirement to publish technical information.

#### Communications Act tests

8.439 Section 47(2) of the Communications Act requires regulatory obligations to be justifiable, non-discriminatory, proportionate and transparent. They are justifiable in that they relate to the need identified to ensure competition develops fairly and to

the benefit of consumers. They do not discriminate against BT in that BT is the only SMP provider in this market, They are proportionate in that BT could exploit its SMP by means of extracting supra natural profits or withdraw the provision of such services. They are transparent in that they are set of clearly in Annex 15.

*Question 21: Do stakeholders agree with our assessment of the appropriate regulatory option and our proposed remedies for the wholesale AISBO markets in the Hull area?*

## Proposals for cost accounting and accounting separation obligations to apply to BT and KCOM

- 8.440 BT and KCOM are currently subject to cost accounting and accounting separation requirements in a range of markets in which they have been found to have SMP, including the leased lines markets covered by the 2003/04 Review. Those requirements were set out in a Statement issued in July 2004 (the 2004 Statement on Regulatory Reporting)<sup>165</sup>.
- 8.441 Under the existing framework, BT and KCOM are required to produce a range of outputs, the purpose of which is to support compliance with no undue discrimination and cost orientation obligations in SMP markets. Those outputs include the following:
- Generic cost orientation & non-discrimination requirements:
    - Preparation of a variety of financial statements;
    - Preparation of extensive supporting documentation explaining how the financial statements have been put together;
    - Provision of an independent assurance statement;
    - Publication of most of the information; and
    - Preparation of reconciliation statements;
  - Cost orientation specific requirements:
    - Preparation of service level cost data (LRIC and FAC) compared to average charges
    - Preparation of costs of network components used to deliver services
    - Analysis of service cost stack by component
  - Non-discrimination specific requirements:
    - Analysis of internal and external sales including volume data.
- 8.442 The current regulatory accounting framework will provide a robust and consistent basis for BT to report compliance with cost orientation and non-discrimination obligations in the SMP markets identified in this review. The market definitions will determine which services are captured under these reporting obligations.
- 8.443 BT's 2006/07 regulatory Financial Statements are published on its website together with the detailed supporting documentation that explains the principles applied and basis of preparation<sup>166</sup>.

<sup>165</sup> [http://www.ofcom.org.uk/consult/condocs/fin\\_reporting/fin\\_report\\_statement/](http://www.ofcom.org.uk/consult/condocs/fin_reporting/fin_report_statement/)

<sup>166</sup> <http://www.btplc.com/Thegroup/Regulatoryinformation/Financialstatements/index.htm>



### Improving compliance – reporting of non-discrimination in downstream markets

- 8.444 The main purpose of accounting separation obligations is to separate out the upstream activities (wholesale markets) and downstream activities (retail markets) of vertically integrated operators with SMP in one or more of those markets to demonstrate that it is not acting anti-competitively by leveraging power from SMP markets into other retail markets. The regulatory financial statements include an agreed basis on which transfer charges between markets are calculated. The default position is that these transfer charges are calculated on the basis of prices charges to other operators.
- 8.445 The accounting separation obligations are intended to answer three key questions in respect of compliance with non-discrimination obligations:
- i) Can the operator correctly identify and account for the upstream market/service? This is demonstrated by the preparation of primary financial statements (P&L and mean capital employed);
  - ii) Can the operator correctly calculate internal transfers and account for them transparently within the upstream and downstream activities? The operator is expected to have systems and processes in place that can accurately record the volumes of internal transactions by type of service matched to the published price list and account for the sales and costs in the relevant upstream/downstream activities;
  - iii) Can the operator correctly identify and account for the downstream activity receiving the charge with sufficient financial data to demonstrate that there is no anti-competitive effect?
- 8.446 The current regulatory accounting framework does not require explicit reporting of the downstream impact of non-discrimination obligations. However, this review and other regulatory work has shown that the variety and choice of services in these markets combined with some specific transfer charging issues means that more transparency of how wholesale SMP products are consumed in downstream activities is required.
- 8.447 We propose to consult separately on measures designed to address this issue.

### Replicability – improvement to regulatory reporting

- 8.448 Following the publication of the April 2006 statement on replicability, Ofcom reviewed the transfer pricing arrangements for PPCs and the way they are implemented by BT. That review, the findings of which are set out in Annex 13, identified a number of weaknesses in the present arrangements, which Ofcom is concerned may have operated to the detriment of BT's competitors in downstream markets for leased lines.
- 8.449 Ofcom is currently engaged in a dialogue with BT over the steps required to address the deficiencies which have been identified. The outcome of those discussions, which we anticipate will lead to a number of changes in BT's regulatory accounting practices, will be explained and consulted on in a separate consultation on regulatory accounting topics, which we expect to be published in the spring of 2008.

## Conditional requirements

- 8.450 In relation to the wholesale markets for TISBOs in the Hull area, KCOM has indicated that it is prepared to give an undertaking that the price of these services will not increase more quickly than the RPI over the next four years. We propose that the cost accounting requirements should only apply in these markets in the event of a breach of this undertaking. In particular, KCOM would have to produce within six months of breaching its own voluntary undertakings a set of accounts that demonstrates compliance with the cost orientation and non discrimination obligations.
- 8.451 The draft notifications set out in Annex 15 reflect these proposals.

## Conclusions

8.452 Our proposals in this area are as follows:

- The current regulatory accounting framework should continue to be used for compliance reporting on the designated markets;
- We believe further reporting (to Ofcom only) on downstream activities which receive leased line charges as cost inputs is necessary, and intend to examine this issue further in a separate consultation;
- The weaknesses we have identified in the PPC transfer charging regime should be addressed by BT through improvements in the regulatory accounting system, which will be explained and consulted on in a separate consultation; and
- Cost accounting obligations in the retail market for low bandwidth TI circuits outside Hull and the wholesale markets for TISBOs in the Hull area should only apply in the event of a breach of the voluntary undertakings on pricing proposed in those markets by BT and KCOM respectively, as described above.

## **Communications Act tests**

8.453 Section 47(2) of the Communications Act requires regulatory obligations to be justifiable, non-discriminatory, proportionate and transparent. They are justifiable in that they relate to the need identified to ensure competition develops fairly and to the benefit of consumers. They do not discriminate against either BT or KCOM in that BT and KCOM are the only SMP providers in the respective markets. They are proportionate in that they impose on BT and KCOM a requirement which is closely correlated with the need to have a set of regulatory accounts which allows third parties to monitor BT and KCOM's compliance with the cost orientation and non-discrimination requirements. Finally, they are transparent in that they are set out clearly in the relevant Ofcom document, which is referenced above, and in the draft notifications in Annex 15.

## Opportunities to foster deeper level of competition in wholesale business markets

- 8.454 One of the issues that has arisen in the course of this market review is whether BT should be required to provide dark fibre in the access network, as a mean of promoting more effective competition in downstream leased lines markets.
- 8.455 We present in Annex 10 our full discussion on this issue. In the following paragraphs, we present the legal point of view, and briefly outline what some of the relevant issues for discussion we have identified are.
- 8.456 This issue merits some consideration, for three main reasons. The first is the sense that in several of the leased lines markets under review, the amount of progress made towards a competitive outcome has been very limited in the past four years, and that more radical options may therefore be worth considering. The second is that a dark fibre access remedy would represent an intervention at the deepest layer in the infrastructure at which competition is likely to be feasible, and would therefore be in line with the principles set out in the Telecoms Strategic Review. The third is that several CPs have argued strongly that such a remedy would enable them to compete more effectively against BT, on quality of service as well as on price, and would enable them to offer service innovations which at present are not possible.
- 8.457 Ofcom has given some consideration to two preliminary questions which are legal and procedural in nature:
- Does Ofcom have the power to impose a dark fibre remedy?
  - If this option is to be explored further, would it be necessary to carry out a full market review of the relevant market?
- 8.458 With respect to the first issue, our initial view is that dark fibre would constitute an Electronic Communications Network (ECN), and would therefore be subject to Ofcom's powers under the Communications Act.
- 8.459 In relation to point (ii), we do not believe that an obligation to provide dark fibre in the access network could be imposed as an SMP remedy in one of the wholesale markets for leased lines. Our preliminary assessment is that such an obligation could only be introduced pursuant to:
- a market review of the market for dark fibre access; and
  - a finding of SMP in that market.
- 8.460 It should be emphasised at this point that Ofcom has not yet carried out such a market review, and it should not be assumed that BT (or any other CP) has SMP in that market.
- 8.461 A market review would be a major exercise involving a substantial amount of time and resources, both for Ofcom and for industry stakeholders. It is not a project that would be undertaken lightly.
- 8.462 Ofcom is also aware that the examination of this option would raise a number of complex issues, including the following:

- **benefits for consumers:** to what extent would the introduction of an obligation to provide dark fibre access lead to more effective competition and benefit business consumers? For example, some stakeholders have argued that it would enable them to introduce better, more innovative services by removing the dependence on the wholesale products currently provided by BT in the markets in which it has SMP. But how significant are these benefits likely to be, and are they likely to exceed the costs of implementing such a remedy?
- **nature of the access obligation:** if an obligation to supply dark fibre access were to be imposed, what form should it take? For example, should the SMP provider (if there is one) be required to supply dark fibre only to business premises where fibre capacity has already been installed, or to any business premises?
- **consistency with regulatory principles:** as noted above, BT could only be obliged to provide dark fibre access if it were found to have SMP in the relevant market, and it is by no means self-evident that this is the case. If BT were found to have SMP, would it be proportionate to require BT to provide access to such infrastructure?
- **compatibility with other regulations:** as discussed above, we are already proposing to require BT to provide a range of wholesale services in those leased lines markets in which it has been found to have SMP. Would the introduction of a dark fibre access undermine the existing remedies and create opportunities for regulatory arbitrage that would be disruptive for the industry and for consumers?
- **impact on investment incentives:** BT has argued that an obligation to provide dark fibre access would undermine its incentive to invest in the installation of fibre in the access network because it would reduce the value it is able to extract from such investments. It has also argued that it would weaken the case for investment in upgrading its backhaul network. In addition, mandating the availability of dark fibre could have a chilling effect on investment by other CPs in fibre to serve the markets' high bandwidth leased lines, which are already effectively competitive;
- **pricing issues:** if an obligation to supply dark fibre access were introduced, how should it be priced? Should it be accompanied by a cost orientation obligation and/or a charge control, and if so, what costing principles should be applied? What steps should be taken to ensure that an appropriate relationship exists between the price of dark fibre and the price of existing wholesale remedies such as WES Local Access, which we have proposed should itself be subject to a charge control?

8.463 Ofcom would welcome the views of stakeholders on these and the related issues, which are discussed more fully in Annex 10. Ofcom will take account of the responses received when deciding whether to initiate a market review for dark fibre in the access network.

*Question 22: Should Ofcom investigate further the case for introducing a dark fibre remedy by undertaking a market review of the relevant market? If such a review were to be undertaken, is it likely that BT or any other CP would be found to have SMP in that market? And if SMP were to be found, what would be the pros and cons of requiring the dominant provider to make dark fibre in the access network available to third parties?*

## Annex 1

# Responding to this consultation

## How to respond

- A1.1 Ofcom invites written views and comments on the issues raised in this document, to be made **by 5pm on 27 March 2008**.
- A1.2 Ofcom strongly prefers to receive responses as e-mail attachments, in Microsoft Word format, as this helps us to process the responses quickly and efficiently, as this helps us to process the responses quickly and efficiently. We would also be grateful if you could assist us by completing a response cover sheet (see Annex 3), to indicate whether or not there are confidentiality issues. This response coversheet is incorporated into the online web form questionnaire.
- A1.3 Please email [business.connectivity.review@ofcom.org.uk](mailto:business.connectivity.review@ofcom.org.uk) attaching your response in Microsoft Word format, together with a consultation response coversheet.
- A1.4 Responses may alternatively be posted or faxed to the address below, marked with the title of the consultation.
- Serafino Abate  
4<sup>th</sup> Floor  
Competition Division  
Riverside House  
2A Southwark Bridge Road  
London SE1 9HA
- Fax: 020 7981 3333
- A1.5 Note that we do not need a hard copy in addition to an electronic version. Ofcom will acknowledge receipt of responses if they are submitted using the online web form but not otherwise.
- A1.6 It would be helpful if your response could include direct answers to the questions asked in this document, which are listed together at Annex 4. It would also help if you can explain why you hold your views and how Ofcom's proposals would impact on you.

## Further information

- A1.7 If you want to discuss the issues and questions raised in this consultation, or need advice on the appropriate form of response, please contact Serafino Abate on 020 7783 4559.

## Confidentiality

- A1.8 We believe it is important for everyone interested in an issue to see the views expressed by consultation respondents. We will therefore usually publish all responses on our website, [www.ofcom.org.uk](http://www.ofcom.org.uk), ideally on receipt. If you think your response should be kept confidential, can you please specify what part or whether all of your response should be kept confidential, and specify why. Please also place such parts in a separate annex.

- A1.9 If someone asks us to keep part or all of a response confidential, we will treat this request seriously and will try to respect this. But sometimes we will need to publish all responses, including those that are marked as confidential, in order to meet legal obligations.
- A1.10 Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to Ofcom to use. Ofcom's approach on intellectual property rights is explained further on its website at <http://www.ofcom.org.uk/about/accoun/disclaimer/>

### Next steps

- A1.11 Following the end of the consultation period, Ofcom intends to publish a statement later in 2008.
- A1.12 Please note that you can register to receive free mail Updates alerting you to the publications of relevant Ofcom documents. For more details please see: [http://www.ofcom.org.uk/static/subscribe/select\\_list.htm](http://www.ofcom.org.uk/static/subscribe/select_list.htm)

### Ofcom's consultation processes

- A1.13 Ofcom seeks to ensure that responding to a consultation is easy as possible. For more information please see our consultation principles in Annex 2.
- A1.14 If you have any comments or suggestions on how Ofcom conducts its consultations, please call our consultation helpdesk on 020 7981 3003 or e-mail us at [consult@ofcom.org.uk](mailto:consult@ofcom.org.uk) . We would particularly welcome thoughts on how Ofcom could more effectively seek the views of those groups or individuals, such as small businesses or particular types of residential consumers, who are less likely to give their opinions through a formal consultation.
- A1.15 If you would like to discuss these issues or Ofcom's consultation processes more generally you can alternatively contact Vicki Nash, Director Scotland, who is Ofcom's consultation champion:

Vicki Nash  
Ofcom  
Sutherland House  
149 St. Vincent Street  
Glasgow G2 5NW

Tel: 0141 229 7401  
Fax: 0141 229 7433

Email [vicki.nash@ofcom.org.uk](mailto:vicki.nash@ofcom.org.uk)

## Annex 2

# Ofcom's consultation principles

A2.1 Ofcom has published the following seven principles that it will follow for each public written consultation.

### Before the consultation

A2.2 Where possible, we will hold informal talks with people and organisations before announcing a big consultation to find out whether we are thinking in the right direction. If we do not have enough time to do this, we will hold an open meeting to explain our proposals shortly after announcing the consultation.

### During the consultation

A2.3 We will be clear about who we are consulting, why, on what questions and for how long.

A2.4 We will make the consultation document as short and simple as possible with a summary of no more than two pages. We will try to make it as easy as possible to give us a written response. If the consultation is complicated, we may provide a shortened Plain English Guide for smaller organisations or individuals who would otherwise not be able to spare the time to share their views.

A2.5 We will consult for up to 10 weeks depending on the potential impact of our proposals.

A2.6 A person within Ofcom will be in charge of making sure we follow our own guidelines and reach out to the largest number of people and organisations interested in the outcome of our decisions. Ofcom's 'Consultation Champion' will also be the main person to contact with views on the way we run our consultations.

A2.7 If we are not able to follow one of these principles, we will explain why.

### After the consultation

A2.8 We think it is important for everyone interested in an issue to see the views of others during a consultation. We would usually publish all the responses we have received on our website. In our statement, we will give reasons for our decisions and will give an account of how the views of those concerned helped shape those decisions.

## Annex 3

# Consultation response cover sheet

- A3.1 In the interests of transparency and good regulatory practice, we will publish all consultation responses in full on our website, [www.ofcom.org.uk](http://www.ofcom.org.uk).
- A3.2 We have produced a coversheet for responses (see below) and would be very grateful if you could send one with your response (this is incorporated into the online web form if you respond in this way). This will speed up our processing of responses, and help to maintain confidentiality where appropriate.
- A3.3 The quality of consultation can be enhanced by publishing responses before the consultation period closes. In particular, this can help those individuals and organisations with limited resources or familiarity with the issues to respond in a more informed way. Therefore Ofcom would encourage respondents to complete their coversheet in a way that allows Ofcom to publish their responses upon receipt, rather than waiting until the consultation period has ended.
- A3.4 We strongly prefer to receive responses via the online web form which incorporates the coversheet. If you are responding via email, post or fax you can download an electronic copy of this coversheet in Word or RTF format from the 'Consultations' section of our website at [www.ofcom.org.uk/consult/](http://www.ofcom.org.uk/consult/).
- A3.5 Please put any parts of your response you consider should be kept confidential in a separate annex to your response and include your reasons why this part of your response should not be published. This can include information such as your personal background and experience. If you want your name, address, other contact details, or job title to remain confidential, please provide them in your cover sheet only, so that we don't have to edit your response.



## Cover sheet for response to an Ofcom consultation

### BASIC DETAILS

Consultation title:

To (Ofcom contact):

Name of respondent:

Representing (self or organisation/s):

Address (if not received by email):

### CONFIDENTIALITY

Please tick below what part of your response you consider is confidential, giving your reasons why

Nothing	<input type="checkbox"/>	Name/contact details/job title	<input type="checkbox"/>
Whole response	<input type="checkbox"/>	Organisation	<input type="checkbox"/>
Part of the response	<input type="checkbox"/>	If there is no separate annex, which parts?	

If you want part of your response, your name or your organisation not to be published, can Ofcom still publish a reference to the contents of your response (including, for any confidential parts, a general summary that does not disclose the specific information or enable you to be identified)?

### DECLARATION

I confirm that the correspondence supplied with this cover sheet is a formal consultation response that Ofcom can publish. However, in supplying this response, I understand that Ofcom may need to publish all responses, including those which are marked as confidential, in order to meet legal obligations. If I have sent my response by email, Ofcom can disregard any standard e-mail text about not disclosing email contents and attachments.

Ofcom seeks to publish responses on receipt. If your response is non-confidential (in whole or in part), and you would prefer us to publish your response only once the consultation has ended, please tick here.

Name

Signed (if hard copy)

## Annex 4

# Consultation questions

A4.1 In conducting this review, we have identified 22 key questions we would like stakeholders to consider. These questions are listed below:

*Question 1: Do stakeholders agree with our proposed retail market definition? In particular, do you agree that separate markets continue to exist for traditional interface and alternative interface retail leased lines?*

*Question 2: Do stakeholders believe that there is evidence that might support an alternative view?*

*Question 3: Do stakeholders agree with our proposed approach to geographic market definition?*

*Question 4: Do stakeholders agree with our proposed retail geographic market definitions?*

*Question 5: Do stakeholders agree with our proposed wholesale product market definitions? In particular, do you agree with Ofcom that: i) a separate market now exists for high bandwidth AISBOs, and ii) the very high bandwidth TISBO market now includes circuits at bandwidths above 140/ 155 Mbit/s?*

*Question 6: Do stakeholders agree with our proposed wholesale geographic market definitions? In particular, do you agree with Ofcom that a separate market now exists in the UK for high bandwidth TISBOs in the Central and East London Area (CELA)?*

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

*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?*

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

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

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

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

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

*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?*

*Question 16: Do stakeholders agree with our assessment of the appropriate regulatory option and our proposed remedies for the wholesale TISBO markets in the UK excluding the Hull area?*

*Question 17: Do stakeholders agree with our assessment of the appropriate regulatory option and our proposed remedies for the wholesale low bandwidth AISBO market in the UK excluding the Hull area?*

*Question 18: Do stakeholders agree with our assessment of the appropriate regulatory option and our proposed remedies for the wholesale trunk market?*

*Question 19: Do stakeholders agree with Ofcom's assessment about the appropriate regulatory option and our proposed remedies for the retail low bandwidth traditional interface market in the UK? In particular, do you think that Ofcom should accept BT's proposed voluntary undertakings that it will continue to supply new analogue and sub-2Mbit/s retail circuits until 2011 or earlier if, subject to industry agreement and consent by Ofcom, the underlying platform is closed at an earlier date; that it will not increase its prices for analogue services more quickly than the rate of inflation (RPI-0%) for a period two years following the publication of the LLMR statement i.e. from 2008 to 2010; and that it will commit to a further two-year cap, the level of which would be agreed with Ofcom prior to 2011?*

*Question 20: Do stakeholders agree with our assessment of the appropriate regulatory option and our proposed remedies for the wholesale TISBO markets in the Hull area? In particular, do you think Ofcom should accept KCOM's proposed voluntary undertaking not to increase the prices of its wholesale TISBO services by more than RPI+0% over the next four years?*

*Question 21: Do stakeholders agree with our assessment of the appropriate regulatory option and our proposed remedies for the wholesale AISBO markets in the Hull area?*

*Question 22: Should Ofcom investigate further the case for introducing a dark fibre remedy by undertaking a market review of the relevant market? If such a review were to be undertaken, is it likely that BT or any other CP would be found to have SMP in that market? And if SMP were to be found, what would be the pros and cons of requiring the dominant provider to make dark fibre in the access network available to third parties?*

## Annex 5

# Market trends analysis

- A5.1 This Annex presents information on the size of the retail and wholesale leased line markets. Some corresponding information is also provided on other business connectivity services. Estimates are based on revenue and installed circuit volume data provided to us by CPs.
- A5.2 This Annex considers the overall value of each wholesale and retail leased line market. It then considers the underlying trends in these markets first on a volume basis and then by revenue.
- A5.3 The data presented below is subject to some important caveats. In particular, some OCPs were not able to collate full historic data for circuit volumes and revenues. This was particularly the case with the revenue data, which was often incomplete in earlier years (2004 and 2005). Our analysis below therefore identifies apparent market trends which may in fact be explained by incomplete data. In addition, where appropriate, we have presented BT only data alongside data for the whole market (including BT), as BT's data were more complete for all time periods. We have only presented BT data in relation to relevant retail SMP services.

### Market Size and Trends – Retail

- A5.4 The UK retail market for business connectivity services is currently worth about £2.1bn per annum, of which about half is accounted for by leased lines (i.e. analogue, digital SDH/PDH and Ethernet services). A breakdown of leased line revenues by circuit type and bandwidth is shown in Table 39 below. As noted above, these revenues are approximate as some CPs were unable to provide reliable data.

**Table 39: Breakdown of UK Retail Leased Line Revenues, 2006**

Retail Circuit Type	Bandwidth	£m	%
Analogue		71.2	7.1%
Digital SDH/PDH	<2Mbit/s	207.7	20.6%
	2 & 8Mbit/s	354.0	35.2%
	34-155Mbit/s	34.4	3.4%
	>155Mbit/s	11.5	1.1%
Traditional Interface Total		678.7	67.4%
Ethernet	10Mbit/s	144.9	14.4%
	100Mbit/s	125.7	12.5%
	1Gbit/s and above	57.0	5.7%
Alternative Interface Total		327.6	32.6%
Grand Total		1006.3	100.0%

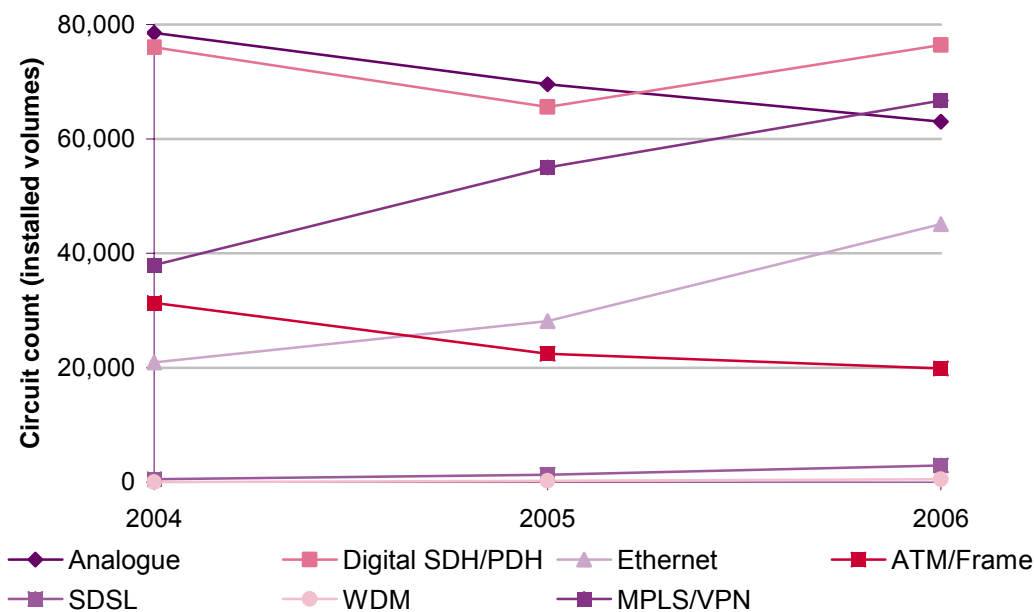
- A5.5 Points to note include the following:
- About 80% of the revenues from Traditional Interface circuits is accounted for by low bandwidth SDH circuits (i.e. 8Mbit/s or less);

- b) Ethernet services account for about 32% of total revenues, with revenues more evenly distributed across lower and higher bandwidths.

### Retail volume trends

- A5.6 There have been some significant structural changes in demand for business connectivity services since 2004, with a shift away from SDH and analogue leased lines, ATM and Frame Relay towards Ethernet leased lines and VPNs. However, digital SDH/PDH leased lines remain the highest value business connectivity service.
- A5.7 This is illustrated in Figure 65 which shows the breakdown of business connectivity volumes in Q4 2004, 2005 and 2006 for all CPs (including BT).

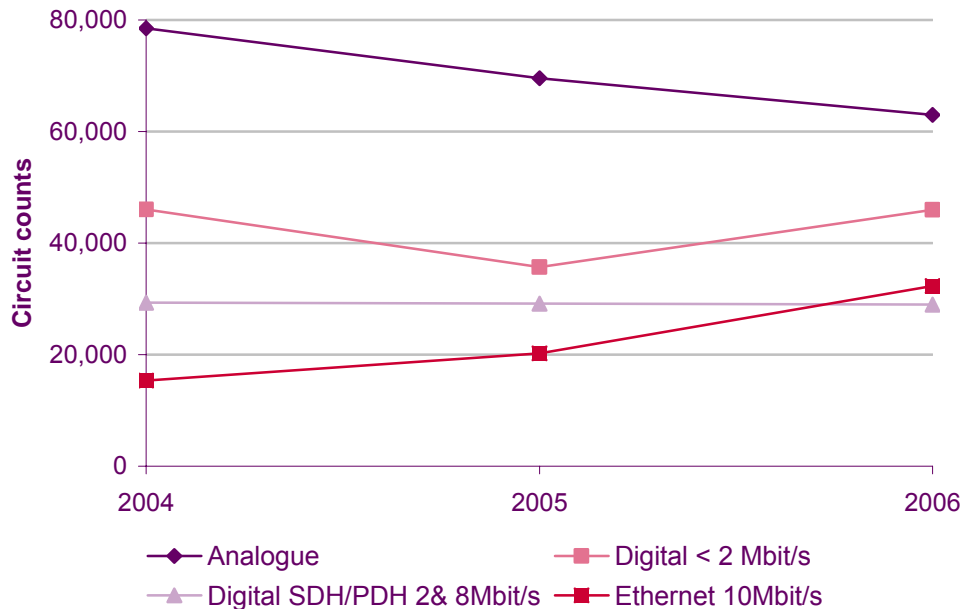
**Figure 65: Overall market trends for business connectivity, 2004-2006**



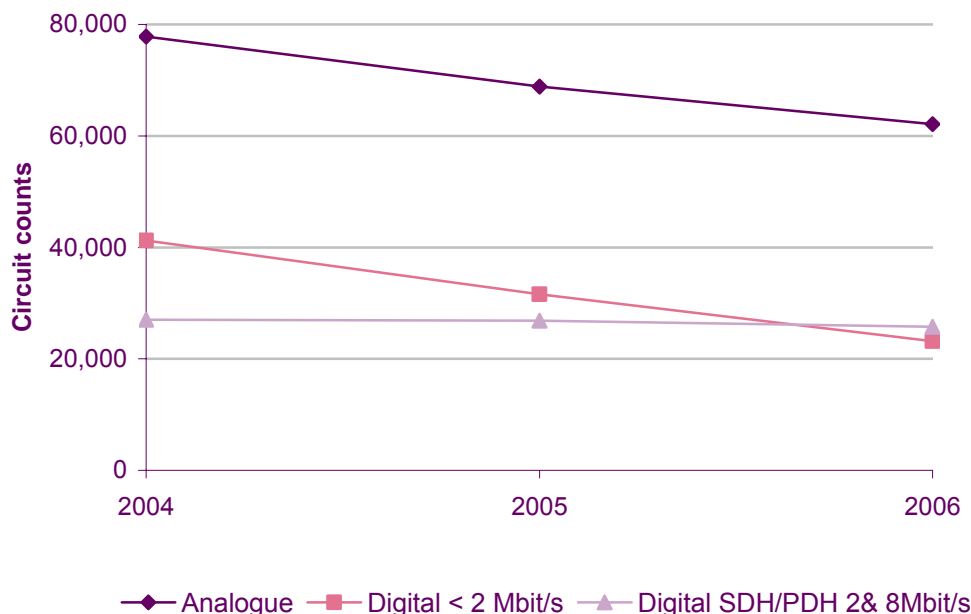
- A5.8 The above diagram implies a strong overall decline for Analogue and ATM/Frame Relay circuits. In contrast, Ethernet and VPN services have exhibited strong growth over the same period. Digital SDH/PDH leased lines have remained fairly stable. There are only relatively small volumes of SDSL and Wave Division Multiplexed (WDM) services.
- A5.9 As noted above, there are gaps with the historic data provided by OCPs. This may have the effect of overstating the growth in certain services (particularly as there are more gaps in earlier year data) or understating the decline of other services.
- A5.10 OCPs' difficulties in accounting for sales of VPN services may understate the growth in these services. This is because VPNs often make use of leased lines or ADSL i.e. leased lines/ADSL are often used to access a VPN 'cloud'. For present purposes, it may be that OCPs therefore report these access links under 'leased lines', which means that OCP sales of VPNs are not fully accounted for in the VPN trends illustrated above.

A5.11 Overall given the data in Table 39, there does not appear to have been significant changes to digital SDH/PDH leased lines revenues. This stability masks some significant changes to the revenues earned by leased lines of different bandwidths. Figure 66 below considers the trends for low bandwidth leased lines. We have not reported BT's retail Ethernet volumes as it not one of the retail markets in our SMP assessment.

**Figure 66: Retail Volume Trends at low bandwidths (All CPs)**



**Figure 67: Retail Volume Trends at low bandwidths (BT only)**

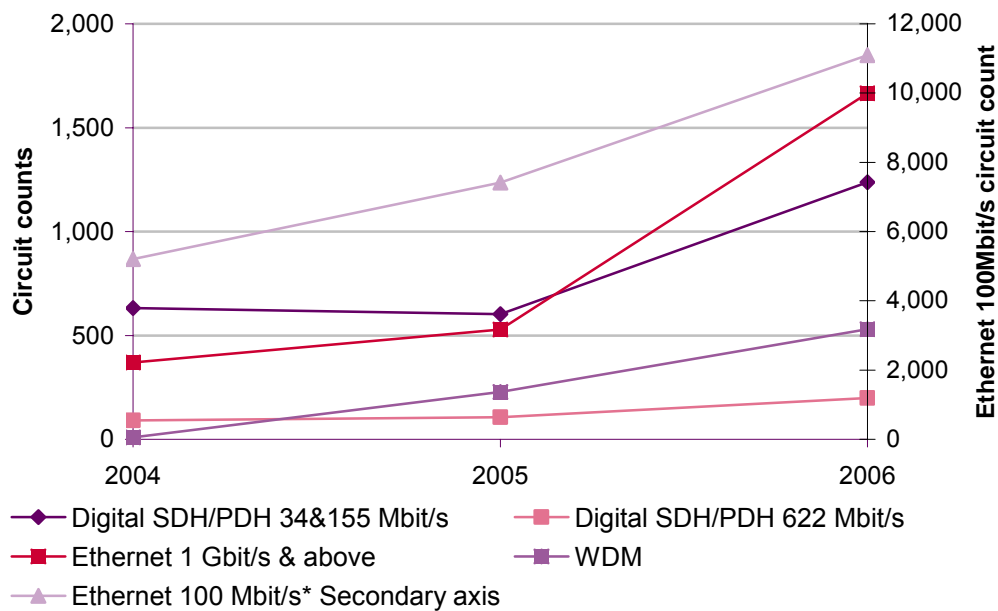


A5.12 In volume terms, analogue and digital circuits at below 2Mbit/s account for the majority of retail circuits. Analogue circuits are declining, while 2Mbit/s and higher bandwidth services have remained stable. The data for sub-2Mbit/s services are more difficult to interpret, with BT volumes declining but OCP circuits apparently

increasing in 2006. This may reflect under-reporting of circuit volumes by OCPs in earlier years. However, notwithstanding possible data issues, there is not strong evidence of an overall trend of customers migrating from digital SDH/PDH to Ethernet within the low bandwidth market.

A5.13 Figure 68 considers higher bandwidth circuits. The overall volume of high bandwidth circuits is much lower than the volume of lower bandwidth circuits. Given the much higher volume of sales of Ethernet 100Mbit/s services (as against other Ethernet services), this service is shown on the secondary (i.e. right hand) vertical axis below.

**Figure 68: Retail Volume Trends at higher bandwidths (all CPs)**



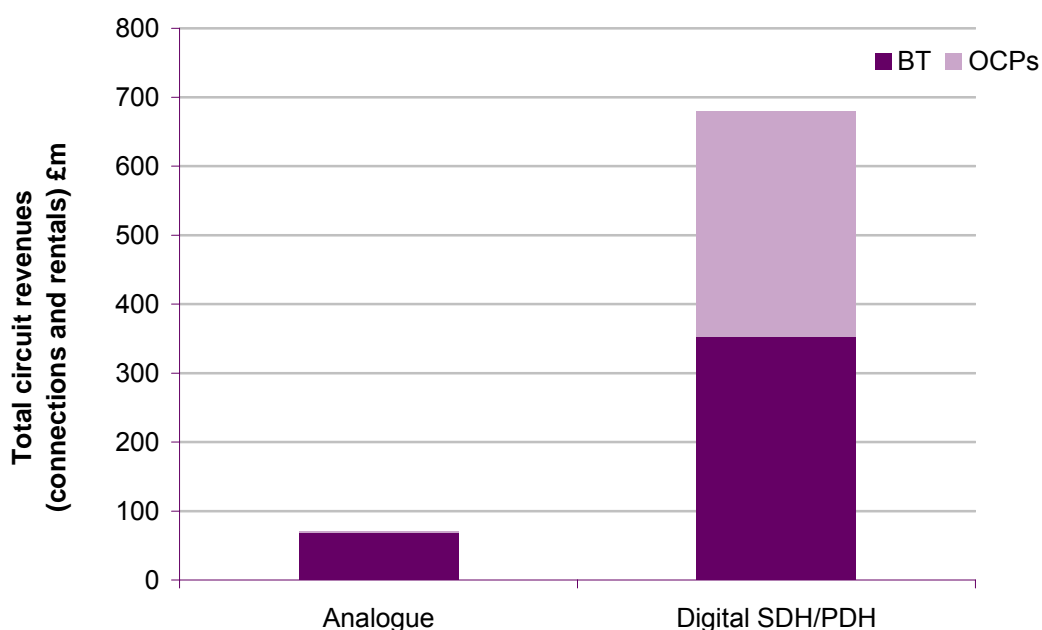
A5.14 In general there has been growth both in Digital SDH/PDH and Ethernet services. The Ethernet market did, however, experience stronger growth than the digital SDH/PDH market. Another trend is the increase in the sale of retail WDM services.

**Retail revenue trends**

A5.15 As stated in the introduction, gaps in OCP data make the revenue trend data far less reliable than the circuit volume data. For this reason, Ofcom has presented historical trend revenue data for BT only. Only a one-year snapshot of the overall market (i.e. BT and OCPs) is presented (see Figure 69 below). The retail revenue data is presented below for retail analogue and digital SDH/PDH only (all bandwidths).



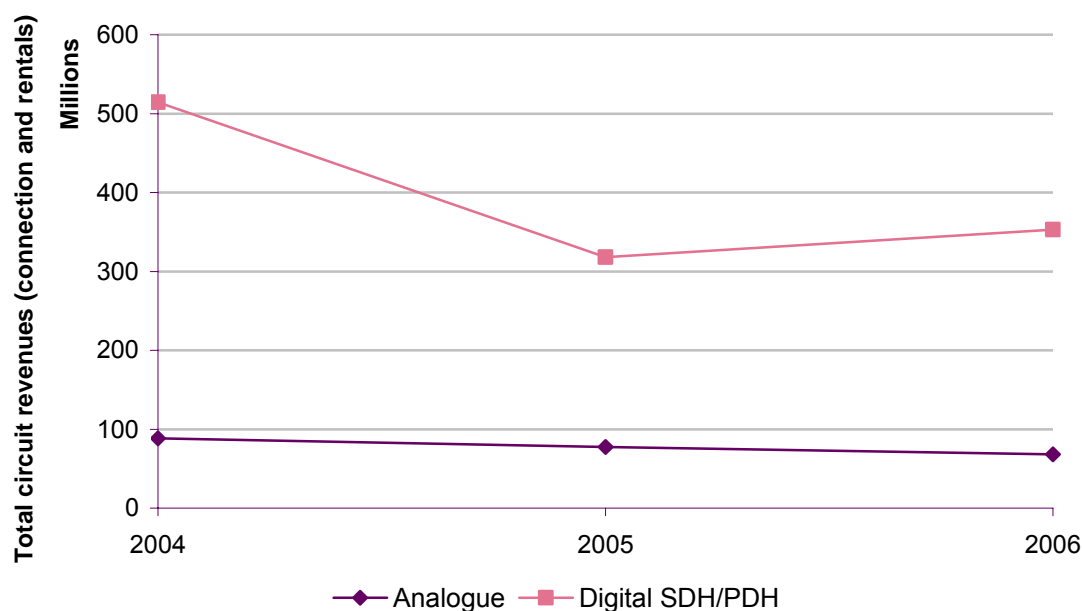
**Figure 69: Breakdown of revenues by service type, 2006**



A5.16 Digital SDH/PDH services remain the most important retail service in revenue terms. Despite the large number of circuits, analogue services account for only a small proportion of revenues, with the majority of revenues accruing to BT.

A5.17 Figure 70 below illustrates the trends in BT’s retail revenues for these services.

**Figure 70: Retail Revenue Trends (BT only)**



A5.18 This shows that there has been a sharp decline in digital SDH/PDH revenues over the relevant period (i.e. a 31% decrease between 2004 and 2006). Although there was a slight increase in revenues between 2005 and 2006. This overall revenue decline of 31% compares to a 39% decrease in the total volume of retail SDH/PDH circuits sold over the same period. The strongest decline was seen in the case of

digital SDH/PDH circuits below 2Mbit/s. The remaining speeds at 2Mbit/s and above have either remained stable or grown.

**Table 40: Retail revenue trends (BT only)**

	Revenues (£m)		Revenue trends (2004 to 2006)	Volume trends (2004 to 2006)
	2004	2006		
<b>Analogue</b>	89	68	-24%	-25%
<b>Digital SDH/PDH</b>	514	353	-31%	-39%

## Market Size and Trends - Wholesale

A5.19 Table 41 sets out a breakdown of revenues from external sales of wholesale leased lines by circuit type and bandwidth. 2Mbit/s PPCs account for over half total revenues. It is also noticeable that Ethernet services account for a smaller proportion of the wholesale market than the retail market.

**Table 41: Breakdown of Wholesale UK leased line revenues 2006 (external sales only – all CPs)**

Wholesale Circuit Type	Bandwidth	£m	%
Partial private circuits	<2Mbit/s	40.8	11.8%
	2Mbit/s	173.4	50.3%
	>2 to 8Mbit/s	2.6	0.8%
	34-155Mbit/s	59.0	17.1%
	>155Mbit/s	8.8	2.6%
Traditional Interface Total		284.6	82.5%
Ethernet (WES)	10Mbit/s	16.8	4.9%
	100Mbit/s	27.4	7.9%
	1Gbit/s and above	16.1	4.7%
Alternative Interface Total		60.3	17.5%
Grand Total		344.9	100.0%

## Wholesale volume trends

A5.20

A5.21 Table 42 presents corresponding trend volume data.

**Table 42: Overall market trends for business connectivity, 2004-2006 (all CPs)**

Wholesale Circuit Type	2004	2005	2006
Analogue	0	0	0
Digital SDH/PDH	250,964	267,981	279,171
Ethernet	144	1,028	5,731
BES	316	696	8,781
ATM/Frame	205	186	67
WDM	22	31	309
SDSL	1	4,878	17,857
<b>Grand Total</b>	<b>253,972</b>	<b>277,018</b>	<b>317,645</b>

A5.22 It shows that PPCs dominate wholesale sales, with external sales of nearly 280,000 circuits for 2006. Although AISBO circuits remain small in comparison, there has been strong growth in this category with rising sales of both Ethernet and BES circuits (the latter in particular reflecting LLU roll-out). There has also been a large increase in wholesale SDSL lines. Growth in wholesale SDSL lines is faster than sales of SDSL at the retail level, which might suggest that SDSL is used as an input to services other than traditional interface circuits.

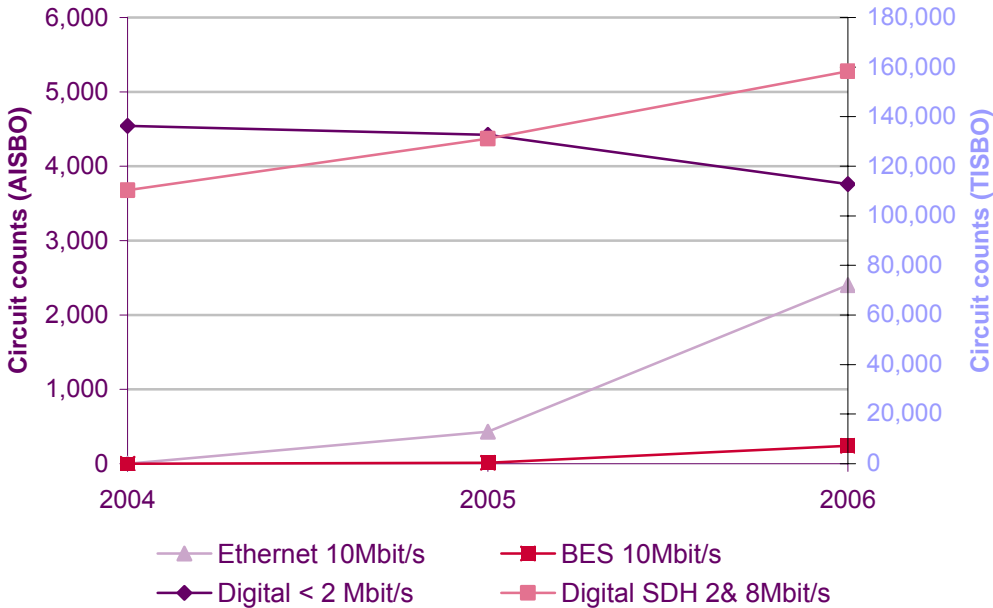
A5.23 However, there are doubts about the reliability of the above aggregate trend data. In particular, the data suggests that BT has far higher market shares than is suggested by the more detailed bottom-up view of BT and OCP based on circuits counts. On this basis, the table below reports market trends for BT only.

**Table 43: BT external sales volumes for business connectivity, 2004-2006**

Wholesale Circuit Type	2004	2005	2006
Digital SDH/PDH	248,655	267,161	275,372
Ethernet	0	881	4,234
BES	316	696	7,475
<b>Grand Total</b>	<b>248,971</b>	<b>268,738</b>	<b>287,081</b>

A5.24 Given the overall growth in wholesale circuit sales for TISBO and AISBO services, Figure 71 and Figure 72 below compare wholesale trends for lower and higher bandwidth services. In the first diagram, given the much higher volumes of TISBO circuits, sales of AISBO circuits are shown on the right hand axis and TISBO circuits on the left.

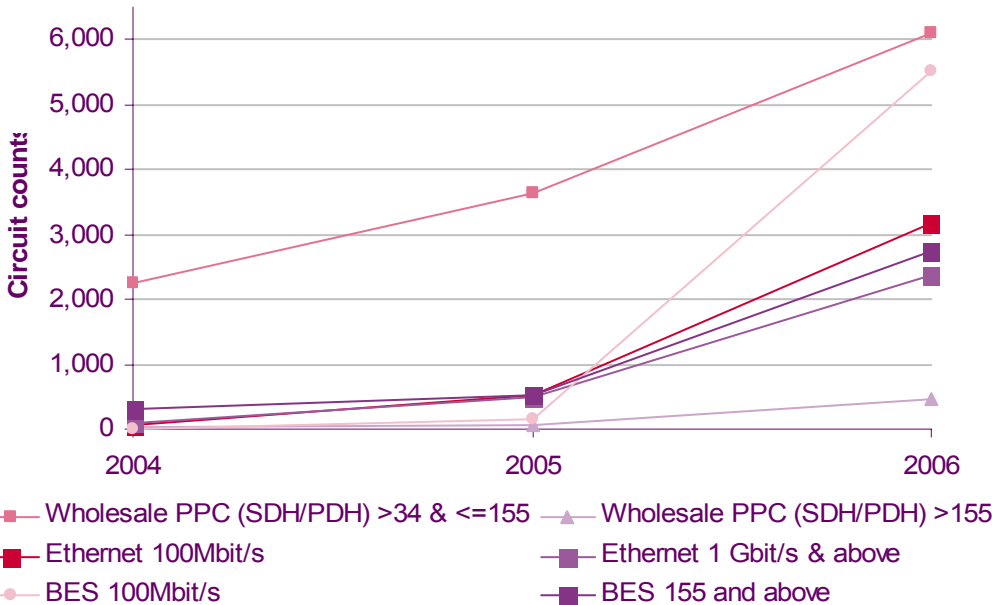
Figure 71: Wholesale volume trends at low bandwidths (BT only)



A5.25 Figure 71 shows that BT’s sale of wholesale 2 Mbit/s circuits has increased from 2004-06. On the other hand the sales of <2 Mbit/s has fallen. WES and BES circuits have both seen growth.

A5.26 Figure 72 shows the strong growth in higher bandwidth circuits.

Figure 72: Wholesale volume trends at higher bandwidths (BT only)



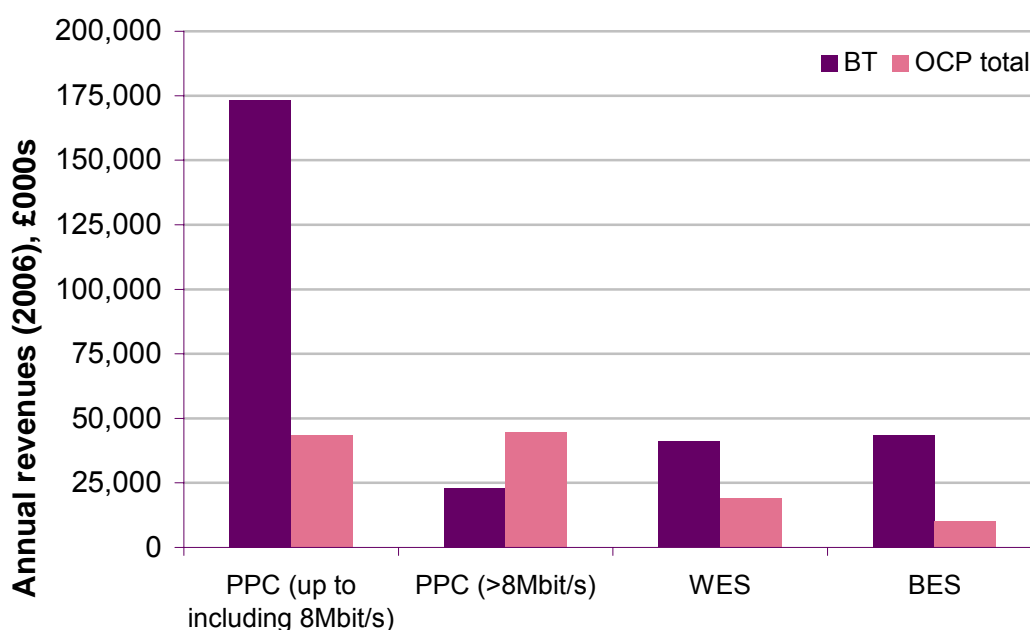
A5.27 Wholesale PPCs for SDH/PDH at 34/45 Mbit/s and 155 Mbit/s circuits have grown strongly since 2004. Starting from a very low base in 2004, AISBO circuits at different speeds have generally followed a similar upward trend to each other. BES circuits have been subject to the highest growth, although growth of lower bandwidth BES circuits (10Mbit/s) to a lesser extent.

A5.28 The above data suggest that wholesale volumes are dominated by sales of PPCs. Although AISBO services are growing strongly, the overall differences in the volumes concerned suggests that there is a limited prospect of AISBO sales overtaking PPCs sales over the next few years.

**Wholesale revenue trends**

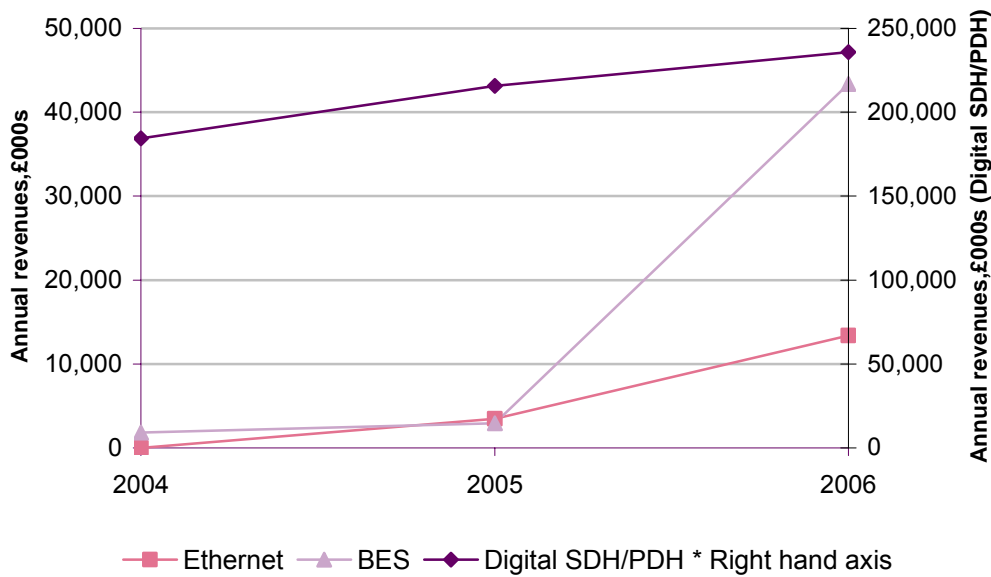
A5.29 With respect to the revenue breakdown by service. Volume shares for PPCs broadly match the associated revenues. However, WES and BES circuits earn relatively higher revenues relative to their overall circuit count. This is likely to reflect the fact that these circuits tend to be sold at higher bandwidths (i.e. 100 Mbit/s and above).

**Figure 73: Breakdown of revenues by service type 2006**



A5.30 As with the retail revenues, it is not possible to construct reliable historic trend data for OCPs. On this basis, Figure 74 presents trend data corresponding only to BT's revenues. Due to the high value of digital SDH/PDH, this is shown on the secondary (i.e. right hand) vertical axis.

**Figure 74: Wholesale Revenue Trends (BT only)**



A5.31 Figure 74 shows digital SDH/PDH revenues on the right hand axis. The strong increase in BES revenues reflects the volume increases due to the uptake of LLU over the same period. Table 44 sets out below the relationship between revenue and volumes between 2004 and 2006 for digital SDH/PDH circuits of speeds up to and including 155 Mbit/s.

**Table 44: Wholesale revenue versus volume trends (BT only)**

	Revenues (£m)		Revenue trends (2004 to 2006)	Volume trends (2004 to 2006)
	2004	2006		
Digital SDH < 2 Mbit/s	45.9	41.9	-9%	-21%
Digital SDH 2& 8Mbit/s	125.2	166.5	25%	30%
Digital SDH >34 & <=155	12.4	24.6	50%	52%

A5.32 Although not shown in Table 44 overall revenues across all digital SDH/PDH (including >155 Mbit/s) have increased faster than volume increases. However, as seen in the table, revenues for digital SDH/PDH circuits have broadly tracked volume increases for circuits at 2Mbit/s and above. On the other hand, the decline seen in revenues for sub-2Mbit/s circuits was not as fast as the decline in volumes for those services.

## Annex 6

# Market shares analysis

### Introduction

- A6.1 This annex sets out 2006 volume market shares of the main Communications Providers in the markets being examined in the current market review and compares these to the market shares presented in the 2003/04 Review.
- A6.2 This section first presents market shares in the UK (excluding the Hull area).
- A6.3 Market shares are presented for each of the following retail markets in the UK (excluding the Hull area):
- low bandwidth traditional interface retail leased lines including analogue circuits and digital circuits at bandwidths up to and including 8Mbit/s;
  - high bandwidth traditional interface retail leased lines at bandwidths above 8Mbit/s up to and including 45Mbit/s;
  - very high bandwidth traditional interface retail leased lines at bandwidths over 45 Mbit/s;
  - low bandwidth alternative interface retail leased lines at bandwidths up to and including 1Gbit/s; and
  - high bandwidth alternative interface retail leased lines at bandwidths over 1Gbit/s.
- A6.4 Market shares are then presented for each of 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 the Central and East London Area (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); and

- A6.5 Market shares are then presented for the following markets in the Hull area<sup>167</sup>:
- low bandwidth traditional interface retail leased lines including analogue and 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.
- A6.6 Market shares are only presented on a volume basis for reasons explained in Section 7.
- A6.7 Market shares in the national trunk market are presented in Section 7. The methodologies used to calculate these shares differ somewhat from those used in other wholesale markets, and the discussion of this issue is set out in fully in Section 7.

### **Comparability with 2003/04 Review market shares**

- A6.8 There are a number of points to note when drawing comparisons between the market shares calculated in this market review, and those calculated in 2004.
- A6.9 In some instances, current market definitions differ from those used in the 2004 market review. Traditional interface services above 45Mbits/s are now in the very high bandwidth market. In addition, alternative interface services are now split into low and high bandwidth markets.
- A6.10 Geographic market definitions also differ in that we now define an additional geographic market in the high bandwidth TISBO market comprising parts of central and east London.
- A6.11 Wholesale market shares cited in the 2004 market review were mainly derived from retail market shares, which was largely because of a lack of reliable data for the wholesale market. However, for present purposes we have been able to derive wholesale shares more directly, by combining retail and wholesale data. The methodology used is set out in more detail in Annex 7.

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<sup>167</sup> The Hull area is defined as those postal sectors in Hull where KCOM has presence. The Central and East London Area is made up of parts of CLZ and the Docklands, as defined in Section 6.



**Retail market shares in the UK (excluding the Hull area)****Market for low bandwidth traditional interface retail leased lines including analogue circuits and digital circuits**

A6.12 Table 45 shows BT's market share in the low bandwidth traditional interface retail leased lines market in 2006. Table 46 shows BT's share from 1997/98 to 2002/03.

**Table 45: Volume 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

**Table 46: BT's volume share in the low bandwidth traditional interface retail leased lines market in the UK (excluding the Hull area) (1997/98-2002/03)**

	Total	BT	BT share (%)
97/98	494	408	83
98/99	469	358	76
99/00	463	361	78
00/01	462	400	87
01/02	415	342	82
02/03	451	354	78

Figures shown in thousands

Source: Ofcom/Ofcom Market Information (2004 Leased Lines Market Review p324)

**Market for high bandwidth traditional interface retail leased lines**

A6.13 Table 47 shows 2006 market shares of BT and other main players in the retail high bandwidth traditional interface leased lines market. Table 48 shows BT's market share in this market in 2000/01 and 2001/02. As noted above, the current market definition for this market differs somewhat from that used in the previous market review.

**Table 47: Volume shares for high bandwidth traditional interface retail leased lines in the UK (excluding the Hull area) (2006)**

	Share (%)
BT	33
C&W	24
KCOM*	24
Verizon	7
Others (no other CP had >4%)	12

Bandwidths above 8Mbit/s up to and including 45Mbit/s

\* These volumes correspond to KCOM's activities outside the Hull area

Source: CP data, Ofcom

**Table 48: BT's volume share in the high bandwidth traditional interface retail leased lines market in the UK (excluding the Hull area) (2000/01-2001/02)**

	<b>BT share (%)</b>
00/01	35
01/02	42

Bandwidths above 8Mbit/s up to and including 155Mbit/s  
Source: Ofcom Market Information (2004 Leased Lines Market Review pp 369-70)

### Market for very high bandwidth traditional interface retail leased lines

A6.14 Table 49 sets out the market shares of BT and other significant participants in the very high bandwidth traditional interface retail leased lines market in 2006. Table 50 shows BT's market share in this market in 2000/01 and 2001/02. Again, the current market definition for this market differs somewhat from that used in the previous market review.

**Table 49: Volume shares for very high bandwidth traditional interface retail leased lines in the UK (excluding the Hull area) (2006)**

	<b>Share (%)</b>
BT	35
KCOM*	24
C&W	14
Verizon	11
Thus	6
Others (no other CP had >3%)	10

Bandwidths above 45Mbit/s  
\* These volumes correspond to KCOM's activities outside the Hull area  
Source: CP data, Ofcom

**Table 50: BT's volume share in the very high bandwidth traditional interface retail leased lines market in the UK (excluding the Hull area) (2000/01-2001/02)**

	<b>BT share (%)</b>
00/01	8
01/02	6

Bandwidths above 155Mbit/s  
Source: 2004 Leased Lines Market Review p381

### Market for low bandwidth alternative interface retail leased lines

A6.15 Table 51 shows BT's 2006 market share in the low bandwidth alternative interface retail leased lines market. In the previous market review, all alternative interface services were defined to operate in a single market. BT's market share of the total alternative interface market was estimated to be above 70% in 2004. Table 52 sets out BT's 2004 shares for different bandwidths as well as across all bandwidths.

**Table 51: Volume shares for low bandwidth alternative interface retail leased lines in the UK (excluding the Hull area) (2006)**

	<b>Share (%)</b>
BT	72
Virgin	10

Others (no other CP had >5%) 18

Source: CP data, Ofcom

**Table 52: BT's volume share of the alternative interface retail leased lines market by bandwidth (2004)**

	<b>BT share (%)</b>
Less than 100 Mbit/s	75-80
100 Mbit/s	70
155/622 Mbit/s	55-60
1 Gbit/s	55-60
Above 1 Gbit/s	75
Total	70-75

Source: 2004 Leased Lines Market Review p389

**Market for high bandwidth alternative interface retail leased lines**

A6.16 Table 53 shows market shares in the retail high bandwidth alternative interface leased lines market in 2006.

**Table 53: Volume shares for high bandwidth alternative interface retail leased lines in the UK (excluding the Hull area) (2006)**

	<b>Share (%)</b>
BT	13
Colt	53
Verizon	16
Vtesse	18

Source: CP data, Ofcom

**Wholesale market shares in the UK (excluding the Hull area)**

**Market for low bandwidth traditional interface symmetric broadband origination in the UK (excluding the Hull area)**

A6.17 BT's market share for 2001/02 as estimated in the 2003/04 Review was approximately 84-88%.<sup>168</sup> Table 54 shows BT's market share in the low bandwidth traditional interface symmetric broadband origination in 2006.

**Table 54: Volume shares for low bandwidth traditional interface symmetric broadband origination in the UK (excluding the Hull area) (2006)**

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

Source: CP data, Ofcom

<sup>168</sup> 2004 Leased Lines Market Review, pp356-7.

### Market for high bandwidth traditional interface symmetric broadband origination in the UK (excluding CELA and the Hull area)

A6.18 BT's market share for 2001/02 was estimated to be approximately 44%<sup>169</sup>. This was for the UK excluding Hull, whereas we now define parts of the Central London Zone and the Docklands as a separate geographic market called CELA. Table 55 shows the 2006 volume market shares for the UK excluding both the Hull area and CELA.

**Table 55: 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

### Market for high bandwidth traditional interface symmetric broadband origination in the CELA

A6.19 Table 56 shows the 2006 volume market shares in the high bandwidth TISBO market for the CELA.

**Table 56: Volume shares for high bandwidth traditional interface symmetric broadband origination in the CELA (2006)**

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

Source: CP data, Ofcom

### Market for very high bandwidth traditional interface symmetric broadband origination in the UK (excluding the Hull area)

A6.20 In the 2004 market review, BT's market share in the very high TISBO market was found to be in the region of 10% or less.<sup>170</sup> Table 57 sets out the volume shares for this market in 2006. BT's market share is between 26% and 28%.

**Table 57: Volume shares for very high bandwidth traditional interface symmetric broadband origination in the UK (excluding the Hull area) (2006)**

<sup>169</sup> 2004 Leased Lines Market Review, p370. Note that the 2004 market definition for high bandwidth TISBO services included 155Mbit/s lines.

<sup>170</sup> 2004 Leased Lines Market Review, p381.

	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

### Market for low bandwidth alternative interface symmetric broadband origination in the UK (excluding the Hull area)

A6.21 In the 2004 market review, all alternative interface services were defined to operate in a single market. BT's market share of the wholesale AISBO market was estimated to be over 78%.<sup>171</sup> Table 58 sets out 2006 market shares in this market.

#### Table 58: 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

### Market for high bandwidth alternative interface symmetric broadband origination in the UK (excluding the Hull area)

A6.22 Table 59 sets out volume market shares in the high bandwidth AISBO market in 2006.

#### Table 59: 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

### Market shares in the Hull area

<sup>171</sup> 2004 Leased Lines Market Review, p389.

### Market for low bandwidth traditional interface retail leased lines including analogue circuits and digital circuits in the Hull area

A6.23 Table 60 shows the 2006 volume market shares for low bandwidth traditional interface retail leased lines in the Hull area. In the previous market review, Ofcom was unable to determine market shares in the Hull area with complete certainty. Estimates provided by KCOM suggested that its market share in this market was in the region of 83%, or 76% when adjusted to exclude sales to OCPs made on the same terms as sales to end users.<sup>172</sup>

**Table 60: 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

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

A6.24 In the previous market review, KCOM estimated that its volume share of this market was 83%.<sup>173</sup> Table 61 shows the 2006 volume market shares for low bandwidth traditional interface symmetric broadband origination in the Hull area.

**Table 61: 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

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

A6.25 In the previous market review, KCOM estimated that its volume share of this market was 65%.<sup>174</sup> (This estimate includes 155Mbit/s services, which were included in the high bandwidth TISBO market definition). Table 62 shows the volume market shares for high bandwidth traditional interface symmetric broadband origination in the Hull area.

<sup>172</sup> 2004 Leased Lines Market Review, p398.

<sup>173</sup> 2004 Leased Lines Market Review, pp403-4.

<sup>174</sup> 2004 Leased Lines Market Review, p407.

**Table 62: 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

**Market for very high bandwidth traditional interface symmetric broadband origination in the Hull area**

A6.26 In the previous market review, the market for very high bandwidth TISBO services did not exist in the Hull area.<sup>175</sup> Table 63 shows 2006 volume market shares for very high bandwidth traditional interface symmetric broadband origination in the Hull area.

**Table 63: 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

**Market for low bandwidth alternative interface symmetric broadband origination in the Hull area**

A6.27 In the previous market review, all alternative interface services were defined to operate in a single market. The information Ofcom received then suggested that KCOM was the sole provider of AISBO circuits in the Hull area.<sup>176</sup> Table 64 sets out 2006 volume market shares for wholesale alternative interface symmetric broadband origination up to and including 1Gbit/s for the Hull area.

**Table 64: Volume shares for low bandwidth alternative interface symmetric broadband origination in the Hull area (2006)**

	Share (%)
KCOM	67
BT	33

Source: CP data, Ofcom

**Market for high bandwidth alternative interface symmetric broadband origination in the Hull area**

A6.28 In 2006 KCOM was the sole supplier in the market for alternative interface symmetric broadband origination over 1Gbit/s market in the Hull area.

<sup>175</sup> 2004 Leased Lines Market Review, p411

<sup>176</sup> 2004 Leased Lines Market Review, p411

## Annex 7

# Geographic analysis

## Market analysis

### Introduction

A7.1 We have carried out market analysis of the relevant retail markets to inform our assessment of competitive conditions on a geographic basis. Our analysis of the data collected from the operators in the Information Request has allowed us to estimate the proportion of retail leased lines services provided by each operator in each postal sector, within the product markets as defined.

### Retail service share analysis

A7.2 The Information Request collected empirical data from BT and 22 Other Communications Providers (OCP). The retail market data gathered from operators included approximately 247,000 traditional interface retail leased line records and approximately 48,000 alternative interface retail leased line records. There are also 114,000 records that were subsequently considered to be outside the leased line markets defined by Ofcom.<sup>177</sup>

A7.3 This analysis looked at the retail service share at postal sector level.

A7.4 The output of the retail service share analysis shows the detailed breakdown of operators' shares of 'retail service ends' for each postal sector in the UK. A 'retail service end' is defined as the customer end point (i.e. customer site) served within a given leased line market.

A7.5 There are two main types of retail leased line services considered:

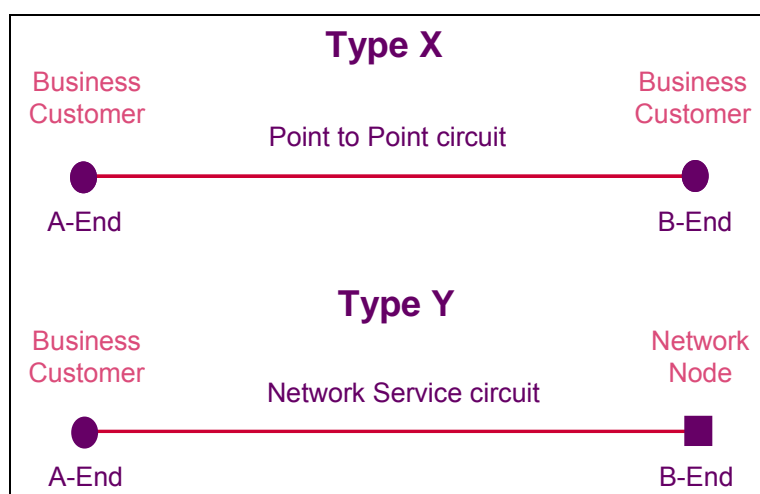
- Point-to-point retail leased line (Type X), which is a circuit that connects two business customer sites (i.e. both ends are business customers' ends); and
- Retail network services (Type Y), which is a circuit that connects a business customer into the operator's network node (i.e. one end is a network node)

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<sup>177</sup> These included circuits that are used to support PSTN telephone circuits, IP VPNs, ISDN circuits, Dark fibre services, ATM, Frame Relay and ADSL/Cable Modem circuits.



**Figure 75: Retail leased line services**



- A7.6 A point-to-point retail leased line (Type X) used to connect two business customer sites contributes two customer end-points to the total service end counts, while a leased line used to connect a business customer site to an operator’s network would contribute one end-point to the total service end count.
- A7.7 Both these types of retail services can be provided using traditional interface e.g. primarily based on SDH, or alternative interface e.g. primarily based on Ethernet technologies.
- A7.8 Ofcom has so far considered the retail market definition as shown in Table 65 below.

**Table 65 – Retail market definition**

	Market	Bandwidth Breaks	Type of Circuits
1	TI Low	Up to and including 2Mbps and 8Mbps	Analogue  Digital SDH/PDH (PPCs)  SDSL (symmetric IPStream/datastream)
2	TI High	Above 8Mbps up to and including 45Mbps	Digital SDH/PDH (PPCs)
3	TI Very High	Above 45Mbps	Digital SDH/PDH (PPCs)
4	AI Low	Up to and including 1Gbps	Ethernet circuits (WES/WEES)
5	AI High	Above 1Gbps	Ethernet circuits (WES/WEES)

A7.9 The methodology to estimate the operator retail service shares consists of the following four steps:

- i) Data cleansing
- ii) Aggregation by postal sector
- iii) Uplift of data
- iv) BT retail service share calculation.

### Step 1: Data cleansing

A7.10 The data submitted by the operators following the Information Request were not consistent. This is because the way operators capture and store their data is different to one another. Therefore, the first step in the market analysis was to manipulate the raw data received into a structure suitable for Ofcom's intended analysis.

A7.11 The following tasks were carried out to ensure the data received is presented in a consistent format:

- Circuits considered to be outside the leased line markets as defined by Ofcom are removed.
- The circuit bandwidths are checked, to ensure they are all consistently recorded in the same unit. The bandwidths are converted to a common format, expressed in Mbps (megabits per second).
- Postcode correction was carried out to remedy the common detectable errors made when using automated batch processing techniques to record postcode data.
- Circuit end point analysis was carried out to identify the non-customer end-points and exclude these from the service share calculations. End-points located at Datacentres, such as Telehouses, Telelinks or Telecity sites are also excluded. Where operators had not provided data on the type of end-point being served, any network end-points were identified using the operator flex point information that was provided.
- Extraction of the postal sector from the postcode data.
- For the retail market share, the circuits sold by OCPs were compared to the circuits sold by BT to ensure that double-counting does not occur; to identify circuits bought by OCP from BT that are re-sold to end customers. If this is the case, the circuit would be recorded as being sold by BT rather than the OCP. The circuits are compared using the Circuit Identifiers, as requested in the Information Request.

### Step 2: Aggregation by Postal Sectors

A7.12 Following the data cleansing of the data submitted, the retail customer ends (A-End and B-End of the leased line) are identified.

A7.13 The postal sectors are extracted from the postcode data for each circuit. If the postcode is not supplied, then the postal sector is used. Otherwise, the area or town is used to geocode the customer end.

A7.14 Ofcom opted to aggregate at the postal sector level when conducting the geographic analysis. The intention would be to aggregate these postal sectors into larger geographic areas when defining the boundaries of separate geographic markets.

A7.15 There are a total of around 10,000 postal sectors in the UK, including Northern Ireland. A summary of postal measures are shown below:

**Table 66:UK Postal Measure**

<b>Geographic Unit</b>	<b>Number</b>	<b>Example</b>
Postcode	1,752,003	SE1 9HA
Postal Sector	c.10,000	SE1 9
Postal District	3,064	SE1
Postal Area	124	SE

A7.16 Typically, a retail circuit has two customer ends. If each end is in a different postal sector, then each end is allocated to the relevant postal sector. If both ends are in the same postal sector, then both ends are allocated to that postal sector.

A7.17 The number of retail customer ends in each postal sector is calculated for each operator. This is done for each defined market.

### Step 3: Uplift of Data

A7.18 Some of the data supplied by the operators were missing or incomplete. This could be in terms of geographic, product or bandwidth information. In this case, the data are uplifted.

A7.19 Product/bandwidth uplift – where the product name or bandwidth has not been provided by the operator, the circuits with unknown bandwidth is allocated to the bandwidth in proportion to the operator’s overall circuit distribution.

A7.20 Geographic uplift – where postcode information has not been provided, the circuits with unknown geographic data are distributed across the postal sectors in proportion to the operator’s geographic distribution.

A7.21 Although the overall uplift required was relatively small in terms of the national market, Ofcom recognises that there could be pockets of locations where the accuracy of market size and subsequent market share calculations could have been compromised as a result of applying uplifts in this manner. These uplift errors could be significant at the individual postal sector level in certain areas, but the impact of the errors decreases as these postal sectors are aggregated into larger areas, and is outweighed by the improved overall accuracy by applying the data uplift.

#### Step 4: BT Service Share Calculation

A7.22 Once the number of customer ends for each operator is determined, BT's share of the retail services is calculated in each postal sector.

A7.23 The service share bands that are used are as follows:

- 0% to 30%
- 30% to 40%
- 40% to 50%
- 50% to 70%
- Above 70%

#### Wholesale service share analysis

A7.24 Ofcom's intention when it devised the information requests sent to operators was to conduct a service share analysis for each of the relevant wholesale markets similar to that conducted for the relevant markets at the retail level and described above. However, the wholesale data received from providers in the Information Request has been such that it has not been possible to conduct the analysis as originally envisaged.

A7.25 Nevertheless, the data provided BT and OCPs relating to the wholesale markets have been such that it has been possible to conduct an analysis of the wholesale markets. As noted above, in the provision of traditional interface products, there are two types of wholesale input, symmetric broadband origination (TISBO and AISBO) and trunk. Using the data provided by the operators, Ofcom has been able to carry out the analysis as set out below.

A7.26 The market definition boundaries between terminating and trunk markets are based on relevant network topology, and in particular we have used the location of network nodes to inform the break between terminating and trunk segments.

A7.27 For every circuit, based on data supplied by BT, it is possible to match the postcode information on the A and B-end of each circuit to a relevant parented BT Tier 1 node. We combine this Tier 1 parenting information to determine whether the circuit is likely to have a trunk component.

A7.28 Based on the 2003/04 Review definition, trunk segments were defined as providing transmission between two BT Tier 1 nodes. Based on the 2003/04 Review definition, it would therefore be assumed that circuits with ends parented on the same BT Tier 1 node would not include a trunk segment, even though in practice these circuits might be physically routed through trunk nodes. However, as set out in Section 5, instead of defining trunk based on BT's Tier 1 nodes, we have proposed to identify a set of 40 "aggregation nodes". As part of this analysis, we have mapped BT's 67 Tier 1 nodes to 1 of the 40 proposed "aggregation nodes" based on the criteria we set out in Section 5.

A7.29 Therefore, circuits parented to the same Tier 1 node or to the same "aggregation node" would not include a trunk segment. This could result in some inter-Tier 1

traffic no longer being counted as having a trunk segment (i.e. where both Tier 1 nodes fall under the same aggregation node).

A7.30 The Information Request sent out to the operators required circuit information for the following sections:

- Retail circuits – all retail circuits
- Wholesale Purchase – wholesale circuits purchased from BT and OCPs
- Wholesale Provision – wholesale circuits sold/provided to BT and OCPs

A7.31 However, the information provided by the operators did not include circuits that are self-provided. Therefore the analysis of the TISBO and AISBO wholesale markets used the data available to derive the circuits that are self-provided. The wholesale data was compared against the results of the retail service share analysis by postal sectors to derive the wholesale service share.

A7.32 The wholesale market can be seen as the sum of the following components:

Total Market = BT Self-provide + BT to OCP + OCP Self-provide + OCP to OCP			
(A)	(B)	(C)	(D)

A7.33 Components (B) and (D) can be found from the data provided by the operators, while components (A) and (C) are derived by comparing the retail circuit information and circuits purchased from others.

A7.34 Therefore, the wholesale service shares for each operator is found using the following:

Wholesale = Retail – Wholesale Purchase + Wholesale Provision
---

A7.35 Similar to the Retail Service Share analysis, the methodology to estimate the operator wholesale service shares consists of the following four steps:

- i) Data cleansing and normalisation;
- ii) Aggregation by postal sector;
- iii) Data uplift; and
- iv) BT wholesale service share calculation.

**Step 1: Data cleansing and normalisation**

A7.36 Similar to the retail service share analysis, it was necessary for Ofcom to manipulate the raw data submitted by the operators into a structure suitable for Ofcom’s intended analysis.

A7.37 The data cleansing and normalisation were carried out as follows:

- Circuits considered to be outside the leased line markets as defined by Ofcom are removed.
- The circuit bandwidths are checked, to ensure they are all consistently recorded in the same unit. The bandwidths are converted to a common format, expressed in Mbps (mega bits per second).
- Postcode correction was carried out to remedy the common detectable errors made when using automated batch processing techniques to record postcode data.
- Circuit end point analysis was carried out to identify the customer end-points and network end points. Where operators had not provided data on the type of end-point being served, any network end-points were identified using the operator flex point information that was provided.
- Trunk segment determination – the parent Tier 1 and aggregation nodes for the ends of each circuit are determined, using data provided by BT. Each circuit is then identified as having a trunk segment or not.
- Extraction of the postal sector from the postcode data.

### Step 2: Aggregation by Postal Sectors

A7.38 Similar to the step carried out in the retail service share analysis, the postal sectors are extracted from the postcode data for each circuit, as Ofcom opted to aggregate at the postal sector level for the geographic analysis.

### Step 3: Data Uplift

A7.39 As with the retail analysis, an uplift factor was applied to the output data from Step 2 to align this with the known number of end points in each market calculated in Step 1 of the analysis:

### Step 4: BT Service Share Calculation

A7.40 The wholesale service shares are calculated from the retail, wholesale purchase and wholesale provision information supplied by each operator. Once this is calculated, BT's wholesale service share in each postal sector is then determined.

### **Trunk segment analysis**

A7.41 The trunk segments for traditional interface circuits are defined as a distinct wholesale market in the LLMR. The trunk is defined as the transmission between BT "aggregation nodes".

A7.42 We have proposed 40 "aggregation nodes" BT Tier 1 nodes. This results in 780 possible trunk routes between aggregation nodes. .

A7.43 To derive the most likely trunk route for each circuit, the nearest serving BT Tier 1 node was first identified. This is done by matching the postcodes to the nearest serving exchange and thus the parented Tier 1 node, using data supplied by BT. As every Tier 1 node is matched to one of the 40 aggregation nodes, it is possible to analyse whether any circuit is likely to have a trunk segment.

A7.44 As stated above, it is assumed that circuits with end points parented on the same aggregation node do not include a trunk segment while those with ends parented on different aggregation nodes include a trunk segment. As such, any circuits between a pair of Tier 1 nodes that are parented to the same aggregation node would not be counted as a trunk segment.

## Network Reach Analysis

### Introduction

A7.45 As set out in Section 6, Ofcom has carried out an analysis of the network operators to assess the extent to which these operators can use their own networks to provide services, either at the retail or at the wholesale level. The network reach analysis can be used to inform an assessment of the extent to which the provision of business connectivity services in different geographic areas is contestable.

A7.46 This annex explains the methodology that was used to carry out the network reach analysis.

### Data used

A7.47 To inform the network reach analysis, Ofcom used a variety of data collected following the Information Request from network operators with regards to their network information, and data purchased from Experian for the location of businesses in the UK.

A7.48 The Experian Business Database provided information on the location of businesses with 250 or more employees within the business. The 250 employee cut-off point was used since, based on discussions with industry, Ofcom is of the view that this is a reasonable proxy for the size of business that could be a potential customer of leased line services. It is also the case that the cost of a leased line is less likely to be justifiable in the case of smaller businesses.

A7.49 Data on network reach were collected from each of the Other Communications Providers (OCPs) and BT. We requested the most recent data on their network infrastructure, geographically located by means of their postcodes / addresses / coordinates. This included the following information:

- Fibre network maps
- Flex points or aggregation points: where existing fibre can be added to in order to connect to end-users. Flexibility points may well be buildings where fibre terminates on an Optical Distribution Frame or underground chambers where the fibre can be accessed, where ducts meet at a junction (etc). The fibre in the ground/duct would have to be added to by fibre-splicing and duct dug in order to connect an end-user premise to the fibre optic cabling.
- Points of interconnect with BT
- Points of interconnect with OCPs

### Overview of analysis

A7.50 The network reach analysis consists of the following parts:

- Flex Points analysis – count of OCPs' flex points for each postal sector
- Contestability analysis – an assessment of the number of operators to which each large business location could seek supply, taking into account different economic build distance assumptions
- Interconnect analysis – the ability for operators to interconnect

### Flex Points Analysis

- A7.51 The flex points analysis used geo-analysis software to plot each of the OCP's flex points information to calculate the number of flex points in each postal sector. This gives some sense of geographic variations in competitive conditions that could exist, as the areas of greater concentration of operator flex points are likely to generate a stronger competitive constraint than those areas where there is less concentration or no flex points present.
- A7.52 However, to provide a more comprehensible picture of the geographic variations in competitive conditions, further analysis is required as the operator's flex points are not limited to providing services to end users located within a single postal sector. Depending on the size of the postal sector, the distribution of large businesses around flex points and assumptions on the economic build distance, an operator could provide services to end users in a number of different neighbouring postal sectors.

### Contestability Analysis

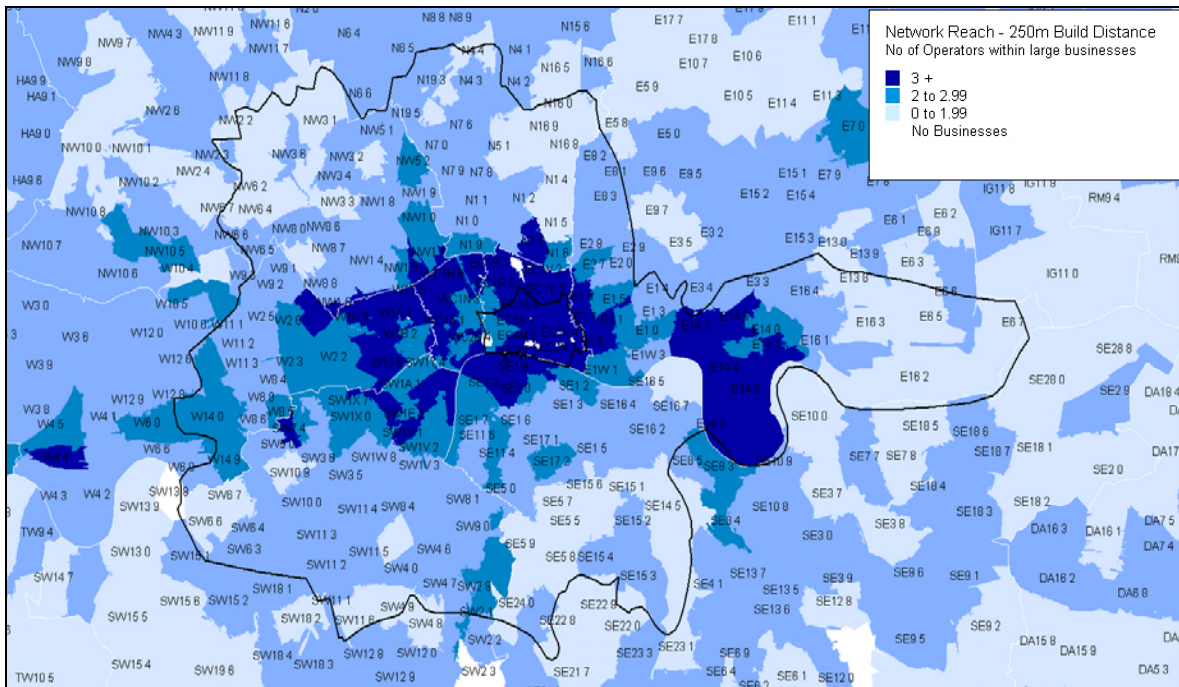
- A7.53 This analysis seeks to find the average number of operators that are able to provide services to end users in each postal sector. The main assumptions for this analysis relate to:
- the number of operators required to provide a sufficiently greater level of competitive constraint as compared with those areas where there is no choice of operator; and
  - the economic build distance, which is the distance that an operator would build out from their network in order to provide services to end users.
- A7.54 In order to illustrate the differences in competitive constraint that may exist, Ofcom's base case assumption is that in the circumstances of leased lines markets there would need to be at least two additional operators (i.e. at least 3 operators) in an area in order to provide a sufficiently different competitive constraint.
- A7.55 The build distance assumption made in this analysis is that operators would be willing to extend their network by a distance of 250m to serve a business customer. Ofcom recognises that this distance would vary on a case by case basis. However, an assumption on build distance has to be made for the purpose of this analysis.
- A7.56 As the base case analysis uses information on flex points, which are located deeper into an operator's network, rather than on points of presence, a shorter economic build distance can be assumed.



A7.57 The analysis involves plotting geographically the location of all large business sites in the UK with more than 250 employees across the business, and comparing this with the geographic location of OCP's flex point information. The average number of operators per business location in each postal sector is calculated, assuming the build distance.

A7.58 Figure 76 and Figure 77 below show the results of the contestability analysis for Central London Zone (CLZ) and City of London areas. This assumes a build distance of 250m and a constraint of at least two OCPs.

**Figure 76 – Number of operators in the CLZ, assuming 250m build distance**



**Figure 77 – Number of operators in the City of London, assuming 250m build distance**

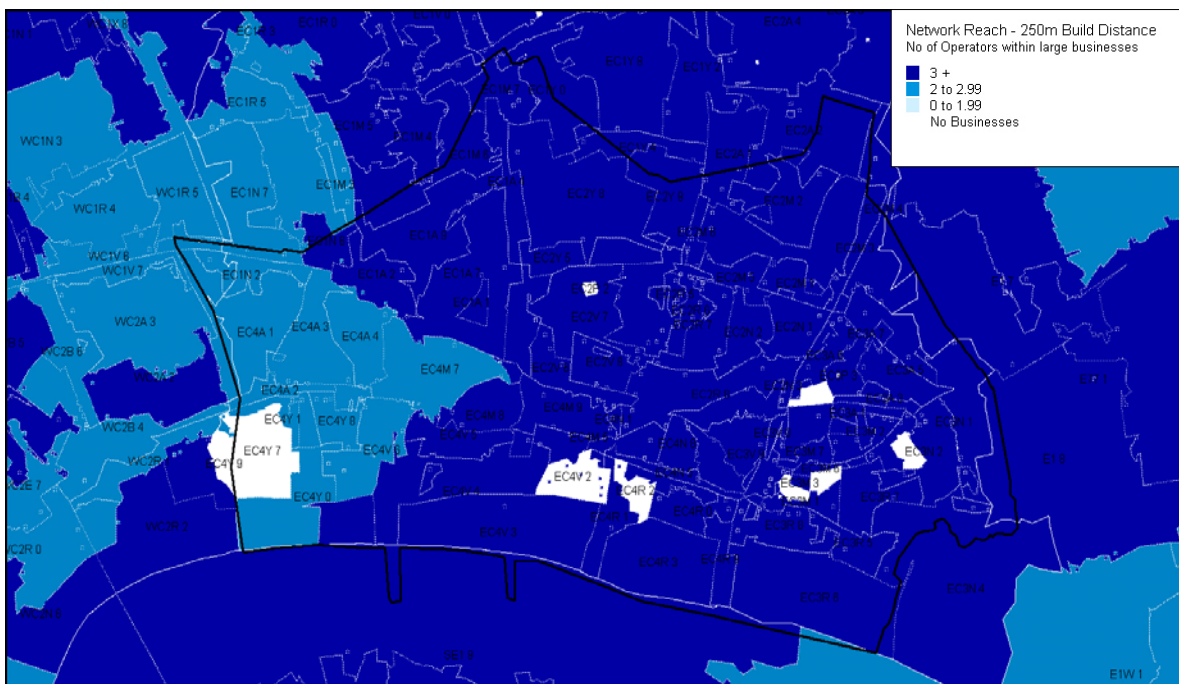




Figure 79 – Number of operators in Glasgow, assuming 250m build distance

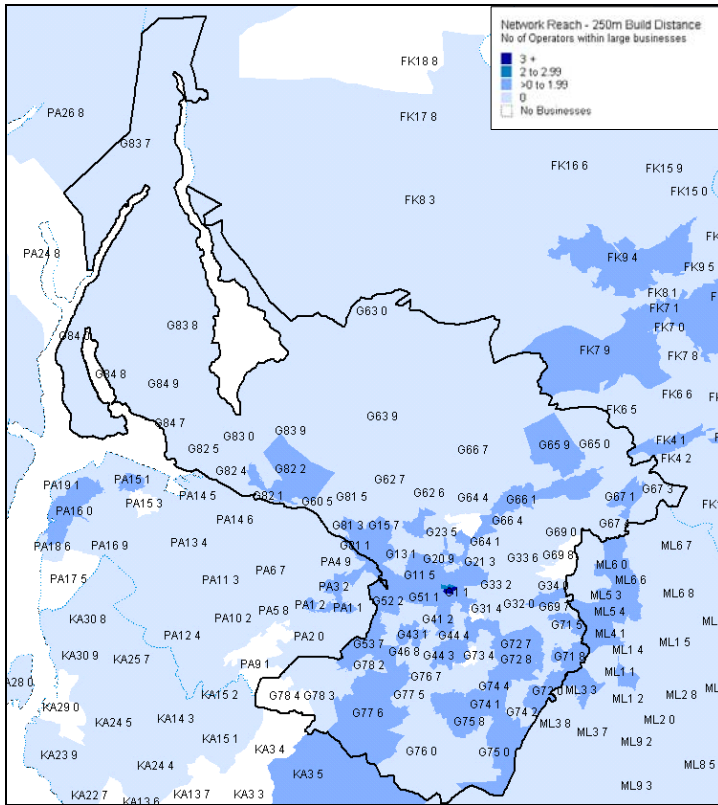


Figure 80 – Number of operators in Liverpool, assuming 250m build distance

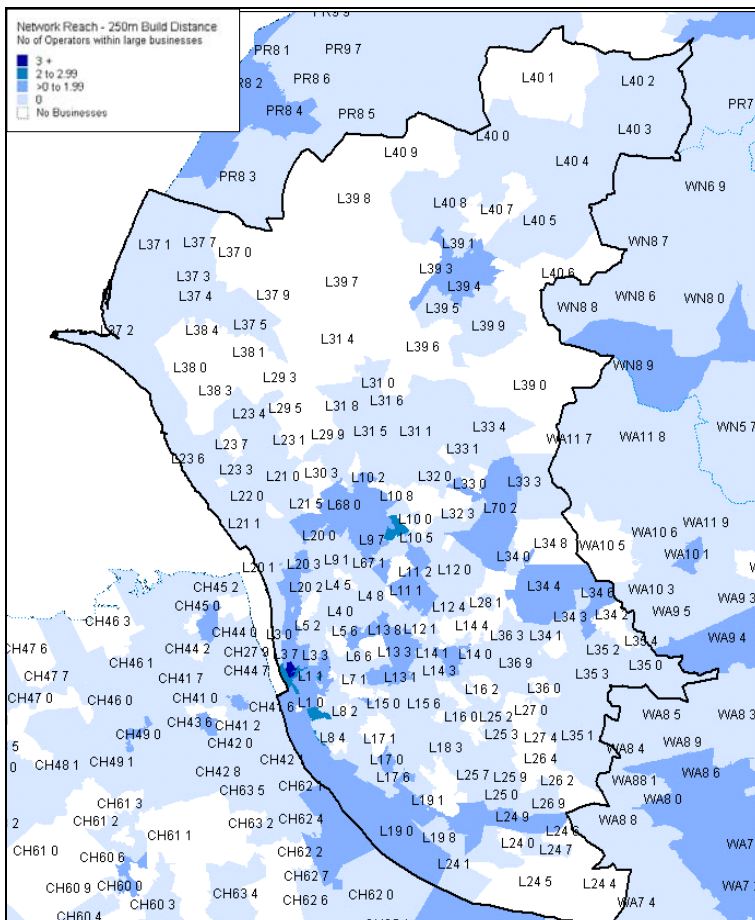




Figure 81 – Number of operators in Leeds, assuming 250m build distance

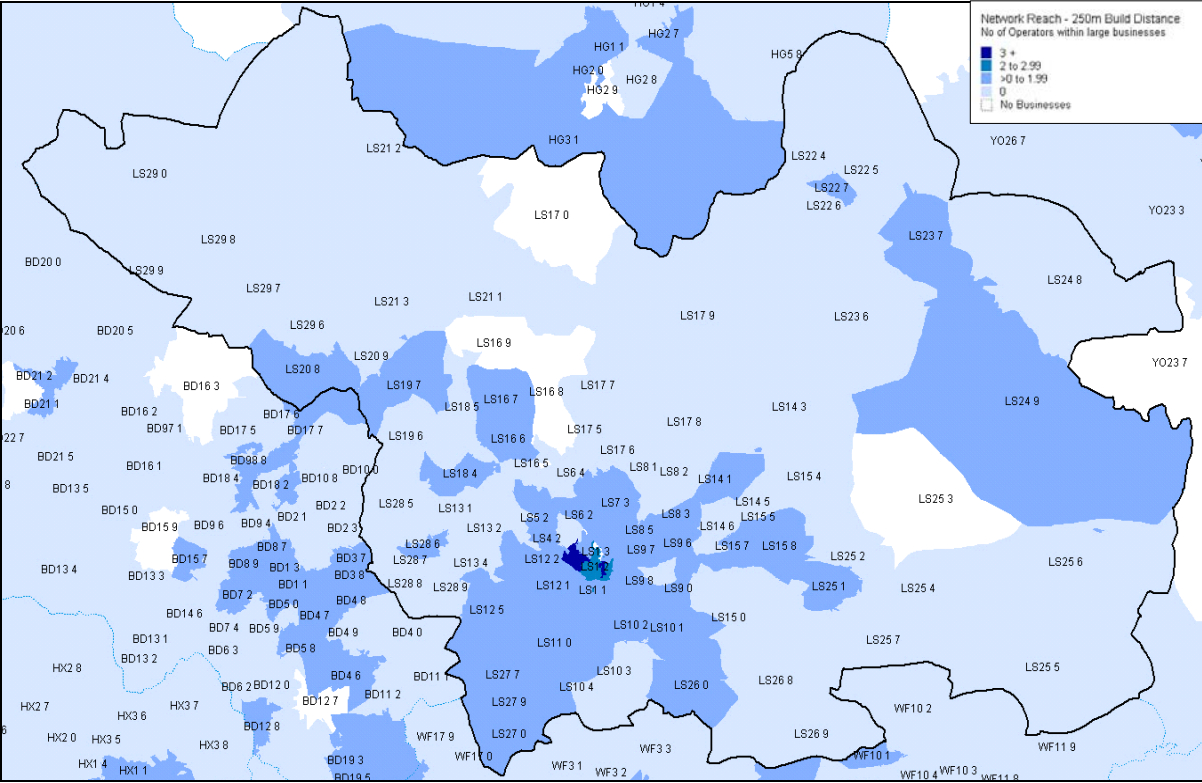
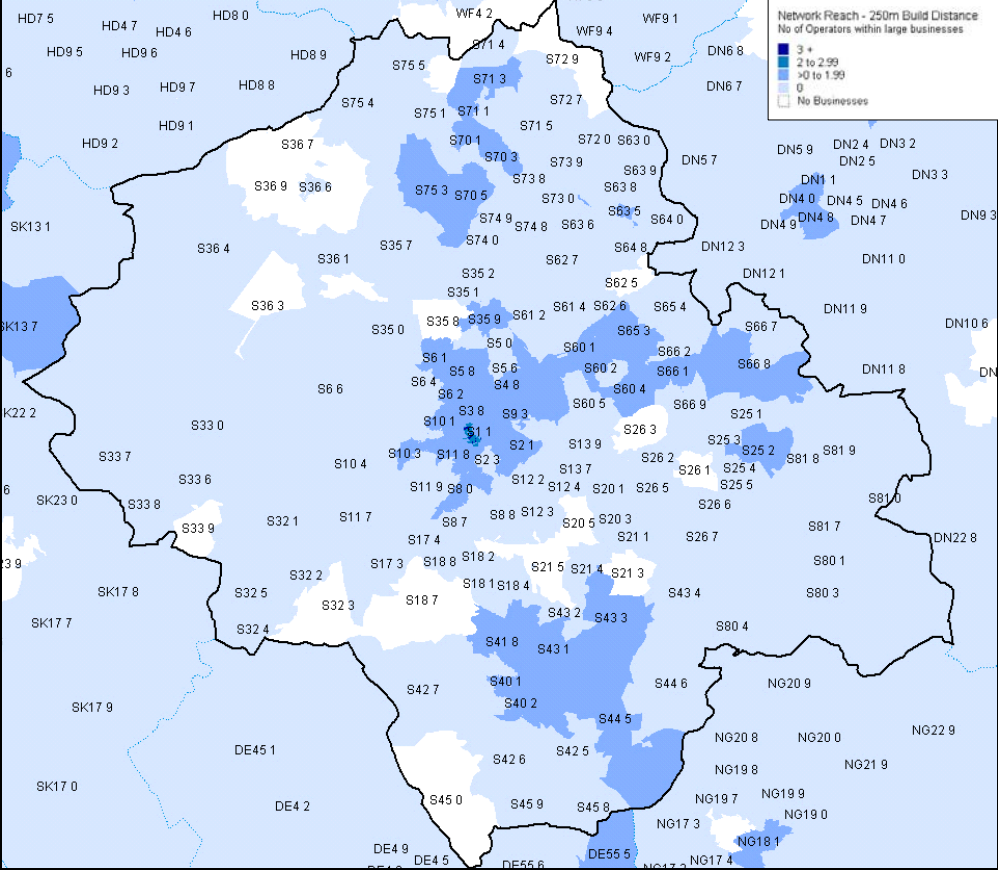


Figure 82 – Number of operators in Sheffield, assuming 250m build distance





Annex 8

# Aggregation nodes and geographic trunk analysis

A8.1 This annex sets out details of Ofcom’s proposed aggregation nodes and geographic analysis of trunk segments between those aggregation nodes.

Figure 84: Proposed aggregation nodes and interconnection analysis

TIER 1 NODES	AGGREGATION NODES	COMMUNICATIONS PROVIDER							
		1	2	3	4	5	6	7	8
1 ABERDEEN CENTRAL NODE	ABERDEEN	n	y	n	n	n	n	n	n
2 BISHOPS STORTFORD	BISHOPS STORTFORD	n	y	n	n	n	n	n	n
3 BIRMINGHAM	BIRMINGHAM	y	y	y	y	y	y	y	y
4 BIRMINGHAM ERDINGTON	BIRMINGHAM	y	y	y	y	y	y	y	y
5 BRIGHTON WITHDEAN	BRIGHTON	n	y	y	y	y	y	y	y
6 BRISTOL CTE	BRISTOL	y	y	y	y	y	y	y	y
7 CAMBRIDGE TOWN CODE	CAMBRIDGE	n	y	y	n	y	y	y	y
8 CAMBRIDGE TRUNK	CAMBRIDGE	n	y	y	n	y	y	y	y
9 CARLISLE RS	CARLISLE	n	y	y	n	n	y	y	y
10 CARDIFF STADIUM	CARDIFF/NEWPORT	n	y	y	n	n	y	y	y
11 CHELMSFORD	CHELMSFORD	n	y	y	n	n	y	y	y
12 Comley	OXFORD	n	y	n	n	n	y	y	y
13 Coventry	COVENTRY	n	y	y	n	n	y	y	y
14 CLYDE VALLEY	CLYDE VALLEY/GLASGOW	y	y	y	n	n	y	y	y
15 CRAWLEY SUSSEX	CRAWLEY	n	y	n	n	n	y	y	n
16 DONCASTER DON	DONCASTER	n	y	n	n	n	y	y	n
17 EDINBURGH DALKEITH	EDINBURGH	y	y	y	y	y	y	y	y
18 EDINBURGH CAPITAL RS	EDINBURGH	y	y	y	y	y	y	y	y
19 EDINBURGH MUSSELBURGH	EDINBURGH	n	y	y	n	y	y	y	y
20 EARLSDON	COVENTRY	n	y	y	n	n	y	y	y
21 GUILDFORD	GUILDFORD	n	y	n	n	n	y	y	y
22 GLOUCESTER TE	GLOUCESTER	n	y	y	n	n	y	y	y
23 GLASGOW DIAL HOUSE COMPLEX	CLYDE VALLEY/GLASGOW	n	y	y	n	n	y	y	y
24 IRVINE BOURTREE TRS AREA 2	IRVINE	n	n	n	n	n	n	n	n
25 IPSWICH	IPSWICH	y	y	y	y	y	y	y	y
26 LONDON MILE END	LONDON	y	y	y	y	y	y	y	y
27 LONDON BISHOPSGATE	LONDON	y	y	y	y	y	y	y	y
28 FARADAY	LONDON	y	y	y	y	y	y	y	y
29 LONDON POPLAR	LONDON	y	y	y	y	y	y	y	y
30 LONDON HARLESDEN	LONDON	y	y	y	y	y	y	y	y
31 LONDON ILFORD SSC	LONDON	y	y	y	y	y	y	y	y
32 LONDON MAIDA VALE	LONDON	y	y	y	y	y	y	y	y
33 LONDON MUSEUM	LONDON	y	y	y	y	y	y	y	y
34 LONDON WOODGREEN SSC	LONDON	y	y	y	y	y	y	y	y
35 LONDON COLINDALE SSC	LONDON	y	y	y	y	n	y	y	y
36 LONDON POTTERS BAR	LONDON	y	y	n	n	n	n	n	n
37 LONDON REDHILL	CRAWLEY	y	y	n	n	n	n	n	n
38 LONDON MAIN NETWORK ELTHAM RS	LONDON	y	y	n	n	n	n	n	n
39 LONDON CROYDON SSC	LONDON	y	y	y	y	y	y	y	y
40 LONDON KINGSTON SSC	LONDON	y	y	y	n	y	y	y	y
41 LONDON COVENT GARDEN	LONDON	y	y	y	y	y	y	y	y
42 LONDON SOUTHBANK	LONDON	y	y	y	y	y	y	y	y
43 LONDON WATFORD HERTS	LONDON	y	y	n	n	n	y	y	n
44 Woodwich	LONDON	y	y	y	y	y	y	y	y
45 LONDON EALING SSC	LONDON	y	y	y	y	y	y	y	y
46 LEICESTER TE	LEICESTER	n	y	n	n	n	y	y	y
47 LUTON	LUTON	n	y	n	n	n	y	y	n
48 LEEDS WESTGATE ATE	LEEDS	n	y	n	n	n	y	y	n
49 LIVERPOOL TK	LIVERPOOL	n	y	n	n	n	y	y	n
50 MILTON KEYNES	MILTON KEYNES	n	y	n	n	n	y	y	n
51 MANCHESTER DIAL HOUSE	MANCHESTER	n	y	n	n	n	y	y	n
52 NEWPORT GWENT DOS RD	CARDIFF/NEWPORT	n	n	n	n	n	n	n	n
53 NOTTINGHAM SHERIFF	NOTTINGHAM	n	y	n	n	n	y	y	n
54 NORTHAMPTON	NORTHAMPTON	n	y	n	n	n	y	y	n
55 NEWCASTLE UPON TYNE HADRIAN	NEWCASTLE	n	y	n	n	n	y	y	n
56 OXFORD TE	OXFORD	n	y	n	n	n	y	y	n
57 PRESTON ARKWRIGHT LANCs	PRESTON	n	y	n	n	n	y	y	n
58 COSHAM TE/PORTSMOUTH TRUNK TE	PORTSMOUTH/SOUTHAMPTON	n	y	n	n	n	y	y	n
59 READING	READING	n	y	n	n	n	y	y	n
60 SALISBURY SARUM TRUNK	SALISBURY	n	n	n	n	n	n	n	n
61 SHEFFIELD ELDON HOUSE	SHEFFIELD	n	y	n	n	n	y	y	n
62 SLOUGH ATE	SLOUGH	n	y	n	n	n	y	y	n
63 SOUTHAMPTON TOWN CODE	SOUTHAMPTON/PORTSMOUTH	n	y	n	n	n	y	y	n
64 SWINDON	SWINDON	n	y	n	n	n	y	y	n
65 WARRINGTON	WARRINGTON	n	y	n	n	n	y	y	n
66 WOLVERHAMPTON	WOLVERHAMPTON	n	y	n	n	n	y	y	n
67 YORK	YORK	n	y	n	n	n	y	y	n

Source: Ofcom

Note: Figures refer to number of CPs (other than BT) that are located within 10km reach of at least one Tier 1 node within a particular aggregation node.















## Annex 9

# Product market definition: end user research<sup>178</sup>

## Introduction

A9.1 This Annex summarises the analysis of the results of the end-user research we have conducted as part of this market review. Section 1 provides a broad overview of the end-user research in terms of timings and process. Section 2 describes in more detail the overall methodology used to develop questions presented to respondents in the questionnaire for the SSNIP test. Section 3 then describes our approach to analysing the results of SSNIP questions, which is the main focus of this Annex. Section 4 then presents the main results of the end-user research and our analysis and interpretation of those results for market definition purposes.

## 1. Background

A9.2 Ofcom commissioned market researchers Holden Pearmain to undertake end-user research of business connectivity users. The questionnaire was sought to inform our market definition objectives in particular likely responses to changes in relative price changes based on a SSNIP (the overall methodology for this is explained further below). Prior to finalising the questionnaire, Ofcom informally consulted Communication Providers for feedback. A small pilot was also undertaken in the field to gauge end-users' knowledge both in relation to the characteristics of the services they currently use and the wider market available.

A9.3 Having finalised the questionnaire, the fieldwork was conducted during the first quarter of 2007. Ofcom conducted this fieldwork in two stages with a break between stages one and two to allow for review of preliminary results. This was to allow for any necessary refinements to ensure that the questionnaire would provide the most meaningful information possible.

A9.4 To ensure representative samples, the research was conducted across various sizes of business and sectors and by geographic location. To qualify for the questionnaire respondents had to have at least one business connectivity service and there were a number of questions to ensure that the respondent had a good understanding of leased lines technology and played a primary or advisory role in purchasing those leased lines on behalf of their company.

## 2. Overall methodology

A9.5 The key objective of the survey was to assess predicted switching behaviour in particular respondents' likely responses to a SSNIP in relation to one of the leased line or business connectivity services they currently use. We have referred to some of the more general results of the consumer survey in the main Sections of this document. This note primarily focuses on the results of the responses to the SSNIP

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<sup>178</sup> Please note this is drafted as if it were an external Ofcom document. This is to facilitate subsequent drafting of the consultation document. Nevertheless, this is a draft document for discussion purposes and should not be construed as representing Ofcom's view until the conclusions have been signed off internally.

questions and wider questions that might indicate their valuations of particular service characteristics, which will be used as to help inform our market definition.

### Questionnaire methodology

- A9.6 In addition to initial screening and classification questions on respondent by business size, location to ensure representative samples, the end-user research was conducted in four main sections:
1. **Current leased line service features:** this asked further details about the leased line services in terms of expenditure; the connection type(s) used; and communication providers used.
  2. **Current and future service requirements:** this asked general questions about the importance of particular service characteristics and the factors respondents considered when they last procured leased line services.
  3. **Market definition SSNIP testing:** this asked respondents their likely response to a hypothetical price increase by all providers of their current service type<sup>179</sup>. Respondents were asked to indicate the services they would be likely to switch to. If they were unable to name a service, respondents were asked if they were willing to compromise on particular service characteristics. These latter questions were then used to determine possible “candidate” substitutes, i.e. other business connectivity services that respondents might be willing to switch to. This is explained further below.
  4. **Awareness of alternative services and barriers to switching:** this asked whether the respondent source from one or more suppliers; the respondents’ awareness of alternative services and whether they were intending to switch to that service.

### Candidate substitutes

- A9.7 As stated above, the SSNIP questions asked respondents what their likely response to a 10% price rise on their current service. If respondents indicated that they would consider switching, respondents were then asked to name the service (where they had a particular service alternative in mind).
- A9.8 For respondents that could not name a particular service, Ofcom developed a methodology to reveal possible “candidate substitutes”. To do this, the SSNIP questions under section 3 of the questionnaire tested the willingness of the respondent to compromise on particular service characteristics, which included bandwidth, contention, resilience/availability, latency-jitter, and asymmetry. This was intended to reveal their preferences for particular characteristics based on what they current used and their willingness to compromise on those characteristics.
- A9.9 Based on the service characteristics that respondents indicated they would compromise on and their current service these results would then allow Ofcom to subsequently identify “candidate substitutes” services to their current service. This

<sup>179</sup> Earlier questions were used to identify the current service or services that the respondent currently had. Based on quotas to ensure sufficient sample sizes for key business connectivity services, the respondent was then asked SSNIP questions for that specific service. In this research, each respondent completed either one or two SSNIP exercises, for selected business connectivity services amongst their organisation’s portfolio carrying voice traffic and/or data. In total, 843 SSNIP exercises were obtained in order to allow analysis of the services.

relied on a simple algorithm to identify services that could potentially continue to meet the characteristics of their current service. The algorithm would only present alternatives that were consistent with the characteristics the respondent said they would compromise relative to their current service. For example, an end-user with a 1 mbit/s digital SDH circuit willing to compromise on contention but not on symmetry or other service characteristics would have the option of switching to a number of symmetric contended services, such as SDSL. In this way, the results of the end-user research could be used to inform possible preferences of end-users on particular services and potentially reveal any patterns in the services end-user on particular services would be willing to switch to.

- A9.10 However, to design the questionnaire to handle all of the possible permutations for leased lines would result in multiple different service types which would be unrealistic. In order to make this part of the questionnaire more workable, Ofcom sought to reduce the number of possible service descriptions by identifying “baskets” aimed at capturing the key business connectivity services in the market and to test the main breaks in the business connectivity market. Hence these baskets could be identified using one of nineteen possible leased line services listed below.

**Table 67: Different business connectivity baskets**

Service type	Contended / dedicated	Bandwidth break				
		Up to incl. 2 Mbit/s	>2 to 34 Mbit/s (10 Mbit/s)	35 to 154 Mbit/s (100 Mbit/s)	155 Mbit/s	Above 155 Mbit/s (1 Gbit/s)
Analogue	Dedicated	Basket 1				
Digital Leased Lines (SDH/PDH)	Dedicated	Basket 2	Basket 8		Basket 12	Basket 15
Ethernet Leased Lines	Dedicated		Basket 19	Basket 11		Basket 16
ATM/Frame	Dedicated	Basket 3	Basket 9		Basket 13	
	Contended	Basket 5	Basket 10		Basket 14	
SDSL	Dedicated	Basket 4				
	Contended	Basket 6				
ADSL/ Cable Modem	Contended	Basket 7				
Wavelength connectivity services	Dedicated	Basket 17				
VPNs	All combinations possible	Basket 18				

- A9.11 The above baskets include some degree of grouping – in particular for breaks in bandwidths between 2 and 34 mbit/s for digital leased lines (SDH/PDH) and at 155 mbit/s. Ethernet services were captured within the same categories, based on the main increments for bearer circuits of 10, 100 Mbit/s and 1 Gbit/s.



Stage two refinements

- A9.12 As stated above the questionnaire was conducted in two stages to allow for an interim review stage to ensure the questionnaire was capturing meaningful results. At the end of stage one, Ofcom added a further refinement to the questionnaire.
- A9.13 As stated above, the questionnaire results would subsequently allow Ofcom to identify “candidate substitutes” and hence to consider which service (if any) is a close substitute to another. As Ofcom had developed a simple algorithm which automatically generated these “candidate substitutes”, it was considered useful to incorporate this algorithm into the questionnaire.
- A9.14 Therefore, depending on the above start basket and the responses to questions regarding the service characteristics that respondents would compromise on, the respondent was then presented with one or more “candidate substitute” services. For example, if the respondent’s start basket were basket 8 (i.e. 2 to 34 Mbit/s digital leased lines (SDH/PDH)) then there are a number of “candidate substitutes” at that speed. Furthermore, depending on the service features the respondent would compromise on (if any), they were asked whether they would be willing to switch to any of these services. Where the respondent considered more than service as a potential substitute, they were asked which service would be their first preference.

**Formal calculation of the SSNIP test**

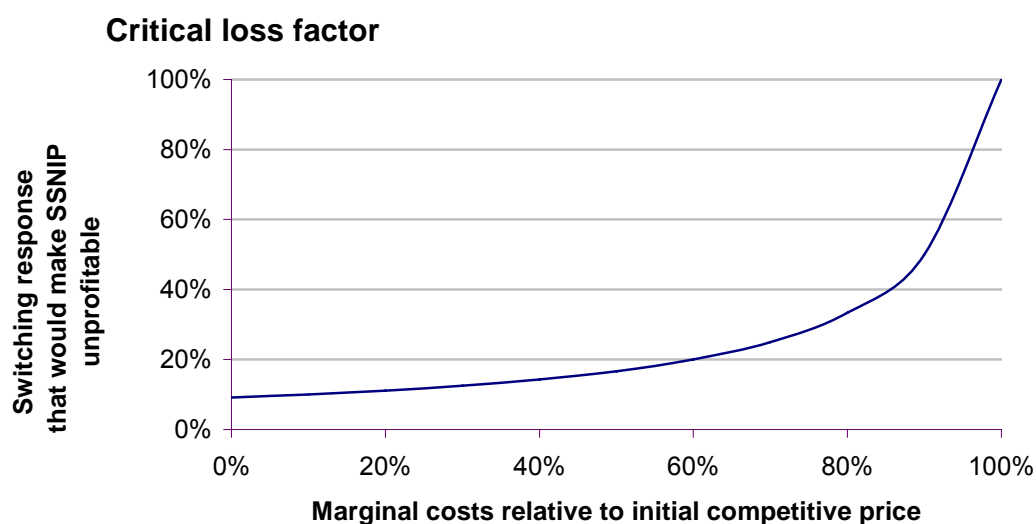
- A9.15 The important question underlying the SSNIP test is the impact that a price increase would have on profitability (i.e. would it be profitable for a hypothetical monopolist of the focal product to impose a 5-10 per cent increase in prices). If a SSNIP were unprofitable, this indicates that the market is wider than the focal product in question and the next closest substitute to that product should be included within the market definition.
- A9.16 The change in profitability will depend on the extent of any loss of net revenue (i.e. this consists of the loss in sales revenues but also takes account of the savings in costs of no longer having to supply those products). In order to assess this change in profitability it is necessary to estimate marginal costs and the impact on revenue (which will depend on the initial starting price, the assumed level of the price rise and the likely reaction of consumers to that price increase).
- A9.17 As the price rises above the competitive level, the hypothetical monopolist’s revenue experiences two conflicting effects. It gains more revenue from consumers paying the increased prices and it loses revenue it previously received from consumers who substitute away from the service as a result of the price rise. Changes in the hypothetical monopolist’s profitability do not only arise from this lost revenue and will tend to overstate the impact of consumers switching away. In addition, it is necessary to take into account the costs the hypothetical monopolist saves from no longer having to supply services to the consumers who substitute away.
- A9.18 In the context of consumer surveys it is helpful to consider the profitability of a SSNIP with reference to the so-called “critical loss factor”. The critical loss factor measures the required percentage reduction in demand for the SSNIP to be unprofitable. If the reduction in demand from a SSNIP is greater than the critical loss factor then the SSNIP will be unprofitable. If it is smaller than the critical loss factor then the SSNIP will be profitable. As the key output of the consumer survey is



the likely change in demand (i.e. extent of consumer switching), the critical loss calculation is therefore a useful way of considering the results of consumer surveys and whether a SSNIP is likely to be unprofitable.

A9.19 The critical loss is calculated as a function of the SSNIP (which in Ofcom’s survey is at the level of 10 per cent) and the ratio of the marginal cost to the current price (i.e. the price before the SSNIP). To provide some context to the potential range of critical loss factors, the Figure below shows the indicative critical loss values based on different ratios of marginal cost to the current price.

**Figure 95a: Indicative critical loss values based on marginal cost to current prices**



Source: Ofcom 2007

A9.20 For example, the above diagram shows that if the marginal cost saved were zero, then a SSNIP of 10 per cent would be unprofitable if demand fell by more than 9 per cent. If the marginal cost represented 80 per cent of the current price, then a SSNIP of 10 per cent would be unprofitable if more than 33 per cent of consumers switched.

A9.21 As stated above, derivation of critical loss factor relies on estimates of appropriate marginal cost/competitive price for leased lines services. In respect of the leased line market because there are multiple services in the market, when it comes to assessing a particular focal product the relevant individual competitive prices and marginal costs are likely to vary in absolute terms by service.

A9.22 It would be impractical for Ofcom to assess individual marginal costs and potential competitive prices for every permutation leased line service (which might vary by technology type, quality of service, bandwidth etc). Ofcom has therefore sought to estimate a plausible range for the critical loss factors based on available data on price/cost relationships for the main leased line services.

A9.23 This approach should be reasonable for the generality of leased line services. This is because, for critical loss purposes, the question is not whether, for example the absolute price or marginal cost of “leased line service A” is similar to “service B”. The issue is whether the difference between the cost/price ratio “service A” is likely to be a similar level to the cost/price ratio of “service B”. For most leased lines services, there should not be significant differences in the competitive

price/marginal cost relationships that it results in significant variations in the estimates of critical loss factors.

- A9.24 In any case, where switching rates potentially fall within the critical loss range, where appropriate Ofcom has sought to estimate the critical loss range in further detail for that service to ensure that the SSNIP analysis is robust.

### Estimates of critical loss factors for leased lines markets

- A9.25 In order to estimate the marginal cost of supplying different leased line services to particular consumer, Ofcom would need to consider the underlying telecommunications and CP components in detail. Ofcom has not sought to model in detail each of these cost components, but has instead based its estimates on information available to it, namely BT estimates of long-run incremental costs (LRIC) of providing traditional interface partial private circuits<sup>180</sup>. Clearly these estimates are reliant on BT's methodology for calculating long-run incremental costs, which may not fully always reflect the costs saved in no longer supplying those customers (i.e. avoided costs).
- A9.26 Nevertheless, BT's LRIC estimates have been used as they represent the best available proxy for costs. Based on assumptions about different length circuits<sup>181</sup> this implies that costs lie in an approximate range of £1,600 to £1,974 per consumer for costs saved by ceasing to supply an individual consumer over the time frame considered by the SSNIP (i.e. 12 months).
- A9.27 Based on an estimated competitive retail price of £2,525 to £2,700 per annum for service 10km PPCs and £3,210 to £4,234 per annum for service 25km PPCs shows that there is potentially quite a wide range of estimates for competitive prices. However, as stated above it is the price/cost ratio that is of interest. Comparing the estimated range of marginal costs of £1,600 to £1,974, the ratio of competitive prices to marginal costs would be between 47 to 63 per cent for retail consumers.
- A9.28 The estimated proportion of marginal costs to prices and the assumed level of the SSNIP allow Ofcom to calculate the critical loss factor. For a SSNIP of 10 per cent to be unprofitable, based on Ofcom's estimates of prices and costs this would suggest that demand needs to fall by more than 16 per cent at the lower end of the range and 21 per cent at the higher end.
- A9.29 Therefore, in the absence of more disaggregated information in terms of exact consumer packages, coupled with the assumption made in the present analysis that current prices are competitively set, Ofcom considers the best estimate of the critical loss range to be 16 to 21 per cent.

### Interpretation of results

- A9.30 Although these survey results have been used to inform Ofcom's market definitions, the consumer survey results used to conduct the SSNIP tests in this note are suggestive rather than definitive. In addition to providing only limited forward-looking analysis, the consumer survey results remain subject to the important caveats as

<sup>180</sup> This is based on BT's CCA statements 2005/06:  
<http://www.btplc.com/Thegroup/Regulatoryinformation/Financialstatements/2006/CurrentCostFinancialStatements2006.pdf>

<sup>181</sup> Ofcom has used 10km and 25km circuits for the purposes of these calculations. The assumptions regarding local ends, distribution and trunk are consistent with Ofcom's analysis of wholesale input prices of PPCs, which are also used as a proxy for competitive prices.

they are based on claimed behaviour as opposed to observed consumer behaviour and despite being based on relatively robust sample sizes they are subject to certain margins of error.

A9.31 The information Ofcom has collected from customer surveys relates to claimed behaviour of consumers who are asked questions about their willingness to continue to use particular services given hypothetical price rises. Given the hypothetical nature of the questions asked it is important to interpret the conclusions of the surveys with care. In general, experience shows that when asked hypothetical questions, consumers tend to overestimate the extent to which they will take actions (i.e. switching away from a supplier in response to a price rise). Therefore, consumer survey evidence based on hypothetical questions may tend to be most useful in indicating the maximum extent to which consumers will react to different events. Ofcom, in developing the consumer survey questionnaire, sought to include questions that helped to identify the extent to which respondents may overestimate the extent to which they act.

A9.32 When interpreting research results, care is also needed in particular for the following reasons:

- as there are multiple leased line service types that Ofcom needed to sample in its questionnaire in some cases analysis of the results can only be indicative as the resulting sample sizes were low. In some cases this reflects the low overall population of respondents that used particular leased line services (e.g. ATM/Frame Relay). In addition, in some cases, some questions were “nested” such that an initial question may yield multiple answers. Hence, even where initial sample sizes were quite high, because questions asked of a smaller subset of the original sample this sometimes resulted in insufficiently large samples for the follow-up questions;
- some technologies may be able to offer a greater range of services and as such it may be that end-users find it difficult to isolate the service that is of interest, e.g. the leased line service may also include value-added managed IT solutions as part of the contract;
- there may be other factors that influence consumer choice, such as whether they have an affinity to a particular service provider’s brand which means that the consumer would be willing to pay a premium to access that brand if it is only available on a sub-set of technologies; and
- In the case of leased lines survey, some potential shortcomings became apparent which meant that the replies cannot be relied on for market definition purposes.

A9.33 On the basis of the above concerns, Ofcom does not intend to rely solely on the results of the consumer survey. Rather it has sought to analyse the results in order to provide indicative views to be used alongside analysis of overall market trends, analysis of relative prices of services and functional comparisons in order to determine an appropriate market definition based on substitution possibilities.

## Results of questionnaire

A9.34 The results of the questionnaire are reported in the following sections.

## Overall levels of switching

**Table 68: Switching results**

	% consider switching	% likely switch
<b>1. Analogue results</b>	61%	47%
<b>2. LBW Digital results</b>	64%	42%
<b>4&amp;6. SDSL results</b>	58%	56%
<b>7A. ADSL- Cable Modem &lt;2Mbits</b>	54%	45%
<b>7B. ADSL- Cable Modem &gt;2Mbits</b>	54%	42%
<b>8. Digital &gt;2 to 34Mbits</b>	68%	54%
<b>11. Ethernet 35 to 154</b>	59%	46%
<b>12. Digital 155Mbits*</b>	55%	22%
<b>15. Digital &gt;155Mbits*</b>	67%	53%
<b>16. Ethernet &gt;155Mbits*</b>	25%	25%
<b>18. VPN combined</b>	33%	20%
<b>18A. VPN up to 2Mbits</b>	50%	19%
<b>18B. VPN 2 to 34Mbits</b>	52%	41%
<b>18C. VPN 35 to 154Mbits*</b>	17%	17%
<b>18D. VPN above 155Mbits</b>	3%	3%
<b>19. Ethernet 2 to 34Mbits</b>	56%	36%

\*Very low sample sizes

Source: Ofcom 2007

A9.35 The above results show the combined results of the SSNIP. In general the overall switching rates are relatively high, typically over 50 per cent. In the case of medium bandwidth digital leased lines (>2 to 34 mbit/s) users, up to 68 per cent of respondents would consider switching.

A9.36 The initial response to the SSNIP question only asked whether respondents would consider switching. In addition, respondents were asked how likely they would be to switch in reality. The second column above therefore shows adjusted switching rates based on only those respondents that were likely to switch in reality.

A9.37 In many cases the switching rates are lower when only those likely to switch are included but overall the switching rates still remain relatively high (in the range 40 to over 50 per cent). Only VPNs and Ethernet show switching rates below 40 per cent level.

### Comparison with critical loss factors

A9.38 Ofcom estimated earlier a range for the critical loss factor of 16 to 21 per cent. With the exception of VPNs, the level of switching for each of the services in Table 69 is clearly above the critical loss factor. For each of these services, this suggests that there would be sufficient substitution to other services to yield a SSNIP unprofitable.

**Table 69: Comparison of claimed switching behaviour with critical loss**

	Sample base	% likely switch	Comparison to critical loss factor (16- 21 %)
<b>1. Analogue results</b>	211	47%	Unprofitable
<b>2. LBW Digital results</b>	90	42%	Unprofitable
<b>4&amp;6. SDSL results</b>	57	56%	Unprofitable
<b>7A. ADSL- Cable Modem &lt;2Mbits</b>	113	45%	Unprofitable
<b>7B. ADSL- Cable Modem &gt;2Mbits</b>	74	42%	Unprofitable
<b>8. Digital &gt;2 to 34Mbits</b>	59	54%	Unprofitable

<b>11. Ethernet 35 to 154</b>	41	46%	Unprofitable
<b>12. Digital 155Mbits*</b>	11	22%	Unprofitable
<b>15. Digital &gt;155Mbits*</b>	12	53%	Unprofitable
<b>16. Ethernet &gt;155Mbits*</b>	12	25%	Unprofitable
<b>18. VPN combined</b>	164	20%	Ambiguous
<b>18A. VPN up to 2Mbits</b>	58	19%	Ambiguous
<b>18B. VPN 2 to 34Mbits</b>	42	41%	Unprofitable
<b>18C. VPN 35 to 154Mbits*</b>	6	17%	Ambiguous
<b>18D. VPN above 155Mbits*</b>	58	3%	Profitable
<b>19. Ethernet 2 to 34Mbits</b>	36	36%	Unprofitable

\*Very low base

Source: Ofcom 2007

- A9.39 The above results indicate that switching for each service would be sufficient to yield a SSNIP unprofitable (i.e. they are above the estimated critical loss range of 16 to 21 per cent). The only service for which a SSNIP would be profitable would be in relation to high bandwidth VPN services at some bandwidths. With respect to other VPN services the results are more ambiguous as the switching rates fall within the critical loss range of between 16 to 21 per cent.
- A9.40 Nevertheless, the overall claimed switching levels for most services are well outside of the range of critical loss factors. Indeed for most services for a SSNIP to be unprofitable would require critical losses factor over 40 per cent, which would imply a ratio of marginal costs to competitive price of over 85 per cent. Therefore, even if there is some uncertainty over the precise critical loss factors to be used, these results should be fairly insensitive to changing the critical loss assumptions.
- A9.41 The above switching rates are based on the initial SSNIP questions. However, based on responses of end-users to follow-up questions suggests that some adjustments should be made to these switching rates. For example, in some cases where respondents were asked to name a service that they might switch to or when presented with "candidate substitutes" indicated that they were more likely to accept the price rise on their current service instead. In some cases respondents also declined any of the switching options presented to them.
- A9.42 If the above switching rates were adjusted to take into account these two effects then would reduce the reported switching rates on average by nearly 10 percentage points and in some cases by up to 20 percentage points. Adjusting the above figures to take this into account would not however affect the results for the services where a SSNIP was unprofitable (i.e. this result still holds with adjusted switching rates). In the case of VPNs, whereas above the results are somewhat ambiguous, this adjustment to the results would provide a clearer result that a SSNIP would be profitable, indicative that the market is no wider than VPNs. Only for 2 to 34 VPN would a SSNIP be profitable the adjusted data would still imply a switching rate of 39 per cent, which is at the lower end of the critical loss range.
- A9.43 Given that the above results generally indicate that each product falls within a wider market, the remainder of this paper is mainly concerned with analysing the questionnaire results to provide an indicative view of the products and services that might be grouped together to form potential business connectivity markets. The final section of this paper does however consider some sensitivity analysis in relation to the above switching rates for example to take account of possible migration effects.

## Switching preferences between services

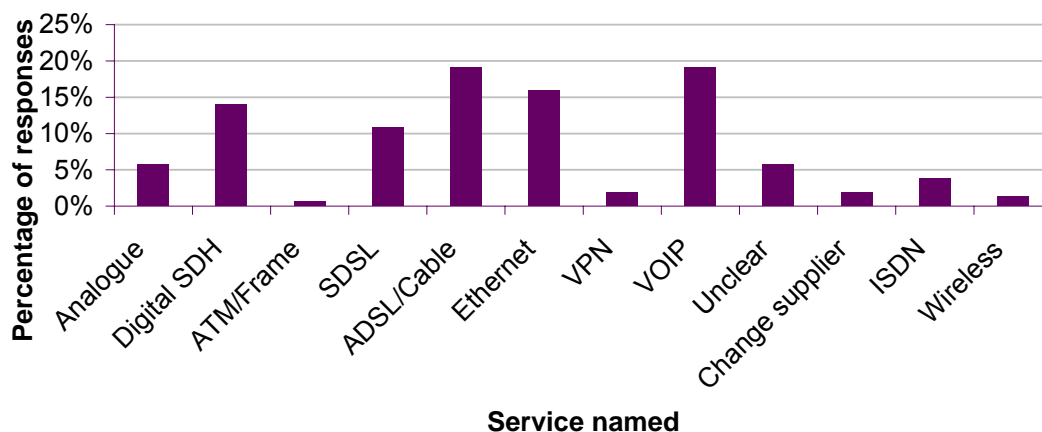
- A9.44 This section considers possible available substitutes based on the services respondents were able to name or based on the service characteristics and associated candidate substitutes respondents were presented with.
- A9.45 Consistent with Ofcom's approach of seeking to define business connectivity market(s) on the basis of service characteristics rather than specific technologies, this section focuses on possible breaks in the market by bandwidth, contention, symmetry, latency-jitter and resilience. However, in some cases, for example where respondents were asked to name services they were switched to or where respondents were presented with "candidate substitutes" individual services have been referred to. Nevertheless, where ever possible the intention is to draw conclusions based on similar service characteristics rather than relying on individual products in the market to inform possible breaks.

### Switching results: named services

- A9.46 As stated previously, where respondents said that they would consider switching, they were asked to name the service that they would switch to. Figure 96 below shows the overall results in terms of the different services named<sup>182</sup>.

**Figure 96: Services that respondents were willing to switch to**

#### Respondents that named specific services



Source: Ofcom 2007

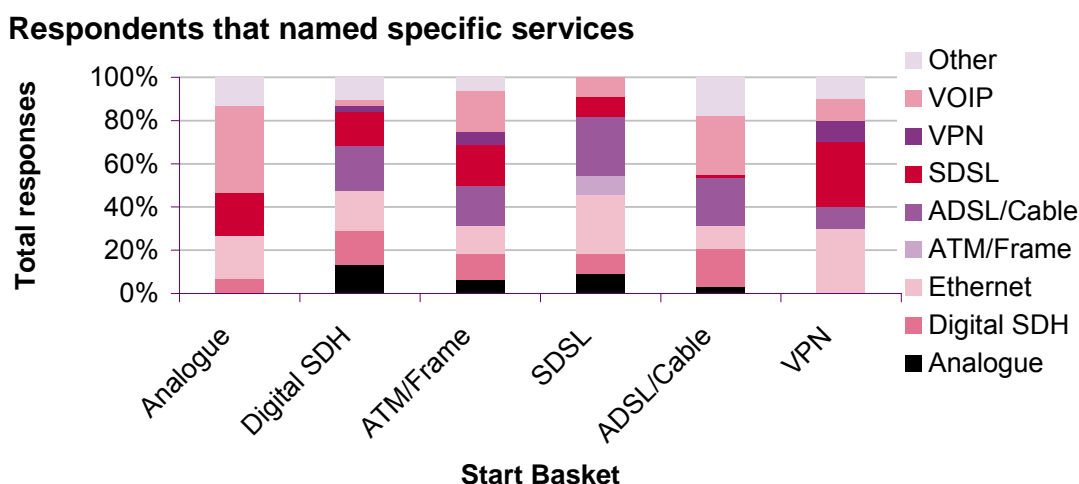
- A9.47 Overall, ADSL/Cable and VOIP services were the most popular services named by respondents, in both cases 19 per cent of respondents named these services as the ones they would switch to. Ethernet and Digital SDH were at 16 and 14 per cent respectively were the next most popular responses.
- A9.48 The above results show that potentially both contended and dedicated services were selected. For example, SDSL and ADSL (which are generally contended) are selected in some cases and analogue, digital SDH or Ethernet (dedicated connections in others). ATM/Frame relay was not selected by many respondents, which perhaps reflects this being an older service and one in general decline.

<sup>182</sup> Due to the open nature of the question asked, there was a degree of interpretation necessary in the respondents answers to this question. For example, some respondents referred to leased line services, which Ofcom recorded as a willingness to switch to any of digital SDH, Ethernet or analogue leased line services.

A9.49 VPNs did not feature strongly in the services respondents named. This may reflect the fact that a number of respondents already have VPNs within their business connectivity portfolio and either use their leased line as the underlying connectivity or require their leased line services for alternative uses. Unfortunately, it is not possible from the above results to determine the extent to which, if any, of these effects is significant.

A9.50 The above analysis presented the switching results irrespective of the respondents start basket. Figure 97 below considers in more detail the services that respondents named based on their start baskets.

**Figure 97: Services that respondents were willing to switch to (% splits by starting basket)**



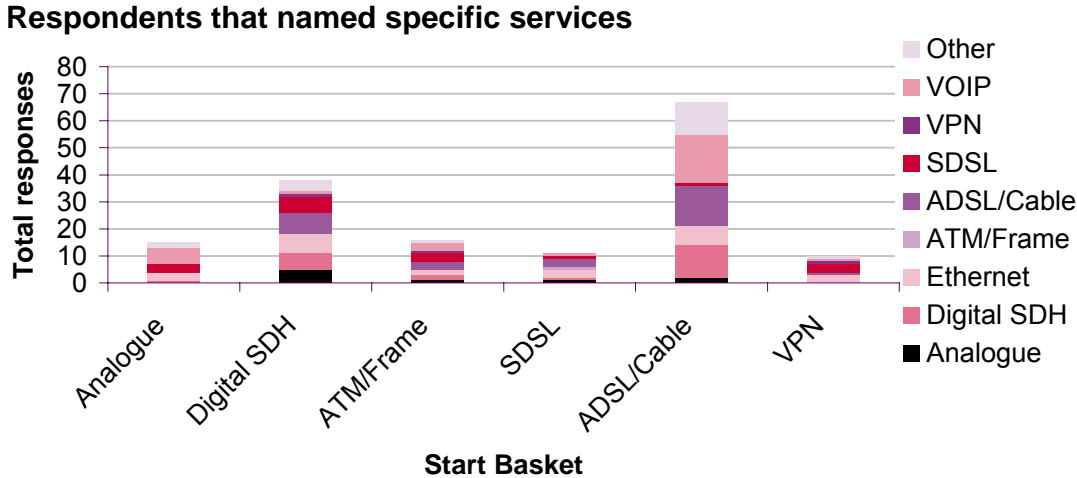
Source: Ofcom 2007

A9.51 In some cases the above results are subject to very small sample sizes. For this reason it has been necessary to group the services at a more “aggregated level” which ignore bandwidth increments for particular service types. Nevertheless, the sample sizes remain low as shown in Figure 98 below and therefore the results should be interpreted as indicative only<sup>183</sup>.

<sup>183</sup> For this reason, Ofcom has only reported digital SDH and ADSL/Cable results based on the figures below. In the case of respondents with Ethernet services, none of these were able to name a service that they would switch to and therefore no results are shown.



**Figure 98: Services that respondents were willing to switch to (total responses by starting basket)**



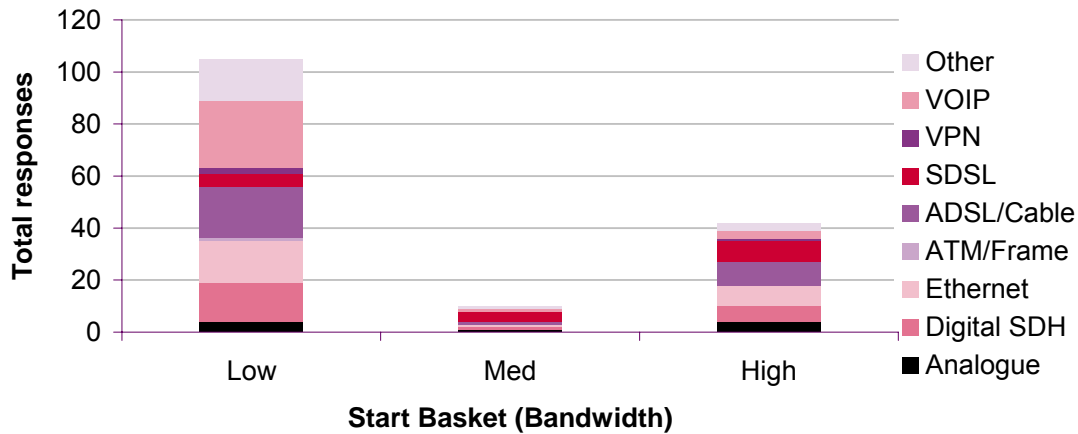
Source: Ofcom 2007

- A9.52 The above results show that respondents with analogue services and ADSL/Cable are the main categories that account 80 per cent of the respondents that named VOIP as the service they would switch to. In the case of respondents with ADSL/Cable connections there is a question mark as to whether this could be classed as genuine switching behaviour as a VOIP service could be delivered over an ADSL/Cable connection. In other words, the claimed switching is with respect to the way in which the business connectivity is used rather than changing the underlying infrastructure.
- A9.53 For ADSL/Cable, around one quarter would switch to a dedicated leased line (analogue, Ethernet or digital SDH). A number of other respondents would remain with ADSL/Cable services in some form. This could be interpreted in two ways. Either that respondents switching to another speed ADSL/Cable connection or that they would not in fact switch services.
- A9.54 For digital SDH services, around 45 per cent would remain on a dedicated leased line, split roughly equally between switching to analogue or Ethernet or a higher bandwidth digital SDH service. Nevertheless, a number of respondents also named (contended) ADSL and SDSL services. Though for the latter SDSL services, it is unclear whether these would be contended services.



**Figure 99: Named services (by speed of starting basket)**

**Respondents that named specific services**

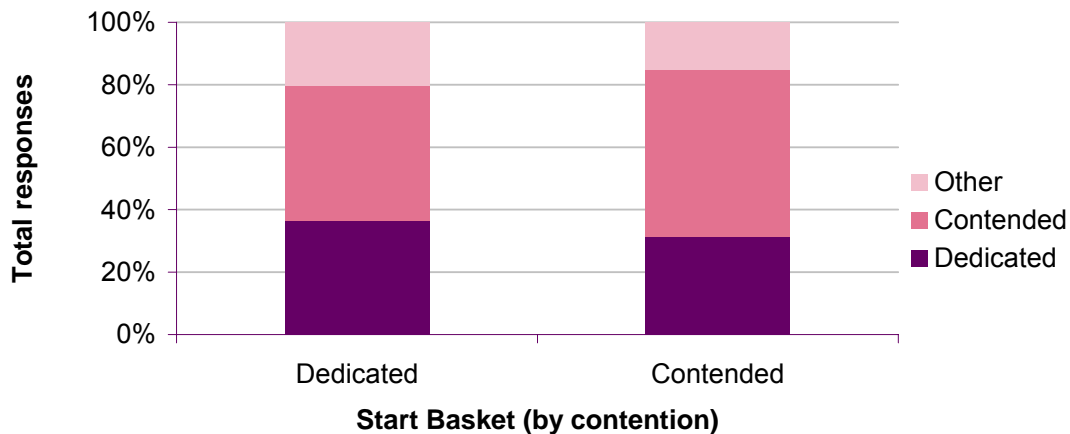


Source: Ofcom 2007

A9.55 Grouping together the different starting baskets by bandwidths<sup>184</sup> shows that xDSL services remain popular with almost one quarter of respondents with low bandwidth connections selecting ADSL or SDSL services. While around 38 per cent selected a dedicated leased line service such as analogue, digital SDH or Ethernet. However, compared with higher bandwidth services there does not appear to be very clear differences in the services respondents named. The most significant different was that VOIP services were named more often than other services. In addition, a higher proportion of respondents on higher bandwidths named SDSL and (to a lesser extent) analogue services, which potentially suggests a willingness to switch to lower bandwidth services.

**Figure 100: Named services (by contention of start basket)**

**Respondents that named specific services**



Source: Ofcom 2007

A9.56 The figure above considers named services splitting the start baskets for those respondents with either dedicated or contended services. In some cases,

<sup>184</sup> The relevant breaks are at 2 mbit/s for low to medium and 155 mbit/s for medium to high.

respondents named services that could be either dedicated or contended, which have been grouped into the “Other” category.

- A9.57 The results tend to suggest that respondents already with contended services are likely to select other contended service types. In relation to respondents with dedicated services, the result is split 50:50 between dedicated and contended services, suggesting a willingness to switch to contended services.
- A9.58 Overall, the above results did not clearly show a strong relationship in switching to a particular service based on particular service characteristics. Although the commonly named services were either dedicated leased lines services or xDSL services. In the case of those already on ADSL/Cable and analogue connections VOIP was also named as an important service for respondents with requirements for voice connectivity.

### Algorithm switching results

- A9.59 This section presents the results of the algorithm from stage 2 of the questionnaire. As explained earlier this presented respondents with a range of “candidate substitutes” based on the answers respondents gave to questions regarding service characteristics they might be willing to compromise on in response to a SSNIP.
- A9.60 This was considered important given that in some instances respondents could not name a particular service outright. Rather than present respondents with a list of services, which might lead respondents to select particular services, the above method sought to reveal their preferences based on the characteristics they would compromise on.
- A9.61 Respondents presented with candidate substitutes were asked whether they would be willing to switch to any of those services. If so, a further question was asked which of those services would be their first preference. Section therefore presents the most common “first preference” service for different starting baskets (start basket representing the current connection the end was on). Again these results are only indicative due to low sample sizes in some cases.

**Table 70: First preference end-baskets (stage 2 only)**

Start Basket	Speed	End-basket	Speed
<b>Analogue</b>	Low	Digital leased lines (SDH/PDH)	Low
<b>Digital SDH</b>	Low	Ethernet	Low
	Med	Ethernet	Low
	High	ADSL/Cable Modem	Low/Med
	High	Digital leased lines (SDH/PDH)	High
<b>Ethernet</b>	Low	Digital leased lines (SDH/PDH)	Med
	Med	Contended ATM/Frame Relay	Med
<b>ADSL/Cable</b>	Low/Med	Contended SDSL	Low
<b>Dedicated SDSL</b>	Low	ATM/Frame Relay	Low
<b>ATM/Frame</b>			
	Low	Contended ATM/Frame	Med

		Relay	
	Med	Contended ATM/Frame Relay	Med
<b>Contended ATM/Frame</b>	High	Digital leased lines (SDH/PDH)	High

Source: Ofcom 2007

- A9.62 The above services could be interpreted as indicating the next closest substitute for a particular product. Due to the low sample size, it would not be appropriate to draw detailed conclusions for each individual start basket. However, the results tend to suggest that predominantly there is switching between analogue, digital SDH and Ethernet services, such that there is a general preference for dedicated leased line services within this group. The exception to this was respondents with 155 mbit/s digital leased lines that chose ADSL/Cable and medium bandwidth Ethernet who chose ATM/Frame relay.
- A9.63 Respondents with ATM/Frame relay tended to select other services of this type. ADSL/Cable would switch to SDSL whereas SDSL would switch to ATM/Frame (this might suggest that asymmetry is a relevant concern). The paper returns to the issue of symmetry later, where this service characteristic is considered in more detail.
- A9.64 In the questionnaire respondents were also presented with potentially more than one “candidate substitutes” service. Therefore, an alternative way to consider the “next closest” substitute is in terms of the most common service that respondents said they would switch to. For example, the largest number of respondents with low bandwidth digital leased lines (SDH/PDH) named Ethernet as their first preference service. However, across all low bandwidth digital leased lines more respondents overall said that they would be willing to switch to analogue even if for some this was not necessarily their first preference. The full results are shown below by start basket (where available).

**Table 71: Most common services respondents would also switch to (stage 2 only)**

Start Basket	Speed	End-basket	Speed
<b>Analogue</b>	Low	Digital leased lines (SDH/PDH)	Low
<b>Digital SDH</b>	Low	Analogue	Low
	Med	Ethernet	Low
	High	ADSL/Cable Modem	Low/Med
	V.High	Digital leased lines (SDH/PDH)	High
<b>Ethernet</b>	Low	Digital leased lines (SDH/PDH)	Med
	Med	Contended ATM/Frame Relay	Med
	High	Digital leased lines (SDH/PDH)	High
<b>ADSL/Cable</b>	Low/Med	Contended SDSL	Low
<b>Dedicated SDSL</b>	Low	ATM/Frame Relay	Low
<b>Contended SDSL</b>	Low	Contended ATM/Frame Relay	Low
<b>ATM/Frame</b>	Low	ATM/Frame Relay	Med
	Med	Contended ATM/Frame Relay	Med
	High	Digital leased lines (SDH/PDH)	High

Source: Ofcom 2007

A9.65 Overall the above results tend to reinforce the previous conclusions – namely that respondents on dedicated leased lines tend to switch to those service types (although other services aren't completely ruled out for example Medium Bandwidth Ethernet users selected ATM/Frame Relay). SDSL users do not appear willing to compromise on symmetry. ATM/Frame relay would tend to prefer to switch to other ATM/Frame services (at least at low/medium) bandwidths.

#### “Candidate substitutes” implied from stages 1&2

A9.66 As explained previously it was only during stage 2 of the questionnaire that respondents were actually presented with the “candidate substitute” services based on Ofcom's algorithm. The results of responses to the SSNIP under stages 1 are still useful as it is possible to assess the candidate substitutes services that respondents would have been presented with based on this algorithm. The table below provides combined analysis from stages 1&2

**Table 72: Candidate substitutes based on stages 1&2**

Start basket (sample size)	Top baskets* (what would they switch to - based on the algorithm or those that named a service)		
	1st	2nd	3rd/ Joint 2 <sup>nd</sup>
<b>1. Analogue</b> (210)	Digital leased lines (SDH/PDH) Up to 2Mbit/s 36 %	ADSL/Cable Modem 26 %	Digital leased lines (SDH/PDH) >2 to 34 Mbits 16 %
<b>2. Digital leased lines (SDH/PDH) Up to 2Mbit/s</b> (88)	Ethernet Up to 2Mbit/s 26%	Ethernet 2 to 34 Mbit/s 21%	Contended SDSL 21%
<b>8. Digital leased lines (SDH/PDH) &gt;2 to 34 Mbits</b> (78)	Ethernet Leased lines 2 to 34 Mbits/s 31%	Contended ATM/Frame Relay >2 to 34 Mbits 8%	4 baskets equal
<b>12 (Caution v. low base). Digital leased lines (SDH/PDH) 155 Mbits</b> (14)	ADSL/Cable Modem 20%	Multiple baskets equal	-
<b>15. Digital leased lines (SDH/PDH) above 155 Mbits</b> (15)	Digital leased lines (SDH/PDH) 155 Mbits 43%	4 baskets equal	-
<b>19. Ethernet 10 Mbit/s</b> (36)	Digital leased lines (SDH/PDH) >2 to 34 Mbits 54%	VPN 15%	-
<b>11. Ethernet 100 Mbit/s</b> (113)	Contended ATM/Frame Relay >2 to 34 Mbits 30%	4 baskets equal	-
<b>16. Ethernet above 155 Mbits</b> (16)	Digital leased lines (SDH/PDH) 155 Mbits 43%	4 baskets equal	-
<b>4&amp;6. SDSL</b> (70)	Contended ATM/Frame Relay Up to 2Mbit/s 21%	Contended ATM/Frame Relay >2 to 34 Mbits 15%	-
<b>7A. ADSL/Cable Modem Up to 2Mbit/s</b> (113)	Contended SDSL 45%	Contended ATM/Frame Relay Up to 2Mbit/s 21%	Contended ATM/Frame Relay >2 to 34 Mbits 19%
<b>7B. ADSL/Cable Modem &gt;2 to 34 Mbit/s or more</b> (113)	Contended SDSL 31%	Contended ATM/Frame Relay >2 to 34 Mbits 19%	Contended ATM/Frame Relay Up to 2Mbit/s 19%
<b>18. VPN Combined</b> (164)	VPN 90 %	VOIP 5 %	Baskets equal 5 %

Source: Ofcom 2007

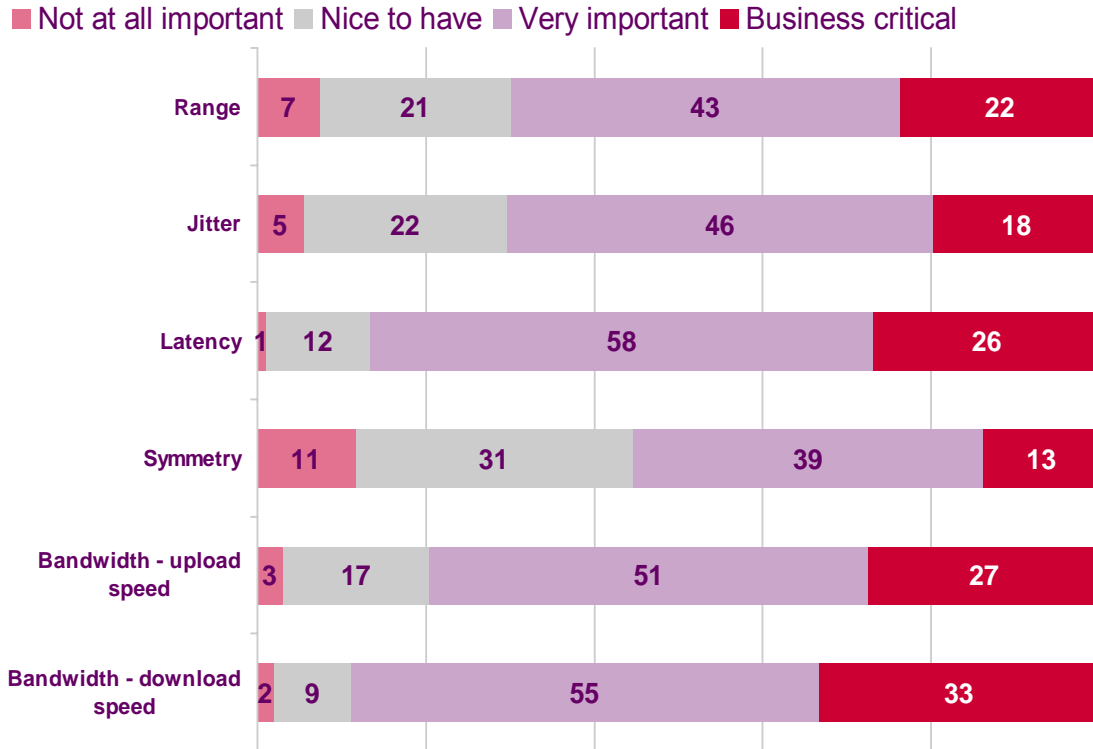
A9.67 The above results tend to confirm the results presented above with respect to the stage 2. Due to the larger sample sizes available, this provides greater confidence that these results are relatively robust. However, it should be noted that the results from stage 1 only present the “candidate substitutes” that would have been generated by the algorithm based on end-users responses to questions on service characteristics they would compromise on. As these “candidate substitutes” were not actually presented to respondents during stage 1 (unlike in stage 2), these results are only indicative or potential close substitutes.

A9.68 Given the above stage 1&2 results in the final part of this paper to analyse this results by the different service characteristics (rather than individual baskets) in order to consider whether each a particular service characteristic might inform a break in the market. This analysis is further supplemented by some more general results of the end-user research which asked some more general questions with respect to service characteristics.

### Assessment by bandwidth

A9.69 Based on our initial analysis of digital SDH leased lines, Ofcom identified that the main breaks in the market were potentially at 2, 34 and 155 mbit/s and above. In relation to Ethernet the increments were for 10 and 100 mbit/s and 1 gbit/s and above. The market review therefore sought to test whether respondents tended to stay on similar speed bandwidths and in general whether they would rather compromise on other service features first.

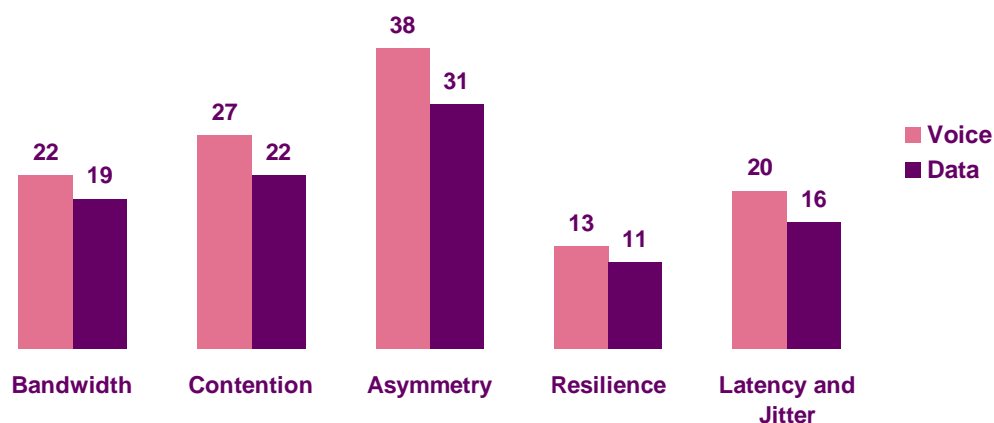
Figure 101: General importance of service characteristics



Source: Ofcom 2007

A9.70 In general terms, bandwidth was rated among the most important service features (33% rated it business critical / 55% very important) – although resilience, availability and contention were rated as most important. Going forward end-users ranked upload/download speeds as the most important characteristics.

Figure 102: Compromise on service features to avoid 10% price rise



Source: Ofcom 2007

- A9.71 In relation to the SSNIP results, between 19-22% switchers would compromise on bandwidth. This is 3rd ranking in terms of service characteristics that respondents would compromise on. Therefore, although bandwidth is among the most important service features there appears to be some willingness to compromise on this service characteristic in response to relative price changes.
- A9.72 The question is whether the analysis of “candidate substitutes” tends to agree with this result. Table 73 below considers the results from stages 1&2, presented previously.

**Table 73: Candidate substitutes based on stage 1&2 results**

Description	Top baskets* (what they might switch to - based on the algorithm or those that named a service)		
	1st	2nd	3rd/ Joint 2nd
Analogue	Digital leased lines (SDH/PDH) 36 %	ADSL/Cable Modem 26 %	Digital leased lines 16 %
Digital leased lines (SDH/PDH)	Ethernet 26%	Ethernet 21%	Contended SDSL 21%
SDSL	Contended ATM/Frame Relay 21%	Contended ATM/Frame Relay 15%	Contended ATM/Frame Relay 15%
ADSL/Cable Modem	Contended SDSL 45%	Contended ATM/Frame Relay 21%	Contended ATM/Frame Relay 19%
ADSL/Cable Modem	Contended SDSL 31%	Contended ATM/Frame Relay 19%	Contended ATM/Frame Relay 19%
Digital leased lines (SDH/PDH)	Ethernet Leased lines 31%	Contended ATM/Frame Relay 8%	4 baskets equal
Ethernet	Contended ATM/Frame Relay 30%	4 baskets equal	-
Digital leased lines (SDH/PDH)	ADSL/Cable Modem 20%	Multiple baskets equal	-
Digital leased lines (SDH/PDH)	Digital leased lines (SDH/PDH) 43%	4 baskets equal	-
Ethernet	Digital leased lines (SDH/PDH) 43%	4 baskets equal	-
Ethernet	Digital leased lines (SDH/PDH) 54%	VPN 15%	-

Source: Ofcom 2007

A9.73 The colours in the above table represent low (green), medium (amber) and high (red) bandwidth services. As a general result, as respondents tended not only to compromise on bandwidth which might indicate their first preference that they would prefer to remain on similar speed services. This is reinforced by the higher overall importance that respondents placed on bandwidth now and going forward.

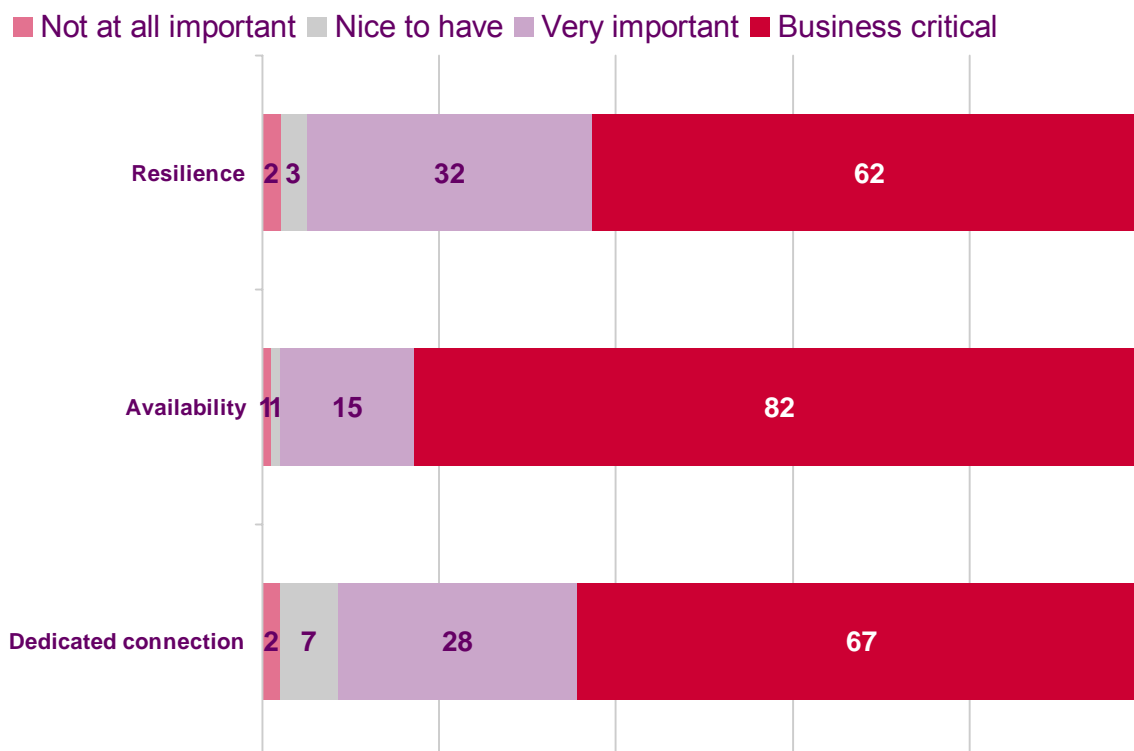
A9.74 Indeed, although only indicative, the results from stage 2 (alone) also tended to suggest that respondents rarely compromised on bandwidth (although they sometimes would select higher bandwidth services when compromising or switching to other services).

### Assessment by resilience/availability

A9.75 In general terms, resilience was rated in top three of important service features (62% rated it business critical / 32% very important). Availability was rated as most important service features (82% rated it business critical / 15% very important). Going forward resilience and availability along with bandwidth as the service characteristics of increasing importance.

**Figure 103: General importance of service characteristics**





Source: Ofcom 2007

A9.76 Figure 103 presented above under the section on bandwidth showed that resilience was the service characteristics that respondents were least likely to compromise on with only 11-13% of respondents compromising in this area.

A9.77 In terms of further analysis of the stage 1&2 results, while some services may have greater inherent resilience due to the self healing nature of the ‘core’ network (for example SDH services) any business connectivity service can be provided with underlying resilience or enhanced availability either by providing “back-up” leased lines or contractual guarantees and return to service times. Availability and resilience between different services is normally at very high levels (for instance Ethernet and digital SDH leased lines have broadly similar availability levels – albeit with higher standards for the latter).

A9.78 The main conclusion from the above analysis is that resilience and availability are very important service characteristics which may inform a break-in the market. However, it is not possible from the end-user research to conclude upon potentially very subtle differences in service levels available by service type.

### Assessment by latency-jitter

A9.79 In general terms latency rated fairly highly in importance (26% rated it business critical / 58% very important). Jitter was not considered so important (18% rated it

business critical / 46% very important). Going forward latency/jitter not becoming significantly more important.

- A9.80 Of service characteristics, there was generally a lower likelihood of compromising on latency/jitter (only 16-20% of switchers would compromise on this aspect). Therefore, after bandwidth, latency/jitter was the service characteristic respondents were least likely to compromise on.
- A9.81 Table 74 below shows for different start baskets the implications for the candidate substitutes.

**Table 74: Candidate substitutes based on stage 1&2 results**

Description	Service they were presented with (based on stage 1&2 responses)	
	Critical	Not critical
VPN Up to 2Mbit/s	0%	100%
ADSL/Cable Modem Up to 2Mbit/s	8%	92%
ADSL/Cable Modem 2 to 34 Mbit/s or more	19%	81%
Digital leased lines (SDH/PDH) 155 Mbits	25%	75%
Ethernet 35 to 154 Mbit/s	38%	63%
SDSL	39%	61%
Digital leased lines (SDH/PDH) above 155 Mbits	57%	43%
Digital leased lines (SDH/PDH) Up to 2Mbit/s	67%	33%
Digital leased lines (SDH/PDH) >2 to 34 Mbits	67%	33%
Analogue	71%	29%
Ethernet 2 to 34 Mbit/s	82%	18%
Ethernet above 155 Mbits	100%	0%

Source: Ofcom 2007

- A9.82 In terms of digital leased lines and Ethernet services it appears that in general a number of respondents were not deterred from services with higher latency/jitter. Based on stage 2 results only, the table below shows the services that respondents would be willing to switch for dedicated leased lines connections.

**Table 75: Stage 2 results in relation to latency/jitter**

	Latency/jitter		Base
	Critical	Not critical	
<b>Analogue</b>	69%	31%	39
<b>Digital leased lines (SDH/PDH)</b>	86%	14%	84
<b>Ethernet</b>	71%	29%	21

Source: Ofcom 2007

- A9.83 Although the above results are only indicative they show that there is limited willingness to switch in terms of latency and jitter particularly for digital leased line (SDH/PDH) services. Hence, while the stage 1&2 results may have presented respondents with digital leased lines with a higher number of candidate substitutes with relatively low performance in terms of latency and jitter (i.e. non-critical performance) the more detailed results from stage 2 suggest that respondents with digital leased lines in particular tended to decline those services.

A9.84 Therefore, these results may indicate that a break exists between business connectivity services that provide high latency-jitter performance and those that do not.

### Assessment by symmetry

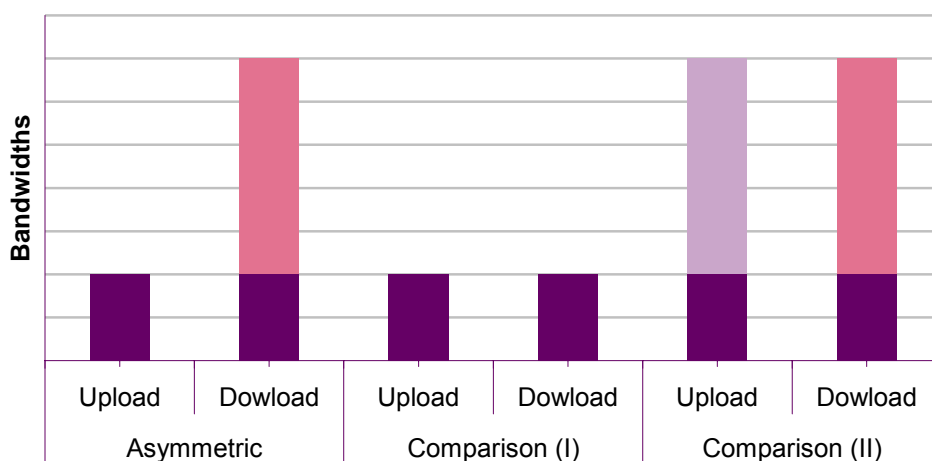
A9.85 In Ofcom’s current consultation for the Wholesale Broadband Access market review, the market definition has been based on asymmetric broadband services capacity that not constrained by symmetric services. This market definition is based on consideration of the services that might fall within retail broadband internet access market for the purposes of defining the upstream WBA market. However, in the context of the leased line market review, the relevant comparison for market definition purposes is whether asymmetric services such as ADSL might constrain the price of symmetric leased lines not vice versa (i.e. is the market wider than symmetric business connectivity services). In any case the WBA market review has already found ADSL in a separate market to SDSL.

A9.86 An asymmetric service may constrain the price of a symmetric service in two ways, first: an ADSL connection is able to provide some degree of symmetry based on its “symmetric equivalent”, which is generally determined by its upload speed, shown in Figure 104 below as comparison (I).

A9.87 The second way is in terms of compromises in capacity (i.e. a symmetric user compromising their upload speed), shown as comparison (II) in Figure 104 below. For the purposes of the end-user research Ofcom has tended to focus on the latter comparison, namely respondents’ willingness to compromise on upload speed.

Figure 104: Symmetry comparisons

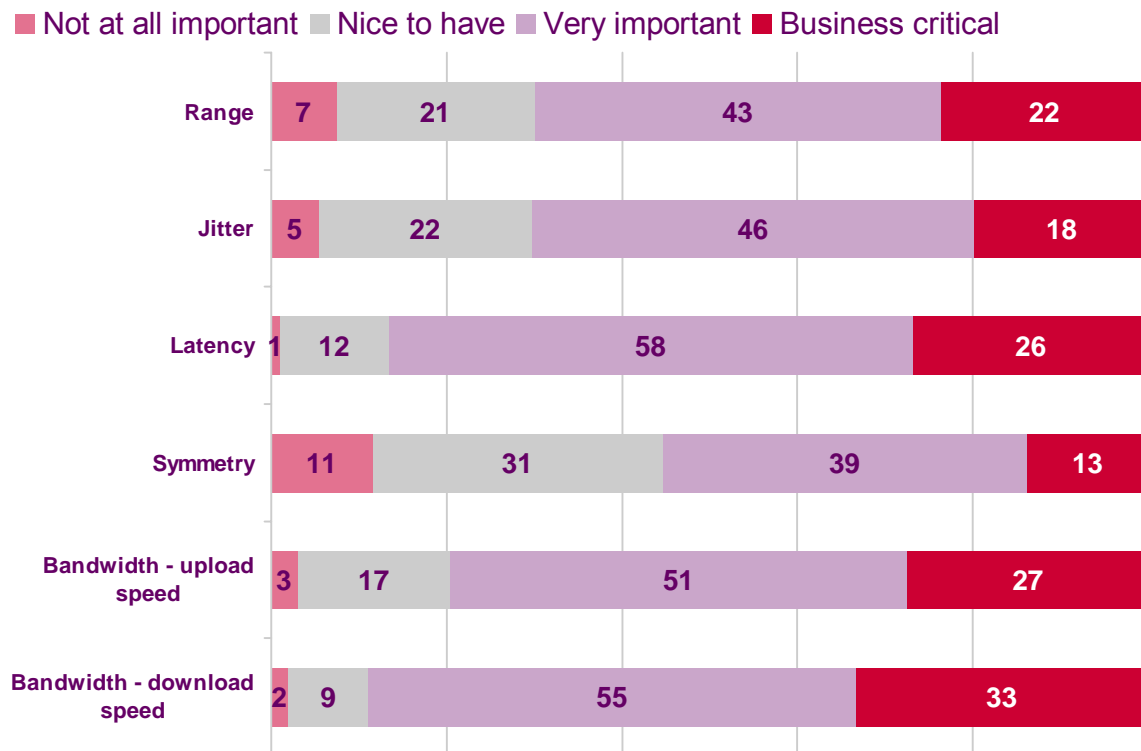
#### Testing for compromise on symmetry



Source: Ofcom 2007

A9.88 In terms of the general questionnaire results, symmetry was rated lowest in importance of service features with only 13% rated it business critical / 39% very important.

**Figure 105: General importance of service characteristics**



Source: Ofcom 2007

A9.89 However, overall upload speeds were rated as relatively important (78% rated it business critical / 27% very important) this suggests that a minimum level was still valued (even if the overall requirement for download speed to match upload speed was less important).

A9.90 Going forward respondents did not think that symmetry and upload speeds were becoming significantly more important. Indeed, of the service characteristics respondents were most likely to compromise on, asymmetry was the characteristic that the largest number named (31-38% of respondents that would switch would compromise in this area).

A9.91 As explained previously, ADSL and Cable services were among the main services that respondents that named a service would switch to. In relation to the results from “candidate substitutes” far fewer respondents opted for ADSL/Cable services suggesting less willingness to compromise on symmetry.

**Table 76: Compromise on symmetry in response to SSNIP**

	Latency/jitter		Base
	Asymmetric	Symmetric	
Analogue	10%	90%	39
Digital leased lines (SDH/PDH)	5%	95%	84
Ethernet	0%	100%	21
SDSL	8%	92%	12

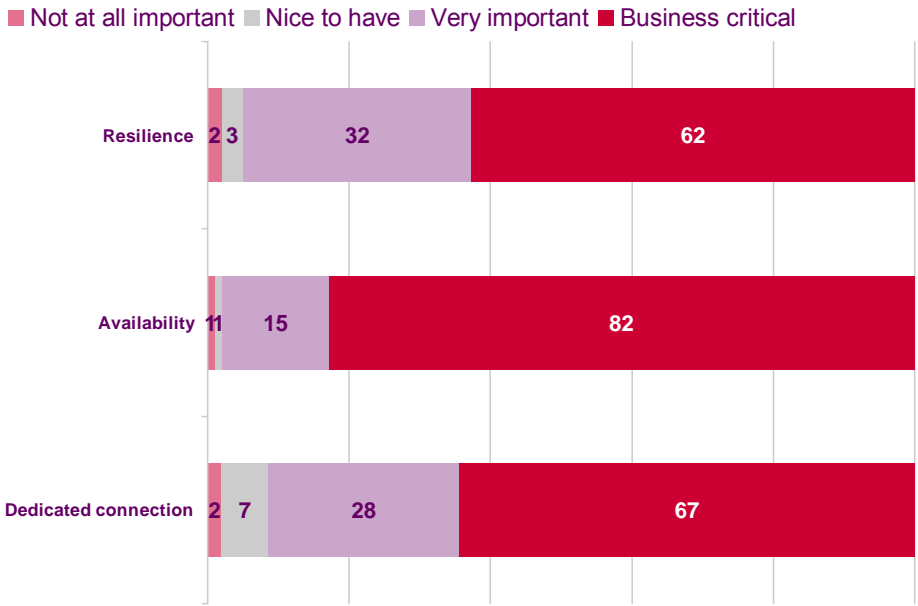
Source: Ofcom 2007

- A9.92 Grouping all baskets for digital SDH and all baskets for Ethernet shows limited willingness to compromise on asymmetry only. The 1st and 2nd preferences of symmetric users also tend to be for symmetric services.
- A9.93 Nevertheless, within the current business connectivity market there is an observed migration of low bandwidth services to ADSL that needs to be explained. There were also a number of business connectivity users that named ADSL as a service they would switch to.
- A9.94 The answer potentially lies with ADSL services increasingly being able to providing an affordable “symmetric equivalent” (as shown in comparison (I) in Figure 104 above). Progresses in broadband technology have brought the bandwidth performance to a sufficient level that ADSL services may be a viable low price alternative to deliver business connectivity.
- A9.95 This observed migration does not necessarily mean that asymmetric services fall within the market definition. It does not appear that many symmetry users would be willing to switch to asymmetric services. On this basis, there may be other service characteristics (potentially combined with symmetry) that inform such a break. Therefore there is merit in considering ADSL services in the context of “contention”, which is the final service characteristic discussed below.

### **Assessment by contention**

- A9.96 In general terms, dedication/contention was rated 2nd on service characteristics (67% rated it business critical / 28% very important).

### **Figure 106: General importance of other service characteristics**



Source: Ofcom 2007

- A9.97 Going forward respondents did not consider it becoming significantly more important issue. Despite the overall importance of dedicated connections to many respondents, it came second in terms of the service most willing to compromise on (22-27% of respondents that would switch would compromise in this area). This suggests that users value dedicated connections but it might be the extent of contention which is the significant issue. In other words, while respondents strongly value dedicated connections they may be willing to compromise to some extent on contention if a small change results in only a small drop in the underlying quality of service experienced. For example, a move from 1:1 (dedicated) to 5:1 may not result in a significant drop in performance. Therefore, the trade-off between price and service quality could be important in respect of contention.
- A9.98 As stated previously, for respondents on dedicated connections, the results from respondents who named a service showed that around 45 per cent would remain on a dedicated leased line, split roughly equally between switching to analogue or Ethernet or a higher bandwidth digital SDH service. Nevertheless, a number of respondents also named (contended) ADSL and SDSL services. Though for the latter SDSL services, it is unclear whether these would be contended services.
- A9.99 The table below shows the results based on potential candidate substitutes from stages 1&2 to assess switching by service in more detail.

**Table 77: Candidate substitutes based on stage 1&2 results**

	Dedicated	Contended
<b>Description</b>		
VPN Up to 2Mbit/s	0%	100%
ADSL/Cable Modem Up to 2Mbit/s	33%	67%
Ethernet 35 to 154 Mbit/s	38%	63%
ADSL/Cable Modem 2 to 34 Mbit/s or more	40%	60%
SDSL	62%	38%
Digital leased lines (SDH/PDH) above 155 Mbits	71%	29%
Digital leased lines (SDH/PDH) Up to 2Mbit/s	74%	26%
Digital leased lines (SDH/PDH) 155 Mbits	75%	25%
Digital leased lines (SDH/PDH) >2 to 34 Mbits	77%	23%
Analogue	80%	20%
Ethernet 2 to 34 Mbit/s	91%	9%
Ethernet above 155 Mbits	100%	0%

Source: Ofcom 2007

A9.100 The above table shows some willingness to compromise on contention for dedicated services such as digital SDH, Ethernet and analogue. Nevertheless, there is a stronger preference for dedicated services overall. Table Table 78 below considers dedicated services in more detail based on stage 2 results.

**Table 78: Compromise on contention in response to a SSNIP**

	Contention		Base
	Dedicated	Contended	
Analogue	77%	23%	39
Digital leased lines (SDH/PDH)	87%	13%	84
Ethernet	71%	29%	21
SDSL	33%	67%	12
ADSL/Cable Modem	0%	100%	38

Source: Ofcom 2007

A9.101 Overall, the above results show that a proportion of dedicated leased line users may value this service aspect. In particular respondents with dedicated SDH leased lines do not appear willing to compromise on contention. On the other hand there is a greater willingness for other dedicated leased line services to compromise on contention.

A9.102 It is interesting that these results mirror closely the results for latency-jitter, where similar results appeared for SDH leased lines and Ethernet and analogue. Hence, while the algorithm results suggest a willingness for user of SDH leased lines to switch to either Ethernet or analogue services, there appears to be a possible barrier to switching to wider services that result in higher contention rates. As contention can be closely related to latency-jitter performance this may be one of the key reasons that could indicate a break in the market. Nevertheless, in some instances, particularly where leased line users named services they would switch to – up to one quarter of those services were contended connections.

A9.103 Even if SDH leased lines were considered alone, it could be that a chain of substitution exists such that Ethernet services might be willing to substitute either to other dedicated connection or to compromise on quality and contention. This is a

logical outcome as Ethernet services would tend represent a slight drop in performance vis-à-vis SDH leased lines in terms of certain characteristics.

## Migration issues

- A9.104 The questionnaire asked respondents their potential migration plans to other services. This question is relevant to market definition as the above discussion focused on existing business connectivity customers responses to a SSNIP. Clearly if there are other end-users that were already planning to migrate away from their current connectivity service within the 12 month period then a SSNIP on that service is likely to reinforce these switching intentions. However, it should be noted that even in the absence of the price rise on their current connection this intended switching behaviour would still have occurred. Therefore, it might be incorrect to include the responses of consumers who have already made up their mind to change to another business connectivity in the next 12 months. This means that the SSNIP analysis should capture changes in behaviour that solely occur in response to that hypothetical price increase.<sup>185</sup>
- A9.105 Respondents were first asked whether they considered whether they were aware of any services that met their current service needs better. Respondents were then asked what those services are and whether they were planning to switch to other leased line services or take on new services in the next 12 months.
- A9.106 18 percent of respondents thought that there were services that met their needs better. The table below shows some of the services that respondents considered would meet their needs better.

**Table 79: Awareness of other business connectivity services that would meet company needs better**

	Total	Percentage
VOIP	16	35%
Leased lines	8	17%
ADSL	8	17%
MPLS	8	17%
SDSL	6	13%

Source: Ofcom 2007

- A9.107 Due to low sample sizes it is not possible to further analyse the data by their current service types to highlight whether users on particular connections considered other business connectivity services. Nevertheless, the above results are similar to previous responses respondents gave when asked to name services they would switch to in response to a SSNIP, for example the variation in the services named between dedicated and contended services.

<sup>185</sup> It should be noted that this migration itself may have been in response to relative price or quality changes; analysis of the reasons why consumers are migrating is however a different exercise to SSNIP analysis, which seeks to address likely responses to changes in relative prices. For the purpose of SSNIP analysis it is relevant to exclude them from this analysis as their intended switching behaviour would have likely occurred even in the absence of changes in relative prices.



**Table 80: Likelihood of switching or taking on new services in the next 12 months**

	Voice	Data	Total	%
Very Likely	17	20	37	9%
Quite Likely	20	28	48	
Neither likely nor unlikely	15	17	32	19%
Quite unlikely	28	25	53	
Very Unlikely	41	44	85	
Don't know	2	1	3	72%
Not stated	327	315	642	

Source: Ofcom 2007

- A9.108 The results of the questionnaire show that a number of respondents did not provide a response on the above question. Nevertheless, 9 per cent of those asked said that they were likely (either very or quite likely) to switch to another service in the next 12 months.
- A9.109 For nearly all business connectivity services, if the “likely switching” rates were adjusted to take account for this claimed migration this would not affect the conclusions as to whether a SSNIP would be unprofitable<sup>186</sup>. In the case of high bandwidth leased lines there is a potential for a SSNIP to be profitable, though this result is ambiguous as likely switching would be 20 per cent compared to a critical loss range of 16 to 21 per cent.

<sup>186</sup> This has been analysed by adjusting the switching rate by the migration rate. Strictly speaking this should be viewed as the maximum adjustment that should be made. This is because migration from these business connectivity services would potentially be to other business connectivity. As these migrating customers would potentially join other services this could be a relevant factor in assessing the SSNIP on the service customers would switch to.

## Annex 10

# Dark fibre in the access network

## Introduction

A10.1 As discussed in section 5, Ofcom is consulting on the case for examining in more detail the option of introducing dark fibre access, as a remedy designed to promote more effective competition in the markets for leased lines. This annex considers a number of the issues raised by this option and is structured as follows:

- the views expressed with respect to such a remedy in current and previous Ofcom consultations;
- the current international situation, particularly in the EU, with respect to considering a dark fibre remedy in the access network;
- the different levels of regulatory intervention available to NRAs, including Ofcom, and their relevance for defining the depth of competition that can be achieved in the marketplace;
- the criteria which we think should be considered when assessing the desirability of a dark fibre remedy; and
- pricing issues.

A10.2 Dark fibre access describes the situation in which communications providers lease access to fibres deployed by the access network owner but without making use of the access network owner's switching equipment. The lessee attaches its own equipment to these dark fibres to 'light' them and provides backhaul services itself.

A10.3 We are concerned here only with the provision of dark fibre in the access network between the local exchange and the end customer's premises, not for use in core networks.

## Views on dark fibre expressed in previous Ofcom's consultations and policy statements

A10.4 The opportunity to consider a dark fibre remedy has been reviewed in the past, and is currently being considered again in the debate over the future of regulation for next generation access (NGA). There is an opportunity to consider such a remedy in business markets based on the following policy developments:

- In the TSR, Ofcom considered dark fibre as a remedy for business connectivity markets, and recognised that in the future Ofcom might consider such a remedy in its ex-ante framework to foster competition in business connectivity markets;
- Ofcom NGA consultation focuses on residential broadband markets and does not preclude considering a dark fibre remedy to promote competition in business markets
- Some European NRAs have been consulting on a dark fibre remedy as part of the wider debate on the development of regulation for next generation access

networks; in addition, the EC is considering extending the range of access services that can be mandated to include passive remedies such as duct sharing.

A10.5 In the 2003/04 LLMR, Ofcom stated that:

*“Dark fibre provides an input into the markets considered by this review (at both the access and core levels) as well as into other markets that do not fall within the scope of this review. Any market(s) for dark fibre would therefore sit upstream of the markets covered by this review. It would be inappropriate for Ofcom to impose any fibre unbundling remedy without first properly defining the relevant market and assessing whether any communications provider has SMP in that market. Consideration of BT’s duct and dark fibre network are outside the scope of this market review.”<sup>187</sup>*

A10.6 In November 2004, Ofcom published the consultative document “Next Generation Networks - Future arrangements for access and interconnection”. In this document, Ofcom stated (para 1.31) that, as an alternative to remedies similar to existing ones for “next generation” leased lines:

*“A more focussed option might be to address the underlying access bottleneck for businesses services directly, and do so at the deepest possible service level, deregulating elsewhere. One means of doing so might be for BT to provide selective access to dark fibre in those geographies where it has significant market power (SMP). This might reduce the need for the more widespread regulation of downstream products such as PPCs”.*

A10.7 Annex E of the 30 June 2005 "Next generation networks: further consultation" summarises the responses on dark fibre as follows:

*“BT stated that they will provide a response on dark fibre in their TSR response. There was general support from alternative communication providers for dark fibre access, but reservations were expressed regarding when and if this would allow downstream de-regulation of existing PPCs. Some thought it was not clear whether existing dark fibre in the ground would meet wholesale demand unless requirements include the obligation to install new fibre”<sup>188</sup>.*

A10.8 And also:

*“Other views were that both SDH and Ethernet services will continue to be important, but there is substantial uncertainty as to how BTs wholesale products are expected to evolve. One alternative provider stated that when appropriate, the focus for next generation leased lines should be on QoS enabled bitstream, however, this is not required yet.”<sup>189</sup>*

A10.9 In November 2004, Ofcom published the Telecoms Strategic Review (TSR) Phase 2 consultative document. Here, Ofcom stated that to promote competition in business markets (para 8.76), again in the context of the move to next generation networks:

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<sup>187</sup> 2003/04 LLMR Statement, para. 3.100.

<sup>188</sup> Para. E.38, "Next generation networks: further consultation", 30 June 2005.

<sup>189</sup> Para. E.39, op cit.

*“BT might be required to provide access to the underlying physical medium, by providing access to dark fibre. Existing fibre might be treated in a different manner to new fibre, since...an obligation to deploy new fibre and make it available at cost-based prices might disincentivise new investment. Any regulatory intervention might be restricted to those geographic areas where there was no alternative supply of dark fibre.”<sup>190</sup>*

A10.10 In September 2005, Ofcom published the conclusions of its TSR and its acceptance of certain undertakings offered by BT in lieu of a reference under the Enterprise Act. Ofcom stated that:

*“Any future requirement for BT to provide [dark fibre] would be best addressed by the ex ante framework in this instance. If Ofcom were to deem such remedies appropriate at some point in the future, any dark fibre products would be provided out of [BT Openreach]”<sup>191</sup>.*

A10.11 BT’s Undertakings do not contain any specific reference to the provision of dark fibre.

A10.12 Finally, the recently published NGA consultation<sup>192</sup> does not foresee the immediate requirement to mandate physical layer remedies, or passive remedies such as duct sharing and dark fibre for the residential market. In particular, it highlights the costs and benefits of alternative form of competition (active vs. passive remedies) in the face of alternative fibre deployment models. It concludes that in the future passive remedies will be more difficult to impose in FTTH deployments that use GPON technology. The consultation document focussed however on the residential broadband market. It leaves open the possibility that Ofcom might review the supply of passive remedies in the future for business markets.

A10.13 In summary, previous reviews have found some support for a dark fibre remedy, but have not formally considered whether such a requirement could be justified.

### International overview

A10.14 The EC framework currently does not specifically refer to a dark fibre remedy, even though it encompasses one type of passive remedy, namely the unbundling of copper loops.

A10.15 However, the EC’s proposals for a revised Framework and Access Directive open up the range of access services that an NRA can mandate to include a passive remedy such as duct sharing<sup>193</sup>.

A10.16 The ERG Common Position on Remedies of June 2006 does not refer to passive access remedies. The ERG has been considering how the current EU framework could be applied to next generation access deployments. It has recently issued a

<sup>190</sup> TSR 2 Condoc, para. 8.77.

<sup>191</sup> TSR Final Statement, Pag. 52.

<sup>192</sup> See: <http://www.ofcom.org.uk/consult/condocs/nga/>

<sup>193</sup> Pag 42 to 44, Explanatory Memorandum accompanying the Proposal for a Directive of the European Parliament and of the Council (of...2007) amending Directive 2002/21/EC on a common regulatory framework for electronic communications networks and services, and 2002/20/EC on the authorisation of electronic networks and services {COM(2007)6 rev1}.

consultation on regulatory principles under next generation access which discusses potential market definitions and regulatory remedies under next generation access.

A10.17 Overall, it recommends:

- that the market definition for market 11 (wholesale local access) be modified to become technology neutral, as opposed to copper access network specific;
- that the definition of market 12 (wholesale broadband access) incorporates higher speed broadband services, and therefore requires no modification;
- that the available remedies for significant market power in next generation access networks are:
  - *layer 0 products* e.g. physical access to ducts, enforced as an ancillary service to unbundling remedies (i.e. duct access to allow cabinet to exchange backhaul to make sub-loop unbundling feasible);
  - *layer 1 products*, specifically sub-loop unbundling for FTTC deployments, with various ancillary services required to make this feasible (e.g. co-location at the cabinet etc)
  - *layer 2 products* e.g. next generation access wholesale active line access in the event that upstream layer 1 remedies are not effective.

A10.18 Other European NRAs<sup>194</sup> have been consulting on the possibility of passive remedies, particularly dark fibre, as part of the wider debate on the evolution of regulation and competition for next generation access.

A10.19 While most of the debates in the international arena have so far focussed on NGA and the future of residential broadband markets, and therefore have only limited relevance for our discussion, it is clear that the debate about the future of access regulation has now widened to include discussions around passive remedies.

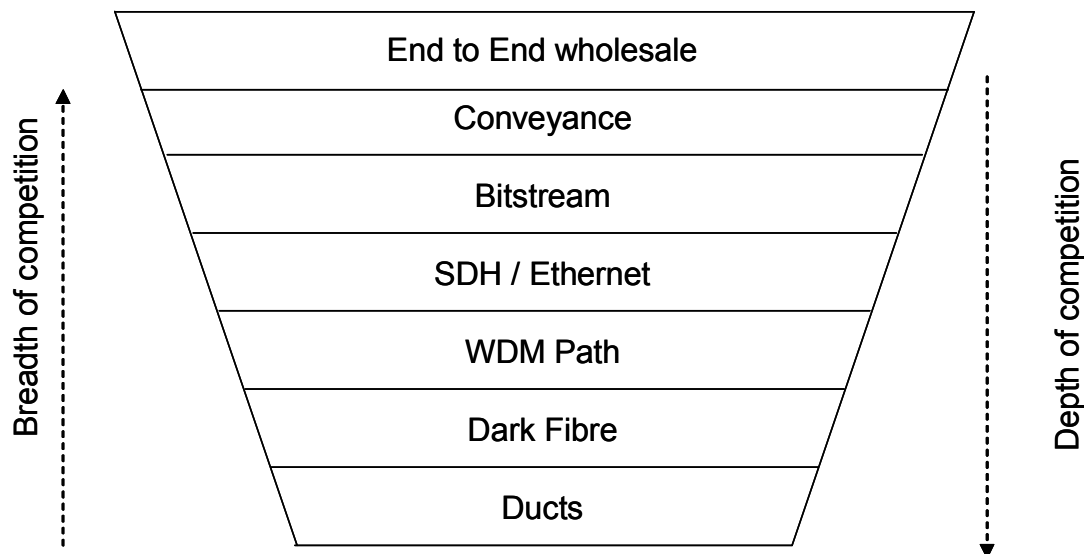
### **The possible levels of regulatory intervention**

A10.20 Given the enduring bottleneck problems at the access and backhaul levels, remedies of some form continue to be necessary to promote competition in this market. The one key policy issue is what level of remedies we should adopt to promote both retail and wholesale competition. Figure 107 shows all the possible different levels of access that can be mandated.

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<sup>194</sup> CMT recently consulted on the regulation of next generation access in Spain, seeking opinions on issues regarding the applicability of regulation both during and after a transition to next generation access. In particular, CMT consulted on whether an obligation to provide dark fibre should form part of market 11, and how sub-loop unbundling and co-location should be implemented. CMT also consulted on whether relevant markets for physical infrastructure (ducts and poles) are required. AGCMO in Italy has consulted on a dark fibre remedy from the street cabinet to the OCPs POPs in FTTC/VDSL deployments.

Figure 107: The potential levels of access remedies



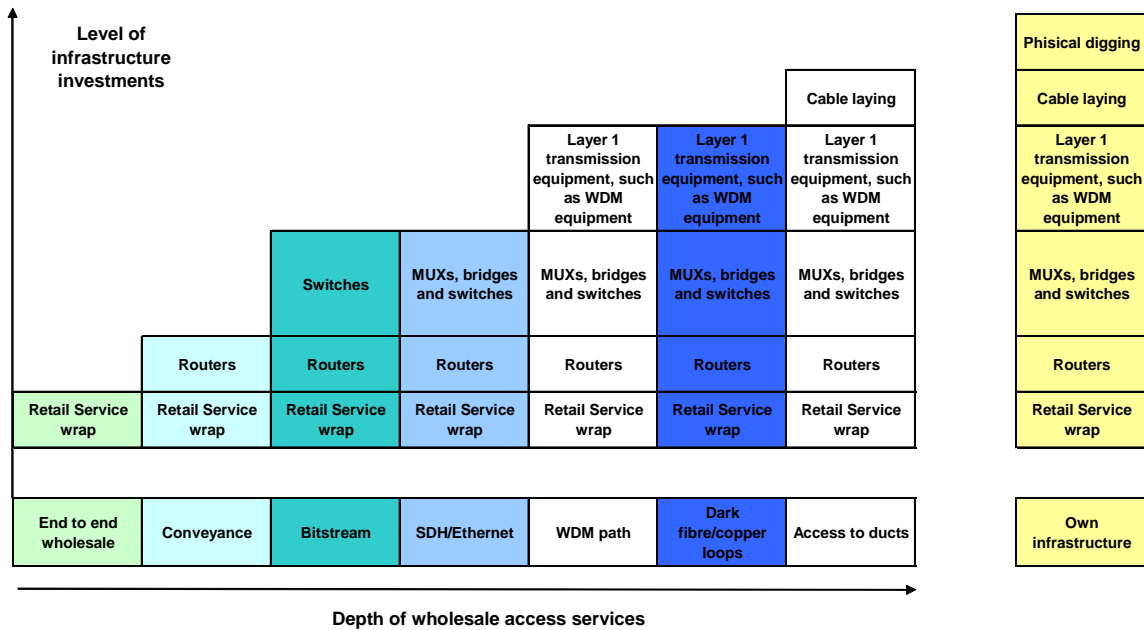
A10.21 In terms of the depth of access on the incumbent's infrastructures, the following options are available:

- Access to ducts: access to ducts is not available in the UK; it is a regulatory requirements in other countries, more so in countries where there is a low penetration of access lines (for example, South Africa);
- Dark fibre/Copper: access to the bare infrastructure allows altnets to decide what technology to deploy and optimise transmission for carrying different types of traffic;
- WDM path: WDM is used to increase the data-carrying capacity transmission of fibre; Dense WDM (DWDM) is the most commonly employed in trunk and backhauling; with DWDM, a fibre can support up to 32 wavelengths each with a capacity of up to 10 Gbit/s; access to DWDM paths gives altnets the ability to aggregate over one or more channels various SDH or Ethernet transmission circuits;
- SDH/Ethernet: access to the SDH/Ethernet infrastructure layer gives altnets the ability to do some traffic aggregation, but in a more limited way than with a WDM path;
- Bitstream: with bitstream access, traffic is delivered to altnets as a mix of bits, which the altnets then has to route on to its own infrastructure; bits could come from different service streams, and it is up to the altnet to direct them onto the most appropriate platform/infrastructure; bitstream access does not allow altnets to access the whole transmission path, but only use it for as much as they need; bitstreams from different altnets are typically mixed together on the same infrastructure;
- Conveyance: the traffic is delivered as switched traffic to the altnet, directly to their POIs; in the future, IP conveyance could become the most common form of conveyance;

- End to end wholesale: end to end wholesale services provide altnets with the opportunity to resell the incumbents' retail services without the need for deploying own infrastructure.

A10.22 Figure 108 shows the level of altnets' investments in infrastructure and equipment associated with each level of wholesale access.

**Figure 108: Level of access and infrastructure investments**



A10.23 Each level of intervention determines the extent of competition: the deeper the level of regulatory intervention, the deeper the depth of competition. In the case of passive remedies such as dark fibre and access to ducts, competitors would be able, in principle, to innovate and differentiate by installing, running and managing their own equipment.

A10.24 Figure 109 shows the current level of access remedies imposed on the incumbent's network.

**Figure 109: The effective levels of existing access remedies**

Level of wholesale access	Access	Backhaul	Trunk
End to end wholesale	WEEESs		
	WLR		
Conveyance	Call origination	FRIACO DMSU	
	Call terminaiton	Call Conveyance	
	WLR	PSTN Transit	
	FRIACO		
Bitstream	ATM Origination		ATM Conveyance
SDH/Ethernet	WES		
	PPC Terminating		PPC Trunk
		BES	
	WES Local Access	WES Backhaul	WES B - variants
	WES Through		
	TILLBPs (tbc)	TILLBPs (tbc)	
WDM path	Not available		
Dark fibre/copper loops	LLU		
Access to ducts			

- A10.25 In the access segment, alternative operators have today the ability to choose from deep access services (such as LLU for copper loops), to shallower remedies, such as WLR, where the alternative operator in effect acts as a reseller of the line service from the incumbent.
- A10.26 Access tails for leased lines can either be provided over copper (for low speeds) or fibre. While the copper access network reaches every residential and business site in the UK, fibre loops are rare, and are deployed only for businesses that require high access capacity (typically above 2 Mbit/s). Access to fibre loops from BT is not currently available. Access to copper pair is available through LLU remedies.
- A10.27 Ofcom’s competition policy aims to promote infrastructure competition at the deepest possible level. This descends from the EC Framework’s view of introducing infrastructure-based competition as the main remedy to market dominance by the incumbents, and follows the belief that real innovation can only come when different infrastructures compete with each other. Infrastructure-based competition can take two main forms: inter-platform and intra-platform competition.
- A10.28 Inter-platform competition based on alternative infrastructures has so far worked well for consumer and businesses alike. Cable operators and operators providing (generally higher bandwidth) leased line services over their own alternative infrastructure have all introduced significant retail competition.
- A10.29 Views have been evolving in respect of intra-platform competition, and particularly competition between alternative fixed networks providers. The mainstream analysis of the economics of fixed infrastructures had identified wholesale access on the incumbent’s fixed network as a way to allow alternative operators to build up economies of scale and then move up on the “ladder of infrastructure investments”,



in the belief that one day they will invest in their own infrastructures, including their own local loops.

A10.30 Over the last few years, the general view over the deepest possible level of infrastructure competition has crystallised, both in the UK and abroad, around the following views:

- Local access provision is and will remain a bottleneck
- Backhaul is likely to remain a bottleneck for the foreseeable future, albeit some areas of greater competition are likely to emerge
- Trunk and core network provision is potentially competitive, with some exceptions due to the particular demand and supply characteristics e.g. related to particular geographic areas.

A10.31 LLU has introduced in the market a third way: regulation creates the incentives for rolling-out infrastructures up to and in the local exchanges, but it does not require alternative operators to put in their own loops to be competitive. This LLU-type competition is working very well in the market for residential broadband internet access, and is having knock-on effects also on the voice market and (to a lesser extent) the business access market for low speed dedicated connectivity.

A10.32 One key issue in this debate is whether the success of LLU regulation could be replicated by mandating dark fibre as an access remedy.

### Comparison with LLU

A10.33 Because it would amount to “leasing” the local access infrastructure from BT (without making use of the switching equipment), the provision of dark fibre in order to provide business connectivity services has some similarities with full Local Loop Unbundling (LLU), which is a remedy in the wholesale local access market. In order to provide business connectivity services for large firms the local access infrastructure must be fibre, rather than copper, to provide sufficient bandwidth to support data intensive services.

A10.34 In general, imposing regulation may lead to less investment in competing network infrastructure and possibly reduced level of competition in the longer run. A key difference between the case for LLU and that for dark fibre is that further investment in competing local access infrastructures for the purpose of serving residential and SME consumers is considered unlikely. Although there has been a significant amount of investment in the past by the cable companies, BT has so far been judged to retain entrenched dominance in the wholesale local access market.

A10.35 This is not true of business connectivity services to the same extent. In a number of higher bandwidth markets, competing infrastructures have developed to an extent sufficient to permit complete deregulation, with no operator having SMP. It does not follow that, because of the existence of a similar obligation in the case of copper loops, dark fibre access should be required, because competitive conditions in the wholesale local access market and in the various TISBO and AISBO markets are different.

A10.36 LLU is characterised by economies of scale (arising from the fixed costs of unbundling each exchange) which means that LLU-based competition is always likely to be geographically limited. In addition, it is recognised that LLU operators'

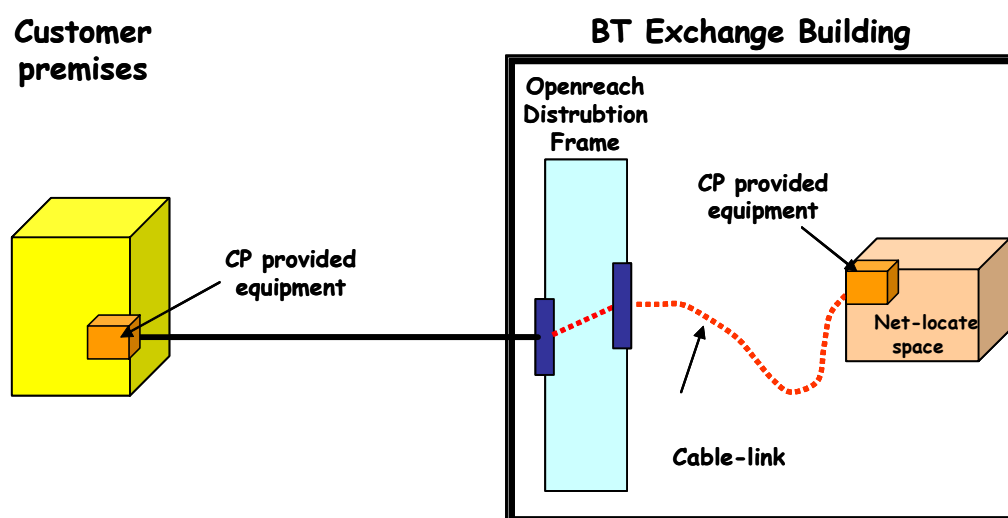
costs will be higher than BT's at least until and unless they are able to obtain sufficient market share. If the economics of dark fibre are similar because, for example, a competing operator incurs fixed costs in attaching its equipment to a BT fibre, then dark-fibre based competition may also be concentrated in areas where the density of business customers is highest, with downstream remedies required elsewhere. A requirement to supply dark fibre would not then be a substitute for remedies further downstream, such as those proposed in this consultation, in all areas.

- A10.37 A further key difference is that for residential broadband services only the furthest upstream remedy (LLU) is available at regulated cost-based charges (that is charges based on incremental costs plus a reasonable mark-up for common costs and allowing a reasonable return on capital). Downstream remedies are required but charges, for example those for Wholesale Broadband Access (WBA) are subject to less stringent requirements (principally a requirement to avoid an anti-competitive margin squeeze) which can allow BT to earn a higher rate of return (above the cost of capital). This is the most logical arrangement, since by making only the most upstream remedy available at cost-based charges, competition at the deepest level feasible is incentivised. The bulk of TISBO services, however, are already subject to a cost-based charge control and it is now proposed to make low-bandwidth AISBO services subject to a similar requirement.

#### Dark fibre access as a possible remedy

- A10.38 For fibre connections, there is in principle a choice of passive remedies ranging from wavelength unbundling to duct sharing and dark fibre. Wavelength interconnection is costly and still difficult to implement, albeit its economics could improve in the future when PON technology is deployed in the access network. Duct sharing provides a good outcome in situation when most of the ducting has yet to be provided, for example in countries with a low fixed telephony penetration.
- A10.39 However, in countries with a high fixed telephony penetration, where the incumbent has provided the roll out of the copper networks, most of the ducting has already been provided to lay down the copper network, and can be in part re-used to lay down fibre connections. BT's existing ducts are also likely to contain already some unlit fibre that could be used.
- A10.40 Dark fibre has the advantage over duct sharing that it allows using existing unlit fibre, and hence provides a more efficient outcome. It is also less difficult to implement than duct sharing, which would require multiple access to street level chambers. Our discussion therefore focuses on the opportunity for a specific passive remedy, namely dark fibre in the access network. This is also to reflect the fact that most of the discussions with stakeholders around these issues have focussed on dark fibre, with far less interest being expressed in duct sharing as a possible alternative for business markets.
- A10.41 As noted above, we are concerned here only with the provision of dark fibre in the access network between the local exchange and the end customer's premises, not for use in core networks. A possible configuration of an illustrative dark fibre product is shown in Figure 110 below.

**Figure 110: Structure of a dark fibre in the access wholesale service**



### Possible criteria for assessing the opportunity of a dark fibre remedy

A10.42 In the following paragraphs we set out some criteria against which a requirement to provide dark fibre might be judged. These criteria are by no means intended to exhaust the issues which would need to be addressed in a review of dark fibre in the access network, but attempt to provide a broad framework under which to conduct a possible future review.

#### Criterion 1: consistency with regulatory principles

A10.43 The purpose of access regulation is to remedy ineffective competition by allowing entrants to make use of parts of the incumbent's network which they are unable to replicate economically. It therefore seeks to allow competition in those elements of the service where competition is possible. Regulation must also be proportionate to the degree of market power present. Intrusive regulation, such as a requirement to provide access to dark fibre, is only justified where the incumbent provider has an entrenched position of market power (and to the extent that such intervention can be of net benefit).

A10.44 Therefore, a requirement to provide access to dark fibre on regulated terms could only be justified if BT were found to have significant market power (SMP) in a relevant market and this market power were sufficiently entrenched. However, in these circumstances, regulated access to dark fibre could be consistent with the principle set out in the conclusions to the TSR that the most effective way of delivering choice, rapid innovation and introduction of new services "is through competition at the deepest level of infrastructure where competition will be effective and sustainable".

#### Criterion 2: consistency with other remedies

A10.45 In this document Ofcom is consulting on possible future regulation to apply in wholesale leased line markets. In particular, it is proposed to require BT to provide AISBO and TISBO services, subject to charge controls and cost-orientation

requirements except for very high bandwidth TISBO above 155Mbit/s, high bandwidth TISBO (34/45Mbit/s) in part of London and AISBO above 1Gb. Any consideration of the case for regulated access to dark fibre will need to take these into account. It is possible that these remedies might, over time, no longer be necessary, or might need to be modified, if there were a requirement on BT to provide dark fibre in the access network.

- A10.46 These proposed remedies apply at a deep level in BT's network and are themselves intended to reflect the principles of the TSR set out above. They may therefore be sufficient to ensure effective competition in downstream markets or, to the extent that they do not, it may be possible to address shortcomings in a relatively straightforward way, without resort to new remedies. For example, concerns over BT's quality of service in dealing with orders or line faults might best be remedied by appropriate SLAs/SLGs on existing products or through achieving replicability, whilst excessive charges for PPCs could be reflected in a tougher charge control. However a dark fibre remedy could allow competition at a still deeper level in the network.
- A10.47 The key difference is that, whereas purchasers of AISBO and TISBO make use of BT's switching equipment in the local exchange or MSAN, purchasers of dark fibre would need to install their own equipment in BT's exchange buildings. Relative to AISBO or TISBO, dark fibre would therefore extend the boundary of competition outward to include the exchange equipment itself. This could enable increased scope for operators to innovate and differentiate their services from BT's, as has happened in the case of LLU. For dark fibre to be an effective remedy, it would however be necessary for it to be economic for competing operators to invest in their own equipment in BT's exchanges to light the fibre. Whether this is the case will depend partly on their ability to benefit from similar economies of scale to BT and from which they are able to benefit by leasing lit fibre from BT (TISBO or AISBO).
- A10.48 Concerns could in theory arise from arbitrage between services intended for residential or SMEs and large business users. However, it is possible that differences in location and pricing between residential services based on LLU or NGA fibre and dark fibre used for leased lines may reduce arbitrage possibilities.
- A10.49 It is possible that dark fibre could be used to provide leased line services of any type of interface or bandwidth and this could have the effect of chilling investment in areas where infrastructure competition already exists, for example, in higher bandwidth markets.
- A10.50 Even if adverse effects on infrastructure competition could be avoided, the availability of dark fibre could make it difficult to recover common costs in an efficient way. As noted above, "In a competitive market with such a cost structure (i.e. large amounts of Ethernet costs invariant by bandwidth) it would be expected that competing providers would be likely to provision the full portfolio of bandwidths as it is likely to be efficient for an operator to provide circuits of all bandwidths rather than concentrating on a subset of bandwidths. With high common cost elements, the most efficient way of recovering common costs is likely to be by means of prices which reflect demand conditions as well as incremental costs of provision. This could mean that, in a competitive market in which all operators supplied AISBO circuits of various bandwidths, price differentials between circuits of different bandwidths might be greater than suggested by incremental cost differences, as they may depend on differences in willingness to pay". However, the availability of

dark fibre at a bandwidth invariant charge could be inconsistent with such a pricing structure.

Criterion 3: it generates an expected net benefit

- A10.51 An impact assessment (IA) provides a framework in which to identify and, where possible, quantify costs and benefits such as those identified above. As part of any review of an obligation to provide dark fibre, it would be necessary to carry out such an IA. It is likely to be useful to consider this under the headings of static costs, static benefits, dynamic costs and dynamic benefits. Some of these can be identified in a qualitative way at this stage.
- A10.52 A useful guide to the types of costs and benefits which might be expected is the cost benefit analysis of LLU published by Oftel in November 1999 (see "Access to Bandwidth: delivering competition for the information age). This identified the costs and benefits which were expected to result from LLU, measured against a base case (of a further upstream remedy) under a number of different assumptions. There is some qualitative similarity with the costs and benefits which might be expected to result from a dark fibre remedy (though of course the quantification, and possibly net outcome, will be different).
- A10.53 The key LLU costs identified were increases in average costs due to loss of economies of scale and the costs of order handling and other systems, and collocation costs. Similar (static) costs may be expected in the case of dark fibre (as noted above). For example, installation of competing operators' equipment in BT exchanges may both cause direct costs to be incurred and lead to loss of economies of scale as usage of BT equipment declines.
- A10.54 The key (dynamic) benefit anticipated was greater competition leading to increased cost efficiency, lower prices and greater service innovation in turn leading to growth in the size of the market. It is possible that dark fibre would enable more of the leased line cost stack to be exposed to competitive pressure, leading to efficiency gains on this element, and greater service innovation. Against this would be offset the costs identified above, arising from smaller scale operation, duplication of indivisible assets and additional systems.
- A10.55 In addition, there may be some additional costs (and possibly benefits) arising from the fact that there is already some infrastructure based competition in leased lines, particularly at higher bandwidths. Dark fibre could supplant this and could lead to some saving in costs of duplicated infrastructure and gain in economies of scale (a static benefit). But on the other hand there could be significant additional costs caused by the replacement of infrastructure competition with competition based on regulated access to the incumbent's infrastructure.
- A10.56 It is clear from the 1999 analysis of LLU that, for there to be a net benefit overall, there need to be substantial benefits from stimulation of additional competition, in order to offset the static costs. Thus for a requirement to provide dark fibre to be justified, it will be necessary to show that it is likely to lead to significant additional competition in markets where it is not taking place already. For this to be the case, any dark fibre remedy is likely to have to be designed in such a way as not to undermine existing infrastructure competition and at the same offer a significant advantage over existing downstream remedies in terms of facilitating innovation or exposing costs to competitive pressure.

A10.57 Such a CBA is a significant piece of work, requiring detailed estimates of take-up, in this case of dark fibre, and forecasts of market growth, as well as cost modelling. The work on LLU in 1999 required significant input from consultants and this would be likely to be the case again.

### Pricing issues

A10.58 The effectiveness of any dark fibre remedy depends on how it would be priced. It is of course too early to make a judgement on this, but in cases of entrenched market power, it is often seen as appropriate to apply a charge control which allows the firm to recover its incremental costs plus a reasonable mark-up for common costs and allowing a reasonable return on capital. This latter is the rate of return necessary to reward and encourage investment and depends on the degree of risk assumed.

A10.59 The rate of return which BT requires in order to invest in various parts of its network depends on a number of factors. These are discussed in "Ofcom's approach to risk in the assessment of the cost of capital" (August 2005). For most regulated services, a rate of return derived from the capital asset pricing model is likely to be appropriate. However, the possible relevance of "wait and see" options to the rate of return required on certain types of investment is also considered. To the extent that such "option value" is relevant, it is thought most likely to be to the case of "new" services, which could include the deployment of next generation fibre access to residential customers. However fibre used for business connectivity services may more appropriately be regarded as a mature product. In the event that a cost-based charge for dark fibre were determined, it would be necessary to consider the appropriate rate of return in the light of this.

A10.60 An alternative to a cost-based charge control is a no margin-squeeze rule, which can be expressed as a "retail-minus" rule or a requirement not to discriminate (unduly) This calculates the access charge by starting with the retail price and subtracting the costs that the firm could save if it no longer provided retail services but only wholesale access. This method is particularly suitable where is intended to mandate access but leave the incentives of the regulated firm and its competitors to invest unchanged. It is likely to be appropriate where the retail price is subject to growing competitive pressure based on upstream entry since the retail minus rule does not itself remove profits from upstream market power. It may not therefore be appropriate as a remedy for entrenched upstream SMP.

A10.61 Given the proposals in this document for cost-based charge controls on AISBO and TISBO, a dark fibre access remedy at retail minus is likely to be ineffective, as the downstream wholesale products are likely to be more attractive, both on price and because less investment is required by the user. It might appear that this difficulty could be avoided by pricing dark fibre on a "wholesale minus" basis, that is, at the price of TISBO or AISBO minus the cost of the equipment not supplied. However, as noted above, the prices of TISBO and AISBO vary by bandwidth and interface and this could mean that no unique set of prices for dark fibre consistent with the current TISBO and AISBO pricing structure would be identified.

## Annex 11

## Overview of profitability analysis

A11.1 In the Tables below, we report the high level analysis of BT's profitability across the leased lines markets reviewed in this document. The results presented in these tables are discussed and reviewed in the main body of this document.

**Table 81: Wholesale profitability across traditional interface (TI) services of different bandwidth for 2006/07**

All figures in £m	RoCE %	Turnover			Profit
		Total	Internal	External	
<b>PPCs 64kb/s</b>					
Total (trunk & origination)	(14%)	142	116	26	(55)
<b>PPCs 2 mb/s</b>					
Subtotal origination market	7%	429	286	143	56
Trunk	105%	215	165	50	157
Total across origination & trunk	23%	644	451	193	213
<b>PPCs 34/45 mb/s</b>					
Subtotal origination market	6%	67	51	16	9
Trunk	31%	46	38	8	19
Total across origination & trunk	13%	113	89	24	28
<b>PPCs 140/155 mb/s</b>					
Subtotal origination market	48%	132	119	13	76
Trunk	0%	22	21	1	-
Total across origination & trunk	36%	154	140	14	76
<b>SDSL</b>					
	83%	7	7	-	5

Source: BT additional regulatory financial statements

**Table 82: Wholesale profitability across alternative interface services of different bandwidth for 2006/07**

All figures in £m	RoCE %	Turnover			Profit	MCE
		Total	Internal	External		
<b>Wholesale extension and end-to-end services</b>						
10 mb/s	1%	×	×	×	×	×
100 mb/s	33%	×	×	×	×	×
1 000 mb/s	88%	×	×	×	×	×
Other	58%	×	×	×	×	×
Total	15%	249	210	39	89	586

Source: BT additional regulatory financial statements

**Table 83: Retail profitability across traditional interface and alternative interface services for 2006/07**

All in £m	Profitability measures		Turnover			Net profit	Value Added
	RoS	RoVA	Total	External	Internal		
	a = f/c %	b = f/g %	c = d + e	d	e	f	g
<b>Leased lines</b>							
<i>Low bandwidth traditional interface (TI) circuits</i>							
Digital TI 2 mb/s <= 8mb/s	BT has not provided the information we require to isolate this profitability						
Digital TI < 2 mb/s	15%	49%	120	120	-	18	37
Analogue	44%	70%	79	79	-	35	50
SDSL	0%	n/a	6	2	4	-	-
<b>Subtotal (BT SMP 2004 LLMR)</b>	<b>26%</b>	<b>61%</b>	<b>205</b>	<b>201</b>	<b>4</b>	<b>53</b>	<b>87</b>
<i>Other (digital)</i>							
Traditional interface	12%	52%	507	458	49	60	116
Alternative interface	✗	✗	✗	✗	✗	✗	✗
<b>Subtotal other leased lines</b>	<b>✗</b>	<b>✗</b>	<b>✗</b>	<b>✗</b>	<b>✗</b>	<b>✗</b>	<b>✗</b>
<b>Total leased lines</b>	<b>✗</b>	<b>✗</b>	<b>✗</b>	<b>✗</b>	<b>✗</b>	<b>✗</b>	<b>✗</b>

Source: BT (unregulated) retail regulatory product group financial statements

#### Notes

Digital TI < 2 mb/s (low bandwidth TI circuits) = BT's Kilostream retail regulatory product group. Contains 'retail' sales to mobile operators

BT SMP 2003/04 Review = markets in which Ofcom determined BT held SMP when concluding the 2004 Leased Line Market Review.

Note this total does not contain BT's 1 mb/s and 2 mb/s carried over its SDH network.

Traditional interface (Other (digital)) = BT's Megastream retail regulatory product group.

Contains 1 mb/s & 2 mb/s circuits carried over BT's SDH network as well as circuits of higher bandwidth. Also contains 'retail' sales to mobile operators.



## Annex 12

# Comparison of BT's wholesale Ethernet service prices with costs

### Introduction and summary

- A12.1 The purpose of this annex is to set out a high level comparison of the price of BT's wholesale Ethernet services with the Ofcom's preliminary assessment of the cost of delivering those services.
- A12.2 We were prompted to do this as a result of a complaint from another network operator, which alleged that wholesale price changes announced on 14 March 2007 were not cost-orientated. Specifically, the operator complained that shorter distance lower bandwidth Ethernet circuits had become much more expensive in comparison with the (retail) services it had been purchasing up until that point (the option of continuing to buy retail circuits was no longer attractive because the price of those circuits was increasing to reflect the higher costs of the upstream wholesale inputs).
- A12.3 We decided not to open a full investigation because we considered that the issues raised in the complaint were likely to be dealt with in the LLMR. In this annex we set out the results of the work performed so far.
- A12.4 Based on the work performed to date using 2006/07 cost data, it does not appear that the network operator's particular complaint about shorter distance lower bandwidth WES circuits is supported by the data gathered. However our preliminary analysis suggests that:
- overall revenues for WES/WEES<sup>195</sup> services exceed our estimate of fully attributed costs (FAC) by the order of over 10%;
  - the current pricing structure for WES/WEES is unbalanced: in general connection charges appear to significantly exceed and some local end rental charges fall below underlying FAC costs; and
  - backhaul per metre distance charges are double fully attributed cost.
- A12.5 We are proposing to price control alternative interface services in future. Work is underway to set charge controls from 1 October 2008. We are actively considering whether there should be a one-off adjustment to individual charges at the outset. With this aim in mind we are seeking to refine our understanding of the underlying costs of these services. We plan to consult on our pricing proposals for services within the scope of the charge control, including those for alternative interface services, in the Spring 2008.

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<sup>195</sup> BT prices both wholesale extension services (WES) and wholesale end to end extension services (WEES) in exactly the same way. For the purpose of this analysis we have treated these two services as BT has i.e. as if they are exactly the same service.

Context

The services

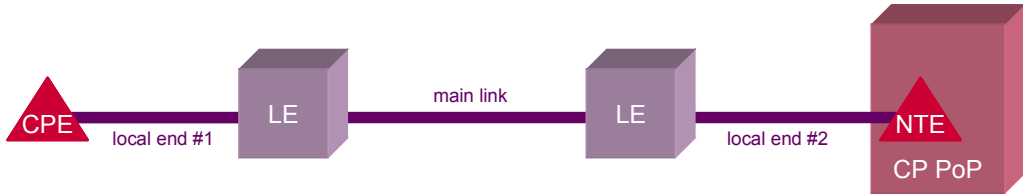
A12.6 In our previous 2004 leased line market review we identified the alternative interface symmetric broadband origination (AISBO) wholesale market as one in which BT had significant market power (SMP). Two of the remedies imposed as a result were cost orientation and non-discrimination.

A12.7 The two principal service groupings that fall within the AISBO market are wholesale extension services (WES/WEES) and backhaul extension services (BES). We illustrate these three different services in the figures below.

Figure 12.1: Wholesale end-to-end service (WEES)



Figure 12.2: Wholesale extension service (WES)

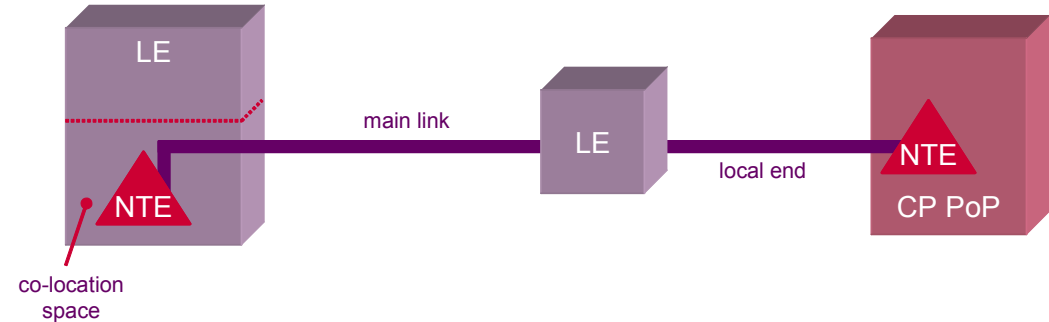


- Key
- CPE customer premises equipment (located at a business end user’s premises)
- LE local exchange
- NTE network terminating equipment (located at communication provider’s premises)
- CP PoP communication provider’s point of presence

A12.8 Wholesale extension services are leased lines which either connect one end user to another end user (WEES) as illustrated in Figure 12.1 or one end user to a communication provider’s premises (WES) as per Figure 12.2.

A12.9 Communication providers (CPs) purchase backhaul extension services to connect broadband traffic from their DSLAMs in BT exchange buildings to their own premises as we illustrate in Figure 12.3.

Figure 12.3: Backhaul extension circuit (BES)



A12.10 WES and BES services have common elements, namely

- the exchange building to exchange building 'backhaul' ('main link') circuits for WEES/WES services are identical to the standard and 'daisy chain' circuits used for backhaul extension services
- the electronics equipment for any particular bandwidth located at either end of the circuit is the same

A12.11 The principal difference between the two services is that wholesale extension services always include a local access link, described as a local end, between the serving exchange and the end user ('local end 1' in figures 1 and 2). For backhaul extension services the local end access link is either between the BT exchange building nearest the CP premises and the CP's premises or the CP's point of presence with the exchange building itself.

A12.12 On March 14 2007 BT Openreach announced revised pricing for its portfolio of wholesale Ethernet services effective from June 2007. The price rises for 10 mb/s circuits, the most popular bandwidth, were to be staggered in three stages over a period from June 2007 to June 2008. These services are not however currently subject to a charge control.

A12.13 The revised prices reflect a rebalancing between:

- circuits of different bandwidths i.e. prices are less bandwidth variant than before; and
- upfront and ongoing charges i.e. lower connection but higher rental charges than before.

### **Communication provider's complaint**

A12.14 A CP lodged a complaint with us on 11 May 2007 regarding BT's WES/WEES product portfolio. In the complaint the CP alleged that the wholesale price changes announced on 14 March 2007 were not cost-orientated in breach of BT's SMP condition HH3. It also complained that BT was in breach of its obligation not to unduly discriminate.

A12.15 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 does not purchase in order to compete against BT, had become cheaper.

A12.16 We decided not to open a full investigation because we considered that the issues raised in the complaint were likely to be addressed in the LLMR. In this annex we set out the results of the work performed so far.

### **Ofcom analysis**

#### **Scope of review**

A12.17 As noted above, following a finding that BT had significant market power (SMP) in the AISBO wholesale market we imposed remedies including cost orientation and non-discrimination.

- A12.18 Neither the 2005/06 nor the 2006/07 BT regulatory financial statements contain the level of detail required for us to consider the CP's concerns about BT's pricing.
- A12.19 Furthermore we found out that for 2006/07 BT intended to attribute the total cost of the alternative interface electronics at either end of the circuit between connection services of different bandwidths on the basis of the *price* of that service. As the cost of the electronics for each service can be specifically identified a direct allocation of costs is more appropriate.
- A12.20 We therefore decided to adjust BT's FAC costs and compare them with its prices. We sent BT a formal information request on 7 August 2007 to obtain the necessary cost and volume information.
- A12.21 For this particular exercise we confined ourselves to comparing costs prepared on a fully attributed cost (FAC) basis with individual service prices. We therefore did not attempt to obtain incremental ("floor") and standalone cost ("ceiling") information. In principle a range of prices could be consistent with BT complying with its cost orientation obligations, with the FAC being only one such value.
- A12.22 We limited our comparison to BT's principal WES/WEES and BES services as per BT's published price list. These were defined as being:
- rental charges per end;
  - per metre distance charges; and
  - connection charges.
- A12.23 As a consequence, ancillary charges (e.g. for excess construction or resilience) and backhaul network services (BNS) were not included in the analysis.
- A12.24 We were unable to prepare estimates of costs for daisy chain circuits separately from standard BES circuit costs as the data were not available. As a result we only present the results of our analysis for WES/WEES circuits, which are the services the CP complained about.

### **BT's pricing & costing practices**

- A12.25 Interested parties can draw robust conclusions from comparisons of prices to costs if, and only if, costs are matched to the prices to which they relate. For example we are aware that the way in which BT accounts for certain costs can differ from the way in which it recovers that costs. We therefore reviewed how BT matched costs to prices.
- A12.26 This highlighted a number of issues regarding BT's current practices as summarised below:

#### Electronics at either end of the circuit

- A12.27 BT's current pricing policy recovers end user equipment via upfront charges. This policy applies equally to both alternative and traditional interface (PPC) circuits. Even though the electronics is fully paid for upfront the purchasing communicator provider (CP) does not own the equipment. BT retains ownership of the asset, capitalising and depreciating it over its estimate of its economic useful life in accordance with generally accepted accounting practice.

A12.28 This accounting practice results in a mismatch between prices (i.e. the upfront charges) and reported costs. As the volume of wholesale Ethernet services has been growing substantially from year to year this mismatch is likely to make any unadjusted comparison between prices and costs invalid.

A12.29 In addition returns on capital employed (ROCE) for the overall market will be distorted for the same reason: revenues may be reflected in one (prior) period whilst the matching costs are recognised in subsequent periods.

#### Operating costs reflected in connection charges

A12.30 BT's connection components include not only the capital expenditure on transmission equipment for alternative interface services but any associated maintenance expenditure. BT however intends that such operating costs be recovered via local end charges. This mismatch makes the comparison of costs to prices less robust than would otherwise be the case.

A12.31 It has also been our normal practice when setting prices to recover such operating costs through ongoing (i.e. rental) charges and not through upfront connection charges.

#### Access / backhaul distinction

A12.32 We understand that within its regulatory accounting system BT distinguishes between the access links (i.e. the local end element) and backhaul element (i.e. exchange building to exchange building) of a WES circuit. BT does not however separately identify these elements in the regulatory financial statements even though these two key items are separately priced in the price list. This practice does not allow us to compare the costs of these two services with their price.

#### **Ofcom's cost estimates**

A12.33 Given the significant differences we have found between charges and underlying FAC costs we will consider whether to re-set starting charges within the leased line charge control project. We will also take account more fully of the matching issues highlighted above.

A12.34 In the meantime we have used the data supplied by BT to derive unit costs to compare with BT prices as per the price list as described further below.

A12.35 With the exception of the electronics located at either end of the circuit we included the cost of capital as well as the relevant operating & depreciation costs in our assessment of costs for 2006/07. We did this by multiplying the relevant mean capital employed figure by BT's regulatory cost of capital for alternative interface services, for this exercise taken to be 11.4%. This is the same approach to factoring in capital costs used in the regulatory financial statements to calculate unit costs.

#### Per metre charges for backhaul

A12.36 We divided the total cost for WES backhaul circuits by their respective aggregate volumes in metres across all bandwidths as at 30 September 2006 to derive an average unit cost. This is because this element of a circuit relates to dedicated fibre whose cost of supply does not vary with bandwidth.

Connection charges

- A12.37 Ofcom calculated this in two stages, handling the electronics in a separate way to the other activities recorded by BT within connections.
- A12.38 First of all we eliminated the cost of electronics equipment to leave the maintenance & wholesaling activities as well as any circuit set up costs. We then divided this total by the aggregate volume of connections across all bandwidths for 2006/07 to derive an average unit cost on a fully attributed cost basis. This is a simple fully attributed cost (FAC) approach. In practice we believe only a small element of the cost is likely to be causally directly attributable to circuits of a particular bandwidth.
- A12.39 In place of accounting costs for electronics equipment we used the average unit purchase cost of the electronics for the different bandwidths as supplied to us by BT. This approach allowed us to compare BT's costs to its prices on a more consistent basis.

Local end charges

- A12.40 We divided the total cost for WES fibre access links identified by BT by the aggregate volume of local ends across all bandwidths as at 30 September 2006 to derive an average unit cost.
- A12.41 As BT was not able to separately identify the costs for the local reach, managed and unmanaged local ends for its 10 mb/s wholesale extension services we have had to assume for this analysis these costs do not vary by bandwidth.

**Summary of results and our interpretation**

- A12.42 First of all we set out and interpret the results of our comparison between prices and costs for individual services. As it is clear that rental and connections charges are unbalanced even when assessed on the basis of BT's current policy of recovering electronic costs upfront we have also calculated profitability by circuit bandwidth / type. This way we could evaluate whether there appeared to be over-recovery at a broader level. Lastly we summarise our findings in relation to how BT accounts for its costs.

**Comparison between prices and costs for individual services**Per metre charges for backhaul

- A12.43 Our calculations of the cost per metre of backhaul indicate that this price is roughly double the underlying fully allocated cost (circa 50p per metre versus circa 26p).

Connection charges

- A12.44 We show prices for three different time periods, from June 2006 when BT first introduced these wholesale services, September 2006 and June 2007. It was the prospect of the June 2007 and subsequent prices that prompted the CP to complain to us.

**Table 12.1: BT WES / WEES connection charges: prices v costs**

	Connection charges in £s (rounded)			
	Prices at			06/07 cost
	12/07/06	30/09/06	14/06/07	
WES10	2,700	2,700	2,200	1,500
WES10 local reach	2,700	2,700	2,200	1,500
WES10 managed	n/a	2,800	2,500	1,500
WES100	2,800	2,800	2,800	1,600
WES155	4,500	4,500	4,500	1,600
WES622	5,200	5,200	5,200	2,700
WES1000	5,200	5,200	5,200	2,700
WES1000ER	n/a	6,500	6,500	3,600
WES2500	n/a	11,000	10,000	10,000
WES10000	n/a	20,000	14,000	20,000

Source: Ofcom analysis based on information supplied by BT

A12.45 The costs shown in the above table will be overstated to the extent that they contain a certain level of ongoing costs such as maintenance. See paragraphs A12.30 and A12.31.

A12.46 BT has also stated that it prices the WES 10 000 local end rental charges such that they recover an element of the connection costs.

A12.47 Apart from WES 2 500 & 10 000 services connection charges appear to be well above cost.

### Local end charges

**Table 12.2: BT WES / WEES local end charges: prices v costs**

	Local end charges in £s per year (rounded)			
	Prices at			06/07 cost
	12/07/06	30/09/06	14/06/07	
WES10	1,200	1,200	1,500	2,800
WES10 local reach	780	780	1,200	2,800
WES10 managed	n/a	2,100	2,100	2,800
WES100	2,800	2,800	2,800	2,800
WES155	5,200	5,200	5,200	2,800
WES622	10,000	10,000	8,500	2,800
WES1000	9,800	9,800	7,500	2,800
WES1000ER	n/a	11,000	9,500	2,800
WES2500	n/a	14,000	11,000	2,800
WES10000	n/a	19,000	13,000	2,800

Source: Ofcom analysis based on information supplied by BT

A12.48 These results indicate that BT's charges for local ends do not cover their costs when assessed on a fully attributed basis for the 10 mb/s bandwidth, the bandwidth that the CP most frequently buys from BT. However charges exceed our estimate of FAC costs for the higher bandwidths.

A12.49 The costs will be somewhat understated as they do not contain any ongoing costs for activities other than access fibre. See paragraphs A12.30 and A12.31.

## Profitability by wholesale extension circuit type

A12.50 We also calculated profitability by circuit type to indicate:

- which type of circuits generated the most revenue and were most profitable for BT; and
- whether BT was over-recovering over these services as a whole.

A12.51 We did this by multiplying both the unit prices and our calculated unit costs by the volumes BT had supplied us with. The results of this exercise are shown in table 3. As explained in A12.35 the costs used in our calculations already factor in BT's cost of capital. This means that where profits are positive BT is more than covering all its costs, and the greater the profit the greater the extent of its return in excess of its cost of capital.

A12.52 BT earns the majority of its revenues from the 10 mb/s and 100 mb/s bandwidth circuits. Revenue from the "backhaul" element of a circuit (i.e. the sections between BT local exchanges) is nearly as much as local rental income. As already indicated by the results from the comparison of unit costs and prices the backhaul element BT appears to be making losses on its local end rental charges but profits on the backhaul and connection elements.

A12.53 We make these findings on the basis of comparing fully attributed costs with BT's prices. This gives us an indication of whether prices are broadly in line with costs but not whether individual service prices are cost-orientated.

**Table 12.3: Revenues and FAC profitability for individual WES/WEES services**

	Calculated revenues (£m)			Profitability net of cost of capital (£m)		
	Rentals	Conn	Total	Rentals	Conn	Total
WES10	⌘	⌘	⌘	(42)	13	(29)
WES10 local reach	⌘	⌘	⌘	(3)	0	(3)
WES10 managed	⌘	⌘	⌘	-	-	-
WES100	⌘	⌘	⌘	(1)	8	7
WES155	⌘	⌘	⌘	1	0	1
WES622	⌘	⌘	⌘	1	0	1
WES1000	⌘	⌘	⌘	11	1	13
WES1000ER	⌘	⌘	⌘	1	0	1
WES2500	⌘	⌘	⌘	-	-	-
WES10000	⌘	⌘	⌘	-	-	-
Subtotal local ends	⌘	⌘	⌘	(32)	22	(10)
Backhaul (regardless of bandwidth)	⌘	⌘	⌘	41	n/a	41
Total WES/WEES services	186	52	238	9	22	32

Source: Ofcom analysis based on information supplied by BT

A12.54 In summary the analysis in Table 12.3 suggests overall revenues may be over 10% above fully attributed costs (£32m "excess" profit on £238m). Note that this order of magnitude is indicative as it is based on only one's year's cost data. In addition we have not, at this stage, sought to adjust for any exceptional cost items that may have occurred in this period.

A12.55 We also checked whether this more granular analysis was broadly similar to the profits reported in BT's regulatory financial statements. The revenues and cost



generated by both sets of analysis appear to be around the same size giving a measure of comfort that our more granular analysis should be broadly consistent with the published information

## Other findings

A12.56 Through this exercise we have gained a better awareness of how BT accounts for these services for regulatory reporting purposes. As a result of this work we have identified a number of practices that we believe BT can improve on. For example:

- match the accounting for the electronics at either end of the circuit to the desired pricing policy;
- identify 'backhaul' per metre charges separately from other rental charges;
- identify all bandwidths offered;
- differentiate between varieties e.g. WES10 versus WES10 local reach and WES10 managed local ends;
- capture ongoing costs such as electronic maintenance charges in rental components;
- identify WES and WEES service local ends separately; and
- exclude the cost of backhaul network services (BNS) from within WES/WEES circuits in the regulatory financial statements

A12.57 We will be taking these matters up with BT both through our regulatory reporting programme and our price control project work.

## Next steps

A12.58 There do appear to be significant issues with how BT currently prices its wholesale Ethernet services. The most significant issue appears to be that the elements of service that comprise a complete circuit do not appear individually closely related to FAC cost.

A12.59 One of the remedies we propose is to price control alternative interface services. Work is underway to set these charge controls from 1 October 2008. We are actively considering whether there should be a one-off adjustment to individual charges at the outset. Rebalancing charges in line with costs would be one reason for making such adjustments. We will therefore be developing the analysis we have performed so far to inform our decision making within the leased line charge control project.

## Annex 13

# Replicability and the PPC Charging Model

## Introduction

- A13.1 Ofcom recently reviewed the replicability of a range of services provided by BT in retail markets in which it has Significant Market Power (SMP). One of the markets covered by the review was the market for low bandwidth traditional interface leased lines<sup>196</sup>. The purpose of the review was to determine whether competing Communications Providers (CPs) were able to replicate, technically and commercially, the retail services provided by BT, and whether the regulation of BT's pricing practices in the retail market should therefore be relaxed.
- A13.2 The findings of this review were set out in statement published in April 2006. In relation to low bandwidth leased lines, one of the conclusions was that the pricing model for Partial Private Circuits might be operating as an impediment to replicability, and that further investigation of this issue was required. This paper summarises the further work which has been carried out on this issue, and our view on whether the operation of the pricing model acts as an impediment to replicability.
- A13.3 Partial Private Circuits (PPCs) are a wholesale remedy designed to allow other CPs (OCPs) to compete with BT in the retail market for leased lines. The requirement on BT to offer PPCs flows from its having SMP in the wholesale markets for Traditional Interface Symmetric Broadband Origination (TISBO) and Trunk Segments.
- A13.4 In accordance with the 2004 Leased Lines Market Review and the Undertakings entered into by BT in July 2006, BT supplies PPCs on an 'Equivalence of Outcome' (EOO) basis. BT's own downstream business is not required to purchase the same wholesale inputs using the same systems as OCPs, as would be the case under an 'Equivalence of Inputs' (EOI) regime. However, BT is subject to accounting separation obligations, which are designed to ensure that the transfer charges attributed to its retail products are equivalent to those that would be paid by an OCP.
- A13.5 During the Replicability review, a number of OCPs expressed concern that the operation of this pricing or charging mechanism was not equivalent, and gave BT's downstream business a competitive advantage in the retail market. Their argument was that the costs attributed to BT's downstream services were lower than those charged to OCPs, and that this gave BT the ability to undercut its competitors, without appearing to incur losses on those retail services. In the present review, we have not looked at BT's pricing behaviour in the relevant retail markets, and we have only obtained a limited amount of information on the profitability of BT's unregulated downstream products. The focus has instead been on trying to establish whether the PPC costs attributed to BT's own downstream services are equivalent to those charged to competitors.
- A13.6 One of the initial concerns was that the way in which circuits were physically routed through the network may not be equivalent i.e. that the routing of OCP circuits may be less efficient than the routing of BT circuits. BT has assured Ofcom that the

<sup>196</sup> Low bandwidth leased lines were defined in the 2004 Leased Lines Market Review as being leased lines with a capacity of up to and including 8Mb/s.

processes used to plan network routings are the same for OCP and BT circuits. It is nevertheless the case that OCP circuits have to be routed via the relevant points of handover, for the purpose of interconnecting with the OCP network, and that this constraint does not apply to BT's retail circuits.

- A13.7 The requirement to interconnect at Tier 1 nodes introduces an element of inefficiency into the physical routing of PPCs purchased by OCPs which can be attributed to the design of the regulatory model. Whether this translates into a commercial disadvantage for OCPs, however, depends on the way in which transfer charges are applied to BT's own downstream services.
- A13.8 Under the terms of its SMP obligations, BT is supposed to charge its downstream services for the use of PPCs on the same basis that it would charge an OCP. This means that the PPC transfer charges levied on a BT retail circuit should be calculated on the assumption that the circuit was physically routed via the relevant Tier 1 nodes. Whether or not the circuit was actually routed in this way is irrelevant. From the point of view of establishing equivalence and supporting replicability, the critical issue is whether the transfer charging system treats internal and external circuits in the same way.
- A13.9 Ofcom recognises that, even if BT and OCP circuits were treated equally in terms of their parent Tier 1 routing, there are other factors which could give rise to cost differences between BT and OCP services. Firstly, even the larger OCPs do not interconnect with BT's network at all of its Tier 1 nodes. This introduces a different constraint for some OCP circuits, which as a result have to be routed via the nearest Tier 1 node at which the OCP is interconnected. In Ofcom's view, this feature of the charging model provides the OCP with an appropriate incentive to build out its network, in order to interconnect at more Tier 1 nodes.
- A13.10 Secondly, OCPs bear the costs of the interconnect circuits which link their networks to BT's network. No comparable costs are incurred by, or attributed to, BT's downstream services under the current charging regime.
- A13.11 One of the difficulties faced by OCPs is that it is very difficult for them to assess whether the transfer charging process for PPCs has been operating in an equivalent manner. OCPs may suspect that the costs attributed to BT's retail products are too low, and that this has given BT greater pricing freedom in the retail market, but they are unable to determine whether this is in fact the case. Ofcom, too, is concerned about the transparency of accounting separation transactions. They should not only provide equivalence; they should be seen to be doing so.
- A13.12 In this further review, we have looked in detail at the operation of the transfer charging system for PPCs, and considered the extent to which it supports equivalence and replicability. BT has provided written comments on a previous draft of this paper and these have been taken into account in the present version.

## PPC Revenues

- A13.13 As a first stage in the analysis, we obtained data from BT on the breakdown of external PPC revenues. The aim here was to establish which of the PPC charges generate the most revenue for BT, and are the most commercially significant for OCPs. A breakdown of PPC revenues in 2005/6 is given in Tables 88 and 89.

**Table 84:** Breakdown of External PPC Revenues 2005/06, £000

	Connection	Rental	OSP	Other	Total
64k	✂	✂	✂	✂	✂
128-256k	✂	✂	✂	✂	✂
312-1024k	✂	✂	✂	✂	✂
2Mb	✂	✂	✂	✂	✂
34/45Mb	✂	✂	✂	✂	✂
140/155Mb	✂	✂	✂	✂	✂
622Mb	✂	✂	✂	✂	✂
Third party equipment	✂	✂	✂	✂	✂
Point of handover					
CSH	✂	✂	✂	✂	✂
ISH	✂	✂	✂	✂	✂
Resilience	✂	✂	✂	✂	✂
Total	✂	✂	✂	✂	✂

**Table 85:** Breakdown of External PPC Revenues 2005/06, %

	Connection	Rental	OSP	Other	Total
64k	✂	✂	✂	✂	✂
128-256k	✂	✂	✂	✂	✂
312-1024k	✂	✂	✂	✂	✂
2Mb	✂	✂	✂	✂	✂
34/45Mb	✂	✂	✂	✂	✂
140/155Mb	✂	✂	✂	✂	✂
622Mb	✂	✂	✂	✂	✂
Third party equipment	✂	✂	✂	✂	✂
Point of handover					
CSH	✂	✂	✂	✂	✂
ISH	✂	✂	✂	✂	✂
Resilience	✂	✂	✂	✂	✂
Total	✂	✂	✂	✂	100%

A13.14 The tables show that low bandwidth PPCs account for a large proportion of total PPC revenues. In terms of charging elements, rental and connection charges for links and local ends account for the bulk of revenues. Other Single Payment (OSP) charges, which include Excess Construction Charges, are much lower but still significant. One-off charges for equipment installed at third party premises are important, generating £33m of revenue in 2005/06. Most of this revenue was

associated with equipment for 2Mb circuits, following the bandwidth pattern of the connection and rental revenues.

A13.15 The numbers in Table 88 are taken from the General Ledger, and are not the same as the numbers in the regulatory accounts. The latter are built up through a price x quantity analysis of PPC volumes and charges in the PPC price list. Total PPC revenues shown in the regulatory accounts for 2005/06 were £204.5m, which is about 10% lower than the amounts actually paid by OCPs. Ofcom requested that BT reconcile these two different revenue measures for external sales but the reasons for this discrepancy are not clear from the information provided.

## Transfer Charges to BT Retail services

### Pattern of charges

A13.16 Table 90 shows the breakdown of transfer charges to BT's retail products in 2005/06, for low bandwidth PPC services.

**Table 86: PPC related transfer charges – up to 8 mb/s, 2005/06**

Retail product groups	Rental (£000)	Connection (£000)	Total (£000)	%
Megastream	✂	✂	✂	✂
Kilostream N64 rentals	✂		✂	✂
Kilostream rentals	✂		✂	✂
IP Clear	✂		✂	✂
Metro IP VPN	✂		✂	✂
Featurenet 1000 (VPN)	✂	✂	✂	✂
Featurenet 5000 (VPS)	✂	✂	✂	✂
Framestream	✂		✂	✂
Flexible Bandwidth	✂		✂	✂
Speech / Keyline Rentals	✂		✂	✂
Cellstream/ATM	✂		✂	✂
Broadcast Services	✂		✂	✂
Other product groups			✂	✂
Total			720,000	100%

A13.17 The most striking feature of the table is that all the charges to internal services appear to be rental and connection charges – there are no charges for OSP, resilience or third party equipment. This appears to be a significant omission, as these charges taken together account for about 20% of external PPC revenue.

A13.18 The internal services also do not incur any Point of Handover costs. This is to be expected, as BT's own services do not require network interconnection.

A13.19 BT has also provided Ofcom with more detailed information on the transfer charges for some of the retail services. The data for Megastream, which is easily the largest internal recipient of PPC charges, are shown in Table 91.

**Table 87: PPC Transfer Charges to Megastream Service – bandwidths up to 8 mb/s, 2005/06 (£000)**

	Rental	Connection	Total
PC Rental 2Mbit link	✂	✂	✂
PC Rental 2Mbit link per km distribution	✂	✂	✂
PC Rental 2Mbit link per km trunk	✂	✂	✂
PC Rental 2Mbit local end copper	✂	✂	✂
PC Rental 2Mbit local end fibre	✂	✂	✂
2Mbit PC link connection circuit provision	✂	✂	✂
Total	✂	✂	✂

A13.20 The data in Table 91 confirm that the charges to Megastream were limited to rentals and connection – there is no reference to charges for OSP, resilience or third party equipment services.

### Other single payments

A13.21 In relation to OSP charges, BT agrees that the regulatory accounts do not include separate internal charges to BT Retail for these services, but argues that the amounts involved are not sufficiently material for this to be a barrier to replicability. BT estimates that the amount not currently charged is £6m per annum, which represents 0.5% of BT's total wholesale TISBO and trunk revenue (of £1,260m in 2005/06<sup>197</sup>), BT proposes that this area should be reviewed annually for reporting materiality, as part of the review with Ofcom accountants on regulatory reporting.

A13.22 It is not clear to Ofcom why OSP charges should represent less than 1% of the charges to BT's own downstream services, when they account for 3% of charges to external customers. We understand from BT that the difference may be attributable in part to the reflection of spare capacity charges in external OSP charges, although no supporting evidence has been provided on this. We comment further below on spare capacity charges.

A13.23 Another possible contributory factor, which has been suggested by some CPs, is that when additional construction work is required to meet the needs of BT's own downstream business, this tends to be regarded by BT as a network extension, which would not trigger any excess construction charges. The lower level of OSP charges may therefore reflect the more favourable treatment by BT of its own retail arm. In the absence of evidence to support an alternative explanation, Ofcom is not in a position to rule out this possibility.

A13.24 Even if £6m were an accurate estimate of internal OSP charges, and we do not consider that this has been established, Ofcom does not accept that the omission of OSP charges is irrelevant to an assessment of replicability. In our view, such an assessment should take account of all relevant factors, and the materiality of omitted items should be considered collectively, as well as on their own, in relation to individual downstream product groups.

<sup>197</sup> Note that the £1260m includes both internal and external revenues.

### *Resilience*

- A13.25 In relation to resilience, BT agrees that the regulatory accounts do not include internal charges for reliance monitoring or path protection services. BT estimates the value of these services to be £6m in 2005/06, and proposes that this issue should be discussed with Ofcom as part of the 2007/08 review of regulatory reporting. BT also argues that some of the resilience charges paid by external customers will be picked up in the regulatory accounts, as the additional circuits used to provide resilience for BT's internal services are for the most part included in the circuit volumes used in the "price x volume" calculations.
- A13.26 BT's estimate of £6m represents 0.6% of BT's internal PPC revenues<sup>198</sup>, as against the 0.9% of external revenues accounted for by resilience charges. If we accept that some of the resilience charges are picked up in the circuit volume calculations, BT's estimate may be reasonable. As with the OSP charges, we consider that, although they are comparatively small, the omission of some resilience charges is nevertheless relevant to an assessment of replicability.

### *Third party equipment*

- A13.27 With regard to third party equipment, BT agrees that the regulatory accounts do not reflect the use of third party equipment by its own retail services, and estimates that the undercharge amounted to £14m in 2005/06. BT proposes that this area should be reviewed annually with Ofcom for reporting materiality.
- A13.28 BT's estimate of the undercharge represents 1.4% of internal PPC revenues, as compared with 15% for external customers. Ofcom finds the scale of this disparity surprising. In its response, BT comments that many of its customers are mature retail customers who already have equipment with enough spare capacity to terminate new lines, Ofcom does not consider this to be a sufficient explanation for the large difference in the estimated size of the charges.
- A13.29 Whether or not BT's estimate of the undercharge is accepted as being accurate, Ofcom regards the omission of third party equipment charges as a significant weakness in the regulatory accounts, as well as being relevant to an assessment of replicability.

## **Prices**

- A13.30 The PPC transfer charges in the regulatory accounts are based on price x quantity calculations. In principle the prices used should be the same as those in the PPC price list, and we have reviewed BT's calculations to see if this was the case in 2005/06.

### Transparency

- A13.31 For the most part, it has been possible to follow the trail provided by BT from the transfer prices published in the accounts to the PPC charges in the Carrier Price

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<sup>198</sup> £6m as a % of £1260m (TISBO & trunk markets) less £281m external sales. The latter includes £83m of radio station backhaul.

List. The list prices changed on October 1<sup>st</sup>, 2005, in accordance with the requirements of the PPC charge control. As a result, the transfer charges used in the regulatory accounts are normally averages of the prices in effect before and after October 1<sup>st</sup>.

A13.32 Ofcom notes that, except in one or two instances, the calculations provided by BT are based on several separate entries in the price list. On occasions constants are also applied to derive the average prices appearing in the accounts. As the precise nature of the calculations is not explained either in the regulatory accounts or in the supporting documentation, this does reduce their transparency. It is our view that these calculations should, in the spirit of the regulatory accounting principle of transparency, be set out in such a way that a suitably informed reader can make his or her own judgement as to their reasonableness.

### CLZ charging

A13.33 In addition to the transparency point, four substantive issues have been identified. The first is that no account is taken in the regulatory accounts of the lower main link and local end charges available to OCPs for 2Mbit/s PPCs in the Central London Zone (CLZ). The higher, non-CLZ, prices are applied to all circuits when determining the transfer charges. In this respect, the transfer charges to BT's retail services are likely to be overstated. BT estimates the impact of this as being £13m in 2005/06.

### Local end price adjustment

A13.34 The second issue concerns a downward adjustment of about 30% which is used to derive the internal transfer charges for local ends. This adjustment factor dates back to Oftel's PPC Phase II Determination in November 2002, and was designed to take account of the fact that the external local end charges are designed to cover some Point of Handover costs which BT services do not incur. This adjustment factor has a significant impact on the overall level of PPC transfer charges, reducing the total by about £80m in 2005/06. We are concerned that the adjustment factor has not been updated since 2002, as the costs on which it was based may well have changed considerably since then.

A13.35 BT argues that the adjustment factor should be revisited as part of a broader review of the PPC charge control, as any alteration is likely to have implications for other PPC charges. Ofcom agrees with this view, and proposes to take this forward in the context of the current Leased Lines Market Review.

### Payment terms

A13.36 The third issue concerns the payment terms on which the transfer charges are based. The PPC charges in the Carrier Price List were initially determined by Oftel using cost information reflecting the assumption that customers would be billed monthly in arrears. In practice, they were billed three months in advance for the majority of services. The effect of this will have been to overstate the charges for both internal and external services. However, given that it is still BT's transfer charging practice through the creation of internal debtors and creditors to reflect payment terms of monthly billing in arrears for all services, the difference between assumed and actual payment terms has translated into a more favourable financial



position for its downstream activities than would be the case for OCPs. In monetary terms this has been worth to BT about 2½% of the value of the PPC transfer charges affected.

- A13.37 Ofcom has recently investigated PPC payment terms, which established the facts outlined in the preceding paragraph. In the final Determination<sup>199</sup> Ofcom directed that BT amend its payment terms without adjustment to the (nominal) price to monthly billing with 30 days to pay. This change in payment terms will serve to reduce, but not eliminate, the value of the existing discrepancy in the regulatory accounts between OCPs and BT.
- A13.38 In responding to this point, BT proposed an update of its regulatory accounting documentation to make transparent its existing practice of using a single, standard set of payment terms for all of its wholesale/retail transfer charges. These payment terms are not the same as those faced by external customers, but are standardised for all internal transactions. BT proposed that the wording of the Primary Accounting Documents should be amended to reflect this position, and that no further modifications were required.
- A13.39 In our view, the payment terms used BT for the purposes of wholesale/retail transfer charging are not consistent with the principle of equivalence. In order to achieve equivalence, the payment terms used for transfer charging should reflect those which apply to external customers of the wholesale products concerned. BT's current practice, and its proposed modification of the regulatory accounting documentation, does not meet this requirement.

### Spare capacity charges

- A13.40 The fourth issue is that 2 mb/s connection charges in 45% of cases are based on the use of spare capacity on equipment installed before the PPC Phase II Determination. The pricing methodology for such circuits is different to that employed when equipment installed after this time is used (this is illustrated in BT's Carrier Price List). Ofcom is not clear about the justification for the alternative pricing approach and has not been able to determine whether or not these charges fully reflect the extent to which third party infrastructure is utilised both by BT and competing providers.
- A13.41 In response to this point, BT stated that the charges for the use of spare capacity on equipment installed before the Phase II Determination ceased as from 1<sup>st</sup> April 2007. BT did not make explicit what charges would in future be raised were a new circuit to be provided on 'spare capacity' and so we are currently unsure whether this change will make BT's transfer charges more, or less, equivalent in this respect than before.

### **Volumes**

- A13.42 It has proven difficult to make much progress in this critically important area.

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<sup>199</sup> Determination of a dispute between THUS and BT about payment terms for PPCs, IECs and IBCs, 27 January 2007

- A13.43 In principle, the use made of PPC inputs by BT retail services should be determined on the basis that circuits are routed via the parent Tier 1 node(s) which serve the locations housing the circuit ends. This means, for example, that a Megastream circuit from Canterbury to Cambridge should be charged on the assumption that the circuit is routed via the Tier 1 nodes which serve the Canterbury and Cambridge sites. The per km charges for distribution and trunk links should reflect this routing.
- A13.44 BT has informed us that this is indeed how the transfer charges are determined, but has not provided any direct evidence to support this contention. In its response, BT referred to the work that has been done to improve the system for allocating the costs of PPCs between trunk and terminating segments. In our view, that misses the point. The improvements in the PPC costing system were designed to provide better information on the relative profitability of trunk and terminating segments. They were designed to show how the *costs* of provision should be split between the two service categories, and should have no bearing on the revenues derived from them.
- A13.45 The present concern is with revenues, not costs. From a replicability viewpoint, the relevant issue is whether the *revenues* derived from internal PPC services are calculated using the notional routing rules described above. BT has provided no evidence to show that this is the case. We have therefore been unable to verify that the volumes used in the P\*Q calculations have been derived in a manner which is consistent with the principle of equivalence, or which would support replicability in the downstream retail markets. Looking ahead, we consider it important that the notional routing rules are set out in the regulatory accounting documentation so that BT's regulatory auditors can give assurance on their application.

## Conclusions

- A13.46 The conclusions of this paper are as follows:
- i) In a number of respects, BT's regulatory accounting practices do not appear to provide for equivalent treatment of PPC inputs provided to internal and external customers. In particular, there are no transfer charges to internal services in respect of OSP services, resilience monitoring or path protection services, or the provision of equipment on third party premises. Together, these charges account for about 20% of the revenues received from external customers. In one respect – the failure to take account of CLZ discounts – the accounting treatment is likely to overstate the charges attributed to BT's downstream services. Overall, however, it is likely that the transfer charges to BT's retail services are understated, possibly by a significant amount. This is a matter of concern, as it could place OCPs at a competitive disadvantage in the retail market for low bandwidth leased line services.
  - ii) We are concerned that the price adjustment applied to the local end services used by BT's downstream services is now badly out of date. It should be updated as part of the broader review of the PPC charge control, which will be carried out in conjunction with the ongoing Leased Lines Market Review.
  - iii) We are concerned that the payment terms reflected in BT's downstream accounts have been significantly more favourable than those enjoyed by competing communication providers and in future will not reflect the actual terms offered to external customers.

- iv) We have not been able to verify that the volumes used for internal services in the transfer charging process have been derived in a manner consistent with the principle of equivalence, or that would support replicability in the retail market.
- v) The information available in the regulatory accounts, even when subjected to detailed probing, does not allow a clear judgment to be made regarding the extent to which BT is currently treating OCPs and its own downstream services on an even-handed basis. Given this lack of transparency, neither Ofcom nor industry stakeholders can be confident that the regulatory regime is working as it should in relation to low bandwidth retail leased lines.

A13.47 Overall, we do not believe that it will be possible to conclude that replicability has been achieved in the retail market for low bandwidth leased lines until these issues have been addressed. BT has indicated its willingness to continually review the rules of reporting for PPCs in the regulatory accounts and Ofcom is now in discussion with BT about how the issues identified in this paper can be tackled.

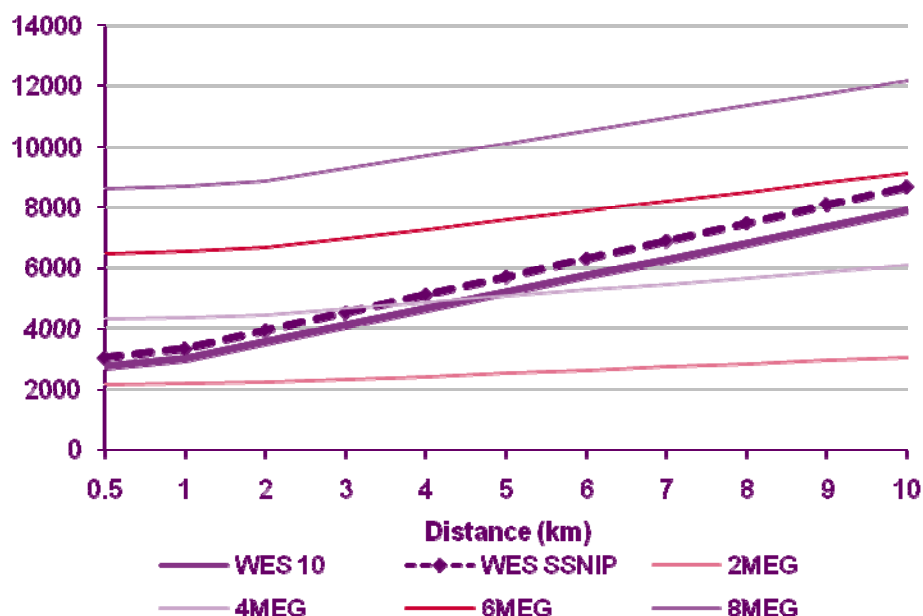
## Annex 14

## Price analysis for low bandwidth leased lines

### Introduction

A14.1 In Section 3, Ofcom compared the relative competitive prices of retail AI and TI services at low bandwidths (as shown in Figure 111 below). It was noted that there may however be a set of users with bandwidth requirements between 2 Mbit/s and 6Mbit/s where the choice between AI or TI (in price terms) would be less clear over the various lengths. In this annex, we assess the likely impact of a SSNIP based on the likely distribution of circuits. Our broad conclusion is that low bandwidth AI and TI services would not impose a competitive constraint on each other (given the distances over which these circuits are purchased).

Figure 111: PPC/WES price comparison, low bandwidth circuits



Source: Ofcom 2007

### Comparison of low bandwidth circuits

A14.2 As shown in Figure 111 there may be a set of users with bandwidth requirements between 2 Mbit/s and 6Mbit/s where the choice between AI or TI (in price terms) would be less clear over the various lengths. The above figure suggests there could be a zone within which a SSNIP may lead to switching, for circuits around 3-4km in length, (this is where the customer's needs can be met by either a 10Mbit/s Ethernet circuit or two 2Mbit/s SDH/PDH circuits). Over shorter distances, an Ethernet circuit would be cheaper than two 2Mbit/s links, though more expensive than one; over longer distances, an Ethernet circuit would be more expensive than two 2Mbit/s links, but cheaper than three.

A14.3 Whether or not AI and TI may constrain each other at low bandwidths very much depends on the distribution of demand (i.e. if there are a large number of end-users

are purchasing leased lines to meet bandwidth requirements of between 2 and 6Mbit/s). If there are large numbers of customers (existing and potential) with requirements for capacity greater than 2Mbit/s and below 6Mbit/s then there is a greater prospect that AI and TI might constrain each other.

- A14.4 If the majority of users at low bandwidths are grouped respectively at 2 or 6Mbit/s and above, then this would reduce the likelihood that the two services might constrain each other. This is because it will be clearly more economic for a user to use one 2Mbit/s SDH/PDH circuit for requirements at 2Mbit/s and below (at any distance) and more economic to use a 10Mbit/s Ethernet circuit for bandwidth requirements at 6Mbit/s and above.

#### *Distributional analysis for AI and TI circuits*

- A14.5 Ofcom does not have evidence available to consider the distribution of bandwidth requirements directly (i.e. whether a purchaser of a 10Mbit/s Ethernet circuit only requires a fraction of that bandwidth to meet their capacity requirements)<sup>200</sup>. This distributional analysis would in any case be complicated by the fact that the observed distribution of circuits might not necessarily equate to the true distribution of circuits that would be observed under competitive price conditions.
- A14.6 Ofcom has nevertheless undertaken some distributional analysis based on the purchases of low bandwidth SDH/PDH and Ethernet circuits over different circuit lengths shown in Table 88 below. The table is intended to examine the potential impact of a SSNIP applied to WES circuit. This assesses the current proportion of users of WES services that would in fact find a PPC cheaper and how a SSNIP may affect the distribution of sales.

**Table 88: SSNIP analysis on Ethernet services based on circuit distributions**

Bandwidth requirement	% users (with Ethernet services) that would find Ethernet 10Mbit/s cheaper		Percentage point difference
	Pre-SSNIP	Post-SSNIP	
2Mbit/s	0%	0%	0%
4Mbit/s	92%	72%	-20%
6Mbit/s	100%	97%	-3%
8Mbit/s	100%	100%	0%
10Mbit/s	100%	100%	0%
<b>Average (unweighted)</b>	<b>78%</b>	<b>74%</b>	<b>-4%</b>

Source: Ofcom 2007

- A14.7 The above analysis considers for users with a given bandwidth requirement what proportion would currently find it cheaper to purchase a 10Mbit/s Ethernet circuit rather than (multiple) digital SDH/PDH circuits.
- A14.8 This analysis takes into account the current distribution of circuits by distance (i.e. the distance of the circuits purchased by Ethernet users)<sup>201</sup>. For example, Table 82

<sup>200</sup> The information provided by CPs to Ofcom only provides details of the retail circuits purchased at different locations. To understand the actual distribution of bandwidth requirements would require information on the extent to which users of Ethernet circuits are purchasing 10Mbit/s to deliver lower peak capacity requirements. Likewise, for 2Mbit/s SDH/PDH circuits, available circuit data does not allow Ofcom to assess how many end-users are purchasing multiple 2Mbit/s circuits at a particular site to deliver higher bandwidth requirements.

<sup>201</sup> This is based on the distribution of circuits (by length) based on BT's sales

shows that at a 40% utilisation rate (i.e. where users of a 10Mbit/s WES only require 4Mbit/s of capacity), 89% of users currently on Ethernet circuits would indeed find Ethernet to be the cheapest option pre-SSNIP. This reflects the fact that the majority of users are on shorter distance circuits where it would be cheaper to meet the 4Mbit/s requirement using an Ethernet circuit (as shown previously in Figure 99 in the introduction to this Annex).

- A14.9 Given this initial distribution, the analysis then considers the impact of a SSNIP on Ethernet circuits. It shows the users that would now find it cheaper (given the current sales of retail circuits) to switch to an SDH/PDH circuit. The third column shows the number of users that would still find an Ethernet circuit cheaper post-SSNIP (i.e. where the price of an Ethernet circuit is raised by 10%).
- A14.10 At a 40% utilisation rate there is potentially a large number of AI users that might react to this price change by switching to a lower priced bundle of SDH/PDH circuits (this would potentially be a sufficient number of switchers to provide a constraint). On the other hand at higher utilisation rates the number of implied switchers is much lower and would be insufficient to provide a constraint. It can be seen from the table that at an 80% utilisation rate, at distances of 10km and below it would always be cheaper to use a WES. At a 60% utilisation rate, given that most users are purchasing shorter distance AI circuits, almost all users would find it cheaper to use AI circuits. This position would not change materially post-SSNIP.
- A14.11 Ofcom considers that one interpretation that could be drawn from this analysis is that if the current users of 10Mbit/s Ethernet circuits generally have peak capacity requirements in excess of 40% of their capacity then it is unlikely that a SSNIP would prompt switching to multiple SDH/PDH circuits. This distribution analysis is therefore likely to indicate that the majority of circuits lie outside the zone where SDH/PDH and Ethernet circuits might impose a constraint on each other.
- A14.12 Ofcom also repeated the above analysis to consider whether a SSNIP on digital SDH/PDH circuits would potentially prompt switching to a WES service. The results of this analysis suggest that AI would not provide a competitive constraint over digital SDH/PDH circuits. This distributional analysis suggests that, based on current evidence, SDH/PDH and Ethernet services are in separate markets.

**Table 89: SSNIP analysis on Digital SDH/PDH services based on circuit distributions**

Bandwidth requirement	% users (with SDH/PDH services) that would find Ethernet 10Mbit/s cheaper		Percentage point difference
	Pre-SSNIP	Post-SSNIP	
2Mbit/s	0%	0%	0%
4Mbit/s	61%	65%	-3%
6Mbit/s	100%	100%	0%
8Mbit/s	100%	100%	0%
10Mbit/s	100%	100%	0%
<b>Average (unweighted)</b>	<b>72%</b>	<b>73%</b>	<b>-1%</b>

Source: Ofcom 2007

- A14.13 The distributional analysis for a SSNIP on digital SDH/PDH shows that only in the case of users of 2 \* 2Mbit/s (4Mbit/s) would be likely to:
- find a PPC cheaper (but only over longer distances); and

- be prompted to switch to a WES circuit following a SSNIP.

A14.14 This is only a small proportion of users and would be insufficient to constrain a SSNIP as it would entail only a small number of switchers. At higher bandwidths, a WES would always be cheaper than 3 or more 2Mbit/s circuits. In addition, for 2Mbit/s a PPC would be cheaper (pre and post SSNIP).

A14.15 The conclusion from the above distributional analysis is that the level of likely switching between low bandwidth AI and TI circuits (in response to a SSNIP) would be insufficient for either service to constrain the other. We note however that this analysis is fact fairly hypothetical in nature as it assumes the only factor driving users' choice of Ethernet or SDH/PDH would be price (i.e. it ignores switching costs or functional differences between AI and digital SDH/PDH circuits). However, even if the analysis does abstract from these additional factors the results would tend to suggest that that AI is not constrained by digital SDH/PDH circuits at low bandwidths. Taking into account switching and functional differences would only serve to strengthen the conclusion that they are in separate markets.

## Annex 15

## Draft SMP conditions and Directions

### ***Proposals for the revocation of notifications, the identification of markets, the making of market power determinations, the setting of SMP service conditions, and the setting of Directions under SMP service conditions***

#### **NOTIFICATION UNDER SECTIONS 48 (2) AND 80 OF THE COMMUNICATIONS ACT 2003**

#### **Proposals for identifying markets, the making of market power determinations and the setting of SMP service conditions in relation to BT and KCOM under section 45 of the Communications Act 2003**

1. The Office of Communications (“Ofcom”), in accordance with sections 48 (2) and 80 of the Communications Act 2003 (the “Act”) hereby makes the following proposals for identifying markets, making market power determinations and the setting of SMP services conditions by reference to such determinations (“SMP conditions”).
2. Ofcom is proposing to identify the following markets for the purpose of making market power determinations:
  - (a) the provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second within the United Kingdom but not including the Hull Area;
  - (b) the provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including forty five megabits per second within the United Kingdom but not including the Hull Area and the Central and East London Area;
  - (c) the provision of alternative interface symmetric broadband origination with a bandwidth capacity up to and including one gigabit per second within the United Kingdom but not including the Hull Area;
  - (d) the provision of wholesale trunk segments at all bandwidths within the United Kingdom;
  - (e) the provision of traditional interface retail leased lines up to and including a bandwidth capacity of eight megabits per second within the United Kingdom but not including the Hull Area;
  - (f) the provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second within the Hull Area;



- (g) the provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including forty five megabits per second within the Hull Area;
  - (h) the provision of alternative interface symmetric broadband origination with a bandwidth capacity up to and including one gigabit per second within the Hull Area; and
  - (i) the provision of traditional interface retail leased lines up to and including a bandwidth capacity of eight megabits per second within the Hull Area.
3. Ofcom in accordance with section 79 of the Act makes the following market power determinations in relation to the markets referred to in paragraph 2 above-
    - (a) in relation to the markets set out in paragraph 2 (a)-(e) above, BT; and
    - (b) in relation to the markets set out in paragraph 2 (f)-(i) above, KCOM.
  4. Ofcom is proposing to set SMP conditions on the persons referred to in paragraphs 3 (a) and (b) above as set out in Schedules 2 and 3, respectively, to this Notification.
  5. Ofcom is proposing to set Directions under some of the SMP conditions referred to in paragraph 4 above on the person referred to in paragraph 3 (a) above as set out in Schedule 4 to this Notification.
  6. Ofcom is proposing that the SMP conditions referred to in paragraph 4 and the Directions referred to in paragraph 5 will become effective unless otherwise stated with publication of the final statement without prejudice to paragraph 7 below.
  7. Insofar as SMP Conditions G4, GG4, HH4 and H4 as set out in Schedule 2 and regarding the basis of charges are concerned these SMP conditions shall become effective at the same time as the 2008 Leased Line Charge Control to be published by Ofcom in 2008.
  8. Insofar as SMP Conditions I1, I2, I3 and I4 as set out in Schedule 2 and regarding the market for the provision of traditional interface retail leased lines up to and including a bandwidth capacity of eight megabits per second are concerned these SMP Conditions shall cease to have effect after 4 years of them coming into effect.
  9. Ofcom is also proposing to amend Part 1 of Schedule 1 to the Notification dated 22 July 2004 setting further SMP services conditions on BT in relation to regulatory accounting in respect of various markets by
    - (a) removing the reference at paragraph 15 to "*Provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second up to and including one hundred and fifty five megabits per second within the UK but not including the Hull Area*" to be replaced with "*Provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including forty five megabits per second within the United Kingdom but not including the Hull Area and the Central and East London Area*" [as defined in the Final Statement]; and
    - (b) removing the reference at paragraph 16 to "*Provision of alternative interface symmetric broadband origination at all bandwidths within the UK but not including the Hull Area*" to be replaced with "*Provision of alternative interface symmetric broadband origination with a bandwidth capacity up to and including one gigabit per second within the United Kingdom but not including the Hull Area*" [as defined in the Final Statement].

Ofcom is also proposing to amend Part 1 of Schedule 1 to the Notification to BT dated 22 July 2004 setting further SMP services conditions on BT in relation to regulatory

accounting in respect of various markets by updating the dates set out for paragraphs 14 – 17 and 25 and replacing the current dates with the date of the Final Statement.

10. Ofcom is further proposing to amend Part 1 of Schedule 1 to the Notification dated 22 July 2004 setting further SMP services conditions on KCOM in relation to regulatory accounting in various markets by
  - (a) removing the reference at paragraph 9 to “*Provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second within the Hull Area*” to be replaced with “*Provision of alternative interface symmetric broadband origination with a bandwidth capacity up to and including one gigabit per second within the Hull Area*” [as defined in the Final Statement]; and
  - (b) removing the reference at paragraph 10 to “*Provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second up to and including one hundred and fifty five megabits per second within the Hull Area*” to be replaced with “*Provision of alternative interface symmetric broadband origination with a bandwidth capacity above one gigabit per second within the Hull Area*” [as defined in the Final Statement]; and
  - (c) removing the reference at paragraph 11 to “*Provision of alternative interface symmetric broadband origination at all bandwidths within the Hull Area*” without replacement.

Ofcom also proposes to amend Part 1 of Schedule 1 to the Notification to KCOM dated 22 July 2004 setting further SMP services conditions on KCOM in relation to regulatory accounting in respect of various markets by updating the dates set out for paragraphs 9 and 10 and replacing the current dates with the date of the Final Statement.

11. Ofcom is further proposing to amend Part 2 of Schedule 1 to the Notification dated 22 July 2004 setting further SMP services conditions on KCOM in relation to regulatory accounting in various markets by removing the entire table in Part 2 and replacing it with the word “None”.
12. The Notification and SMP conditions set out in Annex D of the *Review of retail leased lines, symmetric broadband origination and wholesale trunk segments markets*, published by OFCOM on 24 June 2003, and any subsequent modifications to the SMP conditions set by those Notifications or any Directions under these SMP Conditions shall be revoked by this proposed Notification in accordance with paragraph 13 below.
13. Insofar as SMP Conditions G4 and GG4 as set out in Annex D of the *Review of retail leased lines, symmetric broadband origination and wholesale trunk segments markets*, published by OFCOM on 24 June 2003, regarding the basis of charges are concerned these SMP conditions and any subsequent modifications to them as well as any Directions imposed under these SMP Conditions shall continue to be effective until the time the 2008 Leased Line Charge Control becomes effective which is to be published by Ofcom in 2008.
14. The effect of, and Ofcom’s reasons for making, the proposals to identify the markets set out in paragraph 2 above and to make the market power determinations set out in paragraph 3 above are contained in the explanatory statement accompanying this Notification.
15. The effect of, and Ofcom’s reasons for making, the proposals to set the SMP conditions set out in Schedules 2 and 3 to this Notification and the effect of, and Ofcom’s reasons for making, the proposals to set Directions under these SMP Conditions as set out in Schedule 4 are contained in the explanatory statement accompanying this Notification.
16. In identifying and analysing the markets referred to in paragraph 2 above, and in considering whether to make the proposals set out in this Notification, Ofcom has taken

due account of all applicable guidelines and recommendations which have been issued or made by the European Commission in pursuance of a Community instrument, and relate to market identification and analysis, as required by section 79 of the Act.

17. In making all of the proposals referred to in paragraphs 2 – 6, 9 and 10 of this Notification Ofcom has considered and acted in accordance with the six Community requirements in section 4 of the Act.
18. Representations may be made to Ofcom about the proposals set out in this Notification and the accompanying explanatory statement by 27 March 2008.
19. Copies of this Notification and the accompanying explanatory statement have been sent to the Secretary of State in accordance with sections 50(1)(a) and 81(1), the European Commission and to the regulatory authorities of every other Member State in accordance with sections 50(3) and 81(3) of the Act.
20. Save for the purposes of paragraph 2 of this Notification and except as otherwise defined in this Notification, words or expressions used shall have the same meaning as in the Act.
21. In this Notification:
  - (a) “**BT**” means British Telecommunications plc, whose registered company number is 1800000, and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 736 of the Companies Act 1985, as amended by the Companies Act 1989;
  - (b) “**Hull area**” means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and KCOM Group plc;
  - (c) “**KCOM**” means KCOM Group plc, whose registered company number is 2150618, and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 736 of the Companies Act 1985, as amended by the Companies Act 1989;
  - (d) “**Central and East London Area**” means the area in London consisting of the postal sectors set out in Schedule 1 to this Notification; and
  - (e) “**United Kingdom**” has the meaning given to it in the Interpretation Act 1978 (1978 c 30).

**Gareth Davies**  
**Competition Policy Director, Ofcom**

**A person duly authorised in accordance with paragraph 18 of the Schedule to the Office of Communications Act 2002**

[ Date ]

## **Schedule 1**

### **List of postal sectors constituting the “Central and East London Area”**

E1 0, E1 1, E1 2, E1 5, E1 6, E1 7, E1 8, E14 0, E14 1, E14 2, E14 3, E14 4, E14 5, E14 6, E14 7, E14 8, E14 9, E1W 1, E1W 2, E2 7, E77 1, E98 1, EC1A 1, EC1A 2, EC1A 4, EC1A 7, EC1A 9, EC1M 3, EC1M 4, EC1M 5, EC1M 6, EC1M 7, EC1N 2, EC1N 6, EC1N 7, EC1N 8, EC1R 0, EC1R 1, EC1R 3, EC1R 4, EC1R 5, EC1V 0, EC1V 1, EC1V 2, EC1V 3, EC1V 4, EC1V 7, EC1V 8, EC1V 9, EC1Y 0, EC1Y 1, EC1Y 2, EC1Y 4, EC1Y 8, EC2A 1, EC2A 2, EC2A 3, EC2A 4, EC2M 1, EC2M 2, EC2M 3, EC2M 4, EC2M 5, EC2M 6, EC2M 7, EC2N 1, EC2N 2, EC2N 3, EC2N 4, EC2P 2, EC2R 5, EC2R 6, EC2R 7, EC2R 8, EC2V 5, EC2V 6, EC2V 7, EC2V 8, EC2Y 5, EC2Y 8, EC2Y 9, EC3A 1, EC3A 2, EC3A 3, EC3A 4, EC3A 5, EC3A 6, EC3A 7, EC3A 8, EC3M 1, EC3M 2, EC3M 3, EC3M 4, EC3M 5, EC3M 6, EC3M 7, EC3M 8, EC3N 1, EC3N 2, EC3N 3, EC3N 4, EC3P 3, EC3R 5, EC3R 6, EC3R 7, EC3R 8, EC3V 0, EC3V 1, EC3V 3, EC3V 4, EC3V 9, EC4A 1, EC4A 2, EC4A 3, EC4A 4, EC4M 5, EC4M 6, EC4M 7, EC4M 8, EC4M 9, EC4N 1, EC4N 4, EC4N 5, EC4N 6, EC4N 7, EC4N 8, EC4R 0, EC4R 1, EC4R 2, EC4R 3, EC4R 9, EC4V 2, EC4V 3, EC4V 4, EC4V 5, EC4V 6, EC4Y 0, EC4Y 1, EC4Y 7, EC4Y 8, EC4Y 9, N1 6, N1 7, N1 9, NW1 0, NW1 1, NW1 2, NW1 3, NW1 5, SE1 0, SE1 1, SE1 2, SE1 7, SE1 8, SE1 9, SE11 4, SE8 3, SE8 4, SW1A 0, SW1A 1, SW1A 2, SW1E 5, SW1E 6, SW1H 0, SW1H 9, SW1P 1, SW1P 2, SW1P 3, SW1P 4, SW1V 1, SW1V 2, SW1W 0, SW1W 9, SW1X 0, SW1X 7, SW1X 8, SW1X 9, SW1Y 4, SW1Y 5, SW1Y 6, SW3 1, SW3 2, SW3 3, SW7 1, SW7 4, SW7 5, W1A 1, W1A 2, W1A 3, W1A 9, W1B 1, W1B 2, W1B 3, W1B 4, W1B 5, W1C 1, W1C 2, W1D 1, W1D 2, W1D 3, W1D 4, W1D 5, W1D 6, W1D 7, W1F 0, W1F 7, W1F 8, W1F 9, W1G 0, W1G 6, W1G 7, W1G 8, W1G 9, W1H 1, W1H 2, W1H 4, W1H 5, W1H 6, W1H 7, W1J 0, W1J 5, W1J 6, W1J 7, W1J 8, W1J 9, W1K 1, W1K 2, W1K 3, W1K 4, W1K 5, W1K 6, W1K 7, W1S 1, W1S 2, W1S 3, W1S 4, W1T 1, W1T 2, W1T 3, W1T 4, W1T 5, W1T 6, W1T 7, W1U 1, W1U 2, W1U 3, W1U 4, W1U 5, W1U 6, W1U 7, W1U 8, W1W 5, W1W 6, W1W 7, W1W 8, W2 1, W2 2, W2 3, W2 6, W8 5, W8 9, WC1A 1, WC1A 2, WC1B 3, WC1B 4, WC1B 5, WC1E 6, WC1E 7, WC1H 0, WC1H 8, WC1H 9, WC1N 1, WC1N 2, WC1N 3, WC1R 4, WC1R 5, WC1V 6, WC1V 7, WC1X 0, WC1X 8, WC1X 9, WC2A 1, WC2A 2, WC2A 3, WC2B 4, WC2B 5, WC2B 6, WC2E 7, WC2E 8, WC2E 9, WC2H 0, WC2H 7, WC2H 8, WC2H 9, WC2N 4, WC2N 5, WC2N 6, WC2R 0, WC2R 1, WC2R 2, WC2R 3.

## **Schedule 2**

**[DRAFT] The conditions imposed on British Telecommunications plc under the Communications Act 2003 as a result of the analysis of the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second in which British Telecommunications plc has been found to have significant market power**

### **Part 1: Definitions and Interpretation of these conditions**

1. These conditions shall apply to the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second within the United Kingdom but not including the Hull Area and shall also apply to the provision of Interconnection and Accommodation Services.
2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the markets referred to in paragraph 1 the following definitions shall apply:

“**Act**” means the Communications Act 2003;

“**Access Charge Change Notice**” has the meaning given to it in Condition G6;

“**Accommodation Services**” mean the provision of space on reasonable terms permitting a Third Party to occupy part of an MDF Site reasonably sufficient to permit the use of one or more disaggregated access and backhaul leased lines products, and in particular to permit the connection of the Dominant Provider’s Electronic Communications Network with that of a Third Party at that location and having the following characteristics:

- (a) the Third Party’s Electronic Communications Network is situated in an area of the MDF Site which:
  - (i) is a single undivided space;
  - (ii) after proper performance by the Dominant Provider of its obligation to provide Network Access pursuant to Condition G1, would permit the normal operation of the Third Party’s Electronic Communications Network (or would permit if the Dominant Provider removed any object or substance whether toxic or not, which might reasonably prevent or hinder the occupation of the MDF Site for such use); and
  - (iii) if so requested by the Third Party, is not unreasonably distant from the Dominant Provider’s Electronic Communications Network within the MDF Site;

- (b) no permanent physical partition is erected in the space between the Third Party's Electronic Communications Network and the Dominant Provider's Electronic Communications Network; and
- (c) the Third Party's Electronic Communications Network is neither owned nor run by the Dominant Provider or by any person acting on the Dominant Provider's behalf;

**"Dominant Provider"** means British Telecommunications plc, whose registered company number is 1800000 and any British Telecommunications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

**"the Hull Area"** means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and KCOM Group plc;

**"Interconnection Services"** mean:

- In-Span Handover ("ISH");
- Customer-Sited Handover ("CSH");
- In-Building Handover ("IBH"); and
- ISH extension circuits.

**"MDF Site"** means the site of an operational building of the Dominant Provider that houses a main distribution frame;

**"Network Component"** means to the extent they are used in the Market, or for Interconnection Services, the network components specified in a direction given by Ofcom from time to time for the purpose of these conditions;

**"Reference Offer"** means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract;

**"The Market"** means the market set out in paragraph 1 above;

**"Third Party"** means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network;

**"Transfer Charge"** means the charge or price that is applied, or deemed to be applied, by the Dominant Provider to itself for the use or provision of an activity or group of activities. For the avoidance of doubt such activities or group of activities include, amongst other things, products and services provided from, to or within the Market and the use of Network Components in that Market; and

**"Usage Factor"** means the average usage by any Communications Provider (including the Dominant Provider itself) of each Network Component in using or providing a particular product or service or carrying out a particular activity.

3. Save for the purposes of paragraph 1, except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act.
4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.

5. Headings and titles shall be disregarded.

## Part 2: The conditions

### Condition G1 – Requirement to provide network access on reasonable request

G1.1 Where a Third Party reasonably requests in writing Network Access, the Dominant Provider shall provide that Network Access. The Dominant Provider shall also provide such Network Access as Ofcom may from time to time direct.

G1.2 The provision of Network Access in accordance with paragraph G1.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms and conditions (excluding charges) and on such terms and conditions (excluding charges) as Ofcom may from time to time direct.

G1.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

### Condition G2 – Requirement not to unduly discriminate

G2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with Network Access.

G2.2 In this Condition, the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

### Condition G3 – Basis of charges

G3.1 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for Network Access covered by Condition G1 is reasonably derived from the costs of provision based on a forward looking long run incremental cost approach and allowing an appropriate mark up for the recovery of common costs including an appropriate return on capital employed.

G3.2 For the avoidance of any doubt, where the charge offered, payable or proposed for Network Access covered by Condition G1 is for a service which is subject to a charge control under Condition G4, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that such a charge satisfies the requirement of Condition G3.1.

G3.3 The Dominant Provider shall comply with any direction Ofcom may from time to time direct under this Condition.



#### **Condition G4 – Charge control**

G4.1 This Condition shall apply without prejudice to the generality of Condition G3.

G4.2 The Dominant Provider shall charge no more than the amounts set out in the 2008 Leased Lines Charge Control document to be published by Ofcom in 2008 for each of the products set out in that document.

G4.3 The Dominant Provider shall apply the amounts set out in the document referred to in paragraph G4.2 above in a manner to be agreed from time to time with Ofcom.

G4.4 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

#### **Condition G5 – Requirement to publish a reference offer**

G5.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

G5.2 Subject to paragraph G5.8 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of Network Access includes at least the following:

(a) a description of the Network Access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of Network Access);

(b) the locations of the points of Network Access;

(c) the technical standards for Network Access (including any usage restrictions and other security issues);

(d) the conditions for access to ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing);

(e) any ordering and provisioning procedures;

(f) relevant charges, terms of payment and billing procedures;

(g) details of interoperability tests;

(h) details of maintenance and quality as follows:

(i) specific time scales for the acceptance or refusal of a request for supply and for completion, testing and hand-over or delivery of services and facilities, for provision of support services (such as fault handling and repair);

(ii) service level commitments, namely the quality standards that each party must meet when performing its contractual obligations;

(iii) the amount of compensation payable by one party to another for failure to perform contractual commitments;

(iv) a definition and limitation of liability and indemnity; and

(v) procedures in the event of alterations being proposed to the service offerings, for example, launch of new services, changes to existing services or change to prices;

(i) details of any relevant intellectual property rights;

(j) a dispute resolution procedure to be used between the parties;

(k) details of duration and renegotiation of agreements;

(l) provisions regarding confidentiality of non-public parts of the agreements;

(m) rules of allocation between the parties when supply is limited (for example, for the purpose of co-location or location of masts);

(n) the standard terms and conditions for the provision of Network Access;

(o) the amount applied to:

(i) each Network Component used in providing Network Access with the relevant Usage Factors;

(ii) the Transfer Charge for each Network Component or combination of Network Components described above;

reconciled in each case to the charge payable by a Communications Provider other than the Dominant Provider.

G5.3 To the extent that the Dominant Provider provides to itself Network Access that:

(i) is the same, similar or equivalent to that provided to any other person; or

(ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in a Reference Offer in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it publishes a Reference Offer in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs G5.2(a)-(o).

G5.4 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to any Network Access that it is providing as at the date that this Condition enters into force.

G5.5 The Dominant Provider shall update and publish the Reference Offer in relation to any amendments or in relation to any further Network Access provided after the date that this Condition enters into force.

G5.6 Publication referred to above shall be effected by:

(a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and

(b) sending a copy of the Reference Offer to Ofcom.

G5.7 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person's written request (or such parts which have been requested).

G5.8 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

G5.9 The Dominant Provider shall provide Network Access at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly.

G5.10 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

### **Condition G6 – Requirement to notify charges and terms and conditions**

G6.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish charges, terms and conditions and act in the manner set out below.

G6.2 Save where otherwise provided in Condition G8, the Dominant Provider shall send to Ofcom and to every person with which it has entered into an Access Contract covered by Condition G1 a written notice of any amendment to the charges, terms and conditions on which it provides Network Access or in relation to any charges for new Network Access (an "Access Charge Change Notice") not less than 90 days before any such amendment comes into effect for existing Network Access, or not less than 28 days before any such amendment comes into effect for new Network Access.

G6.3 The Dominant Provider shall ensure that an Access Charge Change Notice includes:

- (a) a description of the Network Access in question;
- (b) a reference to the location in the Dominant Provider's current Reference Offer of the terms and conditions associated with the provision of that Network Access;
- (c) the date on which or the period for which any amendments to charges, terms and conditions will take effect (the "effective date");
- (d) the current and proposed new charge and the relevant Usage Factors applied to each Network Component comprised in that Network Access, reconciled in each case with the current or proposed new charge; and
- (e) the information specified in sub paragraph (d) above with respect to that Network Access to which that paragraph applies.

G6.4 The Dominant Provider shall not apply any new charge, term and condition identified in an Access Charge Change Notice before the effective date.

G6.5 To the extent that the Dominant Provider provides to itself Network Access that:

- (i) is the same, similar or equivalent to that provided to any other person; or

(ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in an Access Charge Change Notice in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it sends to Ofcom an Access Charge Change Notice in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs G6.3(a)-(e).

### **Condition G7 – Quality of Service**

G7.1 The Dominant provider shall publish all such information for the purposes of securing transparency as to the quality of service in relation to Network Access provided by the Dominant Provider in such manner and form as Ofcom may from time to time direct.

G7.2 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

### **Condition G8 – Requirement to notify technical information**

G8.1 Save where Ofcom consents otherwise, where the Dominant Provider-

(a) proposes to provide Network Access covered by Condition G1, the terms and conditions for which comprise new-

(i) technical characteristics (including information on network configuration where necessary to make effective use of the Network Access);

(ii) locations of the points of Network Access; or

(iii) technical standards (including any usage restrictions and other security issues),  
or

(b) proposes to amend an existing Access Contract covered by Condition G1 by modifying the terms and conditions listed in paragraph G8.1(a)(i) to (iii) on which the Network Access is provided,

the Dominant Provider shall publish a written notice (the “Notice”) of the new or amended terms and conditions within a reasonable time period but not less than 90 days before either the Dominant Provider enters into an Access Contract to provide the new Network Access or the amended terms and conditions of the existing Access Contract come into effect.

G8.2 The Dominant Provider shall ensure that the Notice includes-

(a) a description of the Network Access in question;

(b) a reference to the location in the Dominant Provider's Reference Offer of the relevant terms and conditions;

(c) the date on which or the period for which the Dominant Provider may enter into an Access Contract to provide the new Network Access or any amendments to the relevant terms and conditions will take effect (the "effective date").

G8.3 The Dominant Provider shall not enter into an Access Contract containing the terms and conditions identified in the Notice or apply any new relevant terms and conditions identified in the Notice before the effective date.

G8.4 Publication referred to in paragraph G8.1 shall be effected by:

(a) placing a copy of the Notice on any relevant website operated or controlled by the Dominant Provider;

(b) sending a copy of the Notice to Ofcom; and

(c) sending a copy of the Notice to any person at that person's written request, and where the Notice identifies a modification to existing relevant terms and conditions, to every person with which the Dominant Provider has entered into an Access Contract covered by Condition G1. The provision of such a copy of the Notice may be subject to a reasonable charge.

## **G9 - Requests for new Network Access**

G9.1 The Dominant Provider shall for the purposes of transparency publish reasonable guidelines, in relation to requests for new Network Access made to it. Such guidelines shall detail:

(a) the form in which such a request should be made;

(b) the information that the Dominant Provider requires in order to consider a request for new Network Access; and

(c) the time scales in which such requests will be handled by the Dominant Provider in accordance with this Condition.

G9.2 Such guidelines shall be published within two months of the date that this Condition enters into force following a consultation with Ofcom and Third Parties. The Dominant Provider shall keep the guidelines under review and consult with relevant Third Parties and Ofcom before making any amendments to the guidelines.

G9.3 The Dominant Provider shall, upon a reasonable request from a Third Party considering making a request for new Network Access, provide that Third Party with information so as to enable that Third Party to make a request for new Network Access. Such information shall be provided within a reasonable period.

G9.4 On receipt of a written request for new Network Access the Dominant Provider shall ensure that the requirements of this Condition are met. A modification of a request for new Network Access which has previously been submitted to the Dominant Provider, and rejected by the Dominant Provider, shall be considered as a new request.

G9.5 Within five working days of receipt of a request under paragraph G9.4, the Dominant Provider shall acknowledge that request in writing.

G9.6 Within fifteen working days of receipt of a request under paragraph G9.4 the Dominant Provider shall respond in writing to the requesting Third Party in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall confirm that the following will be prepared:

- (i) the timetable for the provision of the new Network Access;
- (ii) an initial offer of terms and conditions for the provision of the new Network Access; and
- (iii) the timetable for the agreement of technical issues.

(b) the Dominant Provider shall confirm that a feasibility study is reasonably required in order to determine whether the request made is reasonable and the Dominant Provider shall set out its objective reasons for the need for such a study;

(c) the Dominant Provider shall confirm that the request is not sufficiently well formulated and, where it does so, the Dominant Provider shall detail all of the defects in the request which has been made; or

(d) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal.

G9.7 Where the Dominant Provider responds to a request under paragraph G9.4 in accordance with paragraph G9.6(a) it shall, within thirty five working days of receipt of a request under paragraph G9.4, respond further to the requesting Third Party in writing and:

- (i) confirm the timetable for the provision of the new Network Access;
- (ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and
- (iii) confirm the timetable for the agreement of technical issues.

G9.8 Where the Dominant Provider responds to a request under paragraph G9.4 in accordance with paragraph G9.6(a) and determines, due to a genuine error of fact, that it reasonably needs to complete a feasibility study, it may, as soon as practicable and in any event, within thirty five working days of receipt of a request under paragraph G9.4, inform the requesting Third Party that a feasibility study is reasonably required and set out its objective reasons for such a study.

G9.9 Where G9.8 applies the Dominant Provider shall, within forty five working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required, respond further to the requesting Third party, in writing, in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall:

- (i) confirm the timetable for the provision of the new Network Access;
- (ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and
- (iii) confirm the timetable for the agreement of technical issues; or

(b) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal.

The Dominant Provider shall provide to Ofcom a copy of the feasibility study and shall provide to the requesting Third Party a non-confidential copy of the feasibility study.

G9.10 The time limit set out in paragraph G9.9 above shall be extended up to seventy working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required pursuant to paragraph G9.8, if:

- circumstances have arisen which, despite the Dominant Provider using its best endeavours, prevent it from completing the feasibility study within forty five working days of the date that the requesting Third Party was informed of the need for a feasibility study pursuant to paragraph G9.8; or
- the Third Party and the Dominant Provider agree to extend the time limit up to seventy working days.

G9.11 The time limit set out in paragraph G9.9 above shall be extended beyond seventy working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required pursuant to paragraph G9.8, if:

- Ofcom agrees; or
- the Third Party and the Dominant Provider agree to extend the time limit beyond seventy working days.

G9.12 Where the Dominant Provider responds to a request under paragraph G9.4 in accordance with paragraph G9.6(b) the Dominant Provider shall, within sixty working days of receipt of a request under paragraph G9.4, respond further to the requesting Third Party, in writing, in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall:

- (i) confirm the timetable for the provision of the new Network Access;
- (ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and
- (iii) confirm the timetable for the agreement of technical issues; or

(b) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal. The Dominant Provider shall provide to Ofcom a copy of the feasibility study and shall provide to the requesting Third Party a non-confidential copy of the feasibility study.

G9.13 The time limit set out in paragraph G9.12 above shall be extended up to eighty five working days of receipt of a request under paragraph G9.4, if:

- circumstances have arisen which, despite the Dominant Provider using its best endeavours, prevent it from completing the feasibility study within sixty working days of receipt of a request under paragraph G9.4; or
- the Third Party and the Dominant Provider agree to extend the time limit up to eighty five working days.

G9.14 The time limit set out in paragraph G9.12 above shall be extended beyond eighty five working days of receipt of a request under paragraph G9.4, if:

- Ofcom agrees; or

- the Third Party and the Dominant Provider agree to extend the time limit beyond eighty five working days.

G9.15 Within two months of the date that this Condition enters into force the Dominant Provider shall provide Ofcom with a description of the processes it has put in place to ensure compliance with this Condition. It shall keep those processes under review to ensure that they remain adequate for that purpose.

G9.16 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.



**[DRAFT] The conditions imposed on British Telecommunications plc under the Communications Act 2003 as a result of the analysis of the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including forty five megabits per second in which British Telecommunications plc has been found to have significant market power**

## **Part 1: Definitions and Interpretation of these conditions**

1. These conditions shall apply to the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including forty five megabits per second, within the United Kingdom but not including the Hull Area and the Central and East London Area and shall also apply to Interconnection and Accommodation Services.

2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the markets referred to in paragraph 1 the following definitions shall apply:

“**Act**” means the Communications Act 2003;

“**Access Charge Change Notice**” has the meaning given to it in Condition G6;

“**Accommodation Services**” mean the provision of space on reasonable terms permitting a Third Party to occupy part of an MDF Site reasonably sufficient to permit the use of one or more disaggregated access and backhaul leased lines products, and in particular to permit the connection of the Dominant Provider’s Electronic Communications Network with that of a Third Party at that location and having the following characteristics:

- (a) the Third Party’s Electronic Communications Network is situated in an area of the MDF Site which:
  - (i) is a single undivided space;
  - (ii) after proper performance by the Dominant Provider of its obligation to provide Network Access pursuant to Condition GG1, would permit the normal operation of the Third Party’s Electronic Communications Network (or would permit if the Dominant Provider removed any object or substance whether toxic or not, which might reasonably prevent or hinder the occupation of the MDF Site for such use); and
  - (iii) if so requested by the Third Party, is not unreasonably distant from the Dominant Provider’s Electronic Communications Network within the MDF Site;
- (b) no permanent physical partition is erected in the space between the Third Party’s Electronic Communications Network and the Dominant Provider’s Electronic Communications Network; and

- (c) the Third Party's Electronic Communications Network is neither owned nor run by the Dominant Provider or by any person acting on the Dominant Provider's behalf;

**"Dominant Provider"** means British Telecommunications plc, whose registered company number is 1800000 and any British Telecommunications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

**"the Hull Area"** means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and KCOM Group plc;

**"Interconnection Services"** mean:

- In-Span Handover ("ISH");
- Customer-Sited Handover ("CSH");
- In-Building Handover ("IBH"); and
- ISH extension circuits.

**"MDF Site"** means the site of an operational building of the Dominant Provider that houses a main distribution frame;

**"Network Component"** means to the extent they are used in the Market, or for Interconnection Services, the network components specified in a direction given by Ofcom from time to time for the purpose of these conditions;

**"Reference Offer"** means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract;

**"The Market"** means the market set out in paragraph 1 above;

**"Third Party"** means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network;

**"Transfer Charge"** means the charge or price that is applied, or deemed to be applied, by the Dominant Provider to itself for the use or provision of an activity or group of activities. For the avoidance of doubt such activities or group of activities include, amongst other things, products and services provided from, to or within the Market and the use of Network Components in that Market; and

**"Usage Factor"** means the average usage by any Communications Provider (including the Dominant Provider itself) of each Network Component in using or providing a particular product or service or carrying out a particular activity.

3. Save for the purposes of paragraph 1, except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act.

4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.

5. Headings and titles shall be disregarded.

## **Part 2: The conditions**

### **Condition GG1 – Requirement to provide network access on reasonable request**

GG1.1 Where a Third Party reasonably requests in writing Network Access, the Dominant Provider shall provide that Network Access. The Dominant Provider shall also provide such Network Access as Ofcom may from time to time direct.

GG1.2 The provision of Network Access in accordance with paragraph GG1.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms and conditions (excluding charges) and on such terms and conditions (excluding charges) as Ofcom may from time to time direct.

GG1.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

### **Condition GG2 – Requirement not to unduly discriminate**

GG2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with Network Access.

GG2.2 In this Condition, the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

### **Condition GG3 – Basis of charges**

GG3.1 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for Network Access covered by Condition GG1 is reasonably derived from the costs of provision based on a forward looking long run incremental cost approach and allowing an appropriate mark up for the recovery of common costs including an appropriate return on capital employed.

GG3.2 For the avoidance of any doubt, where the charge offered, payable or proposed for Network Access covered by Condition GG1 is for a service which is subject to a charge control under Condition GG4, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that such a charge satisfies the requirement of Condition GG3.1.

GG3.3 The Dominant Provider shall comply with any direction Ofcom may from time to time direct under this Condition.

#### **Condition GG4 – Charge control**

GG4.1 This Condition shall apply without prejudice to the generality of Condition GG3.

GG4.2 The Dominant Provider shall charge no more than the amounts set out in in the 2008 Leased Lines Charge Control document to be published by Ofcom in 2008 for each of the products set out in that document.

GG4.3 The Dominant Provider shall apply the amounts set out in the document referred to in paragraph G4.2 above in a manner to be agreed from time to time with Ofcom.

GG4.4 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

#### **Condition GG5 – Requirement to publish a reference offer**

GG5.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

GG5.2 Subject to paragraph GG5.8 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of Network Access includes at least the following:

(a) a description of the Network Access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of Network Access);

(b) the locations of the points of Network Access;

(c) the technical standards for Network Access (including any usage restrictions and other security issues);

(d) the conditions for access to ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing);

(e) any ordering and provisioning procedures;

(f) relevant charges, terms of payment and billing procedures;

(g) details of interoperability tests;

(h) details of maintenance and quality as follows:

(i) specific time scales for the acceptance or refusal of a request for supply and for completion, testing and hand-over or delivery of services and facilities, for provision of support services (such as fault handling and repair);

(ii) service level commitments, namely the quality standards that each party must meet when performing its contractual obligations;

(iii) the amount of compensation payable by one party to another for failure to perform contractual commitments;

- (iv) a definition and limitation of liability and indemnity; and
- (v) procedures in the event of alterations being proposed to the service offerings, for example, launch of new services, changes to existing services or change to prices;
- (i) details of any relevant intellectual property rights;
- (j) a dispute resolution procedure to be used between the parties;
- (k) details of duration and renegotiation of agreements;
- (l) provisions regarding confidentiality of non-public parts of the agreements;
- (m) rules of allocation between the parties when supply is limited (for example, for the purpose of co-location or location of masts);
- (n) the standard terms and conditions for the provision of Network Access;
- (o) the amount applied to:
  - (i) each Network Component used in providing Network Access with the relevant Usage Factors;
  - (ii) the Transfer Charge for each Network Component or combination of Network Components described above;

reconciled in each case to the charge payable by a Communications Provider other than the Dominant Provider.

GG5.3 To the extent that the Dominant Provider provides to itself Network Access that:

- (i) is the same, similar or equivalent to that provided to any other person; or
- (ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in a Reference Offer in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it publishes a Reference Offer in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs GG5.2(a)-(o).

GG5.4 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to any Network Access that it is providing as at the date that this Condition enters into force.

GG5.5 The Dominant Provider shall update and publish the Reference Offer in relation to any amendments or in relation to any further Network Access provided after the date that this Condition enters into force.

GG5.6 Publication referred to above shall be effected by:

- (a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and

(b) sending a copy of the Reference Offer to Ofcom.

GG5.7 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person's written request (or such parts which have been requested).

GG5.8 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

GG5.9 The Dominant Provider shall provide Network Access at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly.

GG5.10 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

### **Condition GG6 – Requirement to notify charges and terms and conditions**

GG6.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish charges, terms and conditions and act in the manner set out below.

GG6.2 Save where otherwise provided in Condition GG8, the Dominant Provider shall send to Ofcom and to every person with which it has entered into an Access Contract covered by Condition GG1, a written notice of any amendment to the charges, terms and conditions on which it provides Network Access or in relation to any charges for new Network Access (an "Access Charge Change Notice") not less than 90 days before any such amendment comes into effect for existing Network Access, or not less than 28 days before any such amendment comes into effect for new Network Access.

GG6.3 The Dominant Provider shall ensure that an Access Charge Change Notice includes:

(a) a description of the Network Access in question;

(b) a reference to the location in the Dominant Provider's current Reference Offer of the terms and conditions associated with the provision of that Network Access;

(c) the date on which or the period for which any amendments to charges, terms and conditions will take effect (the "effective date");

(d) the current and proposed new charge and the relevant Usage Factors applied to each Network Component comprised in that Network Access, reconciled in each case with the current or proposed new charge; and

(e) the information specified in sub paragraph (d) above with respect to that Network Access to which that paragraph applies.

GG6.4 The Dominant Provider shall not apply any new charge, term and condition identified in an Access Charge Change Notice before the effective date.

GG6.5 To the extent that the Dominant Provider provides to itself Network Access that:

(i) is the same, similar or equivalent to that provided to any other person; or

(ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in an Access Charge Change Notice in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it sends to Ofcom an Access Charge Change Notice in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs GG6.3(a)-(e).

### **Condition GG7 – Quality of Service**

GG7.1 The Dominant provider shall publish all such information for the purposes of securing transparency as to the quality of service in relation to Network Access provided by the Dominant Provider in such manner and form as Ofcom may from time to time direct.

GG7.2 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

### **Condition GG8 – Requirement to notify technical information**

GG8.1 Save where Ofcom consents otherwise, where the Dominant Provider-

(a) proposes to provide Network Access covered by Condition GG1, the terms and conditions for which comprise new-

(i) technical characteristics (including information on network configuration where necessary to make effective use of the Network Access);

(ii) locations of the points of Network Access; or

(iii) technical standards (including any usage restrictions and other security issues),  
or

(b) proposes to amend an existing Access Contract covered by Condition GG1 by modifying the terms and conditions listed in paragraph GG8.1(a)(i) to (iii) on which the Network Access is provided,

the Dominant Provider shall publish a written notice (the “Notice”) of the new or amended terms and conditions within a reasonable time period but not less than 90 days before either the Dominant Provider enters into an Access Contract to provide the new Network Access or the amended terms and conditions of the existing Access Contract come into effect.

GG8.2 The Dominant Provider shall ensure that the Notice includes-

(a) a description of the Network Access in question;

(b) a reference to the location in the Dominant Provider's Reference Offer of the relevant terms and conditions;

(c) the date on which or the period for which the Dominant Provider may enter into an Access Contract to provide the new Network Access or any amendments to the relevant terms and conditions will take effect (the "effective date").

GG8.3 The Dominant Provider shall not enter into an Access Contract containing the terms and conditions identified in the Notice or apply any new relevant terms and conditions identified in the Notice before the effective date.

GG8.4 Publication referred to in paragraph GG8.1 shall be effected by:

(a) placing a copy of the Notice on any relevant website operated or controlled by the Dominant Provider;

(b) sending a copy of the Notice to Ofcom; and

(c) sending a copy of the Notice to any person at that person's written request, and where the Notice identifies a modification to existing relevant terms and conditions, to every person with which the Dominant Provider has entered into an Access Contract covered by Condition GG1. The provision of such a copy of the Notice may be subject to a reasonable charge.

#### **GG9 - Requests for new Network Access**

GG9.1 The Dominant Provider shall for the purposes of transparency publish reasonable guidelines, in relation to requests for new Network Access made to it. Such guidelines shall detail:

(a) the form in which such a request should be made;

(b) the information that the Dominant Provider requires in order to consider a request for new Network Access; and

(c) the time scales in which such requests will be handled by the Dominant Provider in accordance with this Condition.

GG9.2 Such guidelines shall be published within two months of the date that this Condition enters into force following a consultation with Ofcom and Third Parties. The Dominant Provider shall keep the guidelines under review and consult with relevant Third Parties and Ofcom before making any amendments to the guidelines.

GG9.3 The Dominant Provider shall, upon a reasonable request from a Third Party considering making a request for new Network Access, provide that Third Party with information so as to enable that Third Party to make a request for new Network Access. Such information shall be provided within a reasonable period.

GG9.4 On receipt of a written request for new Network Access the Dominant Provider shall ensure that the requirements of this Condition are met. A modification of a request for new Network Access which has previously been submitted to the Dominant Provider, and rejected by the Dominant Provider, shall be considered as a new request.



GG9.5 Within five working days of receipt of a request under paragraph GG9.4, the Dominant Provider shall acknowledge that request in writing.

GG9.6 Within fifteen working days of receipt of a request under paragraph GG9.4 the Dominant Provider shall respond in writing to the requesting Third Party in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall confirm that the following will be prepared:

- (i) the timetable for the provision of the new Network Access;
- (ii) an initial offer of terms and conditions for the provision of the new Network Access; and
- (iii) the timetable for the agreement of technical issues.

(b) the Dominant Provider shall confirm that a feasibility study is reasonably required in order to determine whether the request made is reasonable and the Dominant Provider shall set out its objective reasons for the need for such a study;

(c) the Dominant Provider shall confirm that the request is not sufficiently well formulated and, where it does so, the Dominant Provider shall detail all of the defects in the request which has been made; or

(d) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal.

GG9.7 Where the Dominant Provider responds to a request under paragraph GG9.4 in accordance with paragraph GG9.6(a) it shall, within thirty five working days of receipt of a request under paragraph GG9.4, respond further to the requesting Third Party in writing and:

- (i) confirm the timetable for the provision of the new Network Access;
- (ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and
- (iii) confirm the timetable for the agreement of technical issues.

GG9.8 Where the Dominant Provider responds to a request under paragraph GG9.4 in accordance with paragraph GG9.6(a) and determines, due to a genuine error of fact, that it reasonably needs to complete a feasibility study, it may, as soon as practicable and in any event, within thirty five working days of receipt of a request under paragraph GG9.4, inform the requesting Third Party that a feasibility study is reasonably required and set out its objective reasons for such a study.

GG9.9 Where GG9.8 applies the Dominant Provider shall, within forty five working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required, respond further to the requesting Third party, in writing, in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall:

- (i) confirm the timetable for the provision of the new Network Access;
- (ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and
- (iii) confirm the timetable for the agreement of technical issues; or

(b) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal.

The Dominant Provider shall provide to Ofcom a copy of the feasibility study and shall provide to the requesting Third Party a non-confidential copy of the feasibility study.

GG9.10 The time limit set out in paragraph GG9.9 above shall be extended up to seventy working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required pursuant to paragraph GG9.8, if:

- circumstances have arisen which, despite the Dominant Provider using its best endeavours, prevent it from completing the feasibility study within forty five working days of the date that the requesting Third Party was informed of the need for a feasibility study pursuant to paragraph GG9.8; or
- the Third Party and the Dominant Provider agree to extend the time limit up to seventy working days.

GG9.11 The time limit set out in paragraph GG9.9 above shall be extended beyond seventy working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required pursuant to paragraph GG9.8, if:

- Ofcom agrees; or
- the Third Party and the Dominant Provider agree to extend the time limit beyond seventy working days.

GG9.12 Where the Dominant Provider responds to a request under paragraph GG9.4 in accordance with paragraph GG9.6(b) the Dominant Provider shall, within sixty working days of receipt of a request under paragraph GG9.4, respond further to the requesting Third Party, in writing, in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall:

- (i) confirm the timetable for the provision of the new Network Access;
- (ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and
- (iii) confirm the timetable for the agreement of technical issues; or

(b) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal. The Dominant Provider shall provide to Ofcom a copy of the feasibility study and shall provide to the requesting Third Party a non-confidential copy of the feasibility study.

GG9.13 The time limit set out in paragraph GG9.12 above shall be extended up to eighty five working days of receipt of a request under paragraph GG9.4, if:

- circumstances have arisen which, despite the Dominant Provider using its best endeavours, prevent it from completing the feasibility study within sixty working days of receipt of a request under paragraph GG9.4; or
- the Third Party and the Dominant Provider agree to extend the time limit up to eighty five working days.

GG9.14 The time limit set out in paragraph GG9.12 above shall be extended beyond eighty five working days of receipt of a request under paragraph GG9.4, if:

- Ofcom agrees; or

- the Third Party and the Dominant Provider agree to extend the time limit beyond eighty five working days.

GG9.15 Within two months of the date that this Condition enters into force the Dominant Provider shall provide Ofcom with a description of the processes it has put in place to ensure compliance with this Condition. It shall keep those processes under review to ensure that they remain adequate for that purpose.

GG9.16 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

**[DRAFT] The conditions imposed on British Telecommunications plc under the Communications Act 2003 as a result of the analysis of the market for the provision of alternative interface symmetric broadband origination with a bandwidth capacity up to and including one gigabit per second in which British Telecommunications plc has been found to have significant market power**

## **Part 1: Definitions and Interpretation of these conditions**

1. These conditions shall apply to the market for the provision of alternative interface symmetric broadband origination with a bandwidth capacity up to and including one gigabit per second within the United Kingdom but not including the Hull Area and shall also apply to Interconnection and Accommodation Services.

2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the markets referred to in paragraph 1 the following definitions shall apply:

“**Act**” means the Communications Act 2003;

“**Access Charge Change Notice**” has the meaning given to it in Condition G6;

“**Accommodation Services**” mean the provision of space on reasonable terms permitting a Third Party to occupy part of an MDF Site reasonably sufficient to permit the use of one or more disaggregated access and backhaul leased lines products, and in particular to permit the connection of the Dominant Provider’s Electronic Communications Network with that of a Third Party at that location and having the following characteristics:

- (a) the Third Party’s Electronic Communications Network is situated in an area of the MDF Site which:
  - (i) is a single undivided space;
  - (ii) after proper performance by the Dominant Provider of its obligation to provide Network Access pursuant to Condition HH1, would permit the normal operation of the Third Party’s Electronic Communications Network (or would permit if the Dominant Provider removed any object or substance whether toxic or not, which might reasonably prevent or hinder the occupation of the MDF Site for such use); and
  - (iii) if so requested by the Third Party, is not unreasonably distant from the Dominant Provider’s Electronic Communications Network within the MDF Site;
- (b) no permanent physical partition is erected in the space between the Third Party’s Electronic Communications Network and the Dominant Provider’s Electronic Communications Network; and
- (c) the Third Party’s Electronic Communications Network is neither owned nor run by the Dominant Provider or by any person acting on the Dominant Provider’s behalf;

**“Dominant Provider”** means British Telecommunications plc, whose registered company number is 1800000 and any British Telecommunications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

**“the Hull Area”** means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and KCOM Group plc;

**“Interconnection Services”** mean:

- In-Span Handover (“ISH”);
- Customer-Sited Handover (“CSH”);
- In-Building Handover (“IBH”); and
- ISH extension circuits.

**“MDF Site”** means the site of an operational building of the Dominant Provider that houses a main distribution frame;

**“Network Component”** means to the extent they are used in the Market, or for Interconnection Services, the network components specified in a direction given by Ofcom from time to time for the purpose of these conditions;

**“Reference Offer”** means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract;

**“The Market”** means the market set out in paragraph 1 above;

**“Third Party”** means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network;

**“Transfer Charge”** means the charge or price that is applied, or deemed to be applied, by the Dominant Provider to itself for the use or provision of an activity or group of activities. For the avoidance of doubt such activities or group of activities include, amongst other things, products and services provided from, to or within the Market and the use of Network Components in that Market; and

3. Save for the purposes of paragraph 1, except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act.

4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.

5. Headings and titles shall be disregarded.

## **Part 2: The conditions**

### **Condition HH1 – Requirement to provide network access on reasonable request**

HH1.1 Where a Third Party reasonably requests in writing Network Access, the Dominant Provider shall provide that Network Access. The Dominant Provider shall also provide such Network Access as Ofcom may from time to time direct.

HH1.2 The provision of Network Access in accordance with paragraph HH1.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms and conditions (excluding charges) and on such terms and conditions (excluding charges) as Ofcom may from time to time direct.

HH1.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

### **Condition HH2 – Requirement not to unduly discriminate**

HH2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with Network Access.

HH2.2 In this Condition, the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

### **Condition HH3 – Basis of charges**

HH3.1 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for Network Access covered by Condition HH1 is reasonably derived from the costs of provision based on a forward looking long run incremental cost approach and allowing an appropriate mark up for the recovery of common costs including an appropriate return on capital employed.

HH3.2 The Dominant Provider shall comply with any direction Ofcom may from time to time direct under this Condition.

#### **Condition HH4 – Charge control**

HH4.1 This Condition shall apply without prejudice to the generality of Condition HH3.

HH4.2 The Dominant Provider shall charge no more than the amounts set out in in the 2008 Leased Lines Charge Control document to be published by Ofcom in 2008 for each of the products set out in that document.

HH4.3 The Dominant Provider shall apply the amounts set out in the document referred to in paragraph G4.2 above in a manner to be agreed from time to time with Ofcom.

HH4.4 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

#### **Condition HH5 – Requirement to publish a reference offer**

HH5.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

HH5.2 Subject to paragraph HH5.8 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of Network Access includes at least the following:

(a) a description of the Network Access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of Network Access);

(b) the locations of the points of Network Access;

(c) the technical standards for Network Access (including any usage restrictions and other security issues);

(d) the conditions for access to ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing);

(e) any ordering and provisioning procedures;

(f) relevant charges, terms and conditions, including terms of payment and billing procedures;

(g) details of interoperability tests;

(h) details of maintenance and quality as follows:

(i) specific time scales for the acceptance or refusal of a request for supply and for completion, testing and hand-over or delivery of services and facilities, for provision of support services (such as fault handling and repair);

(ii) service level commitments, namely the quality standards that each party must meet when performing its contractual obligations;

(iii) the amount of compensation payable by one party to another for failure to perform contractual commitments;

- (iv) a definition and limitation of liability and indemnity; and
- (v) procedures in the event of alterations being proposed to the service offerings, for example, launch of new services, changes to existing services or change to prices;
- (i) details of any relevant intellectual property rights;
- (j) a dispute resolution procedure to be used between the parties;
- (k) details of duration and renegotiation of agreements;
- (l) provisions regarding confidentiality of non-public parts of the agreements;
- (m) rules of allocation between the parties when supply is limited (for example, for the purpose of co-location or location of masts);
- (n) the standard terms and conditions for the provision of Network Access;
- (o) the amount applied to:
  - (i) each Network Component used in providing Network Access with the relevant Usage Factors;
  - (ii) the Transfer Charge for each Network Component or combination of Network Components described above;

reconciled in each case to the charge payable by a Communications Provider other than the Dominant Provider.

HH5.3 To the extent that the Dominant Provider provides to itself Network Access that:

- (i) is the same, similar or equivalent to that provided to any other person; or
- (ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in a Reference Offer in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it publishes a Reference Offer in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs HH5.2(a)-(o).

HH5.4 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to any Network Access that it is providing as at the date that this Condition enters into force.

HH5.5 The Dominant Provider shall update and publish the Reference Offer in relation to any amendments or in relation to any further Network Access provided after the date that this Condition enters into force.

HH5.6 Publication referred to above shall be effected by:

- (a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and



(b) sending a copy of the Reference Offer to Ofcom.

HH5.7 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person's written request (or such parts which have been requested).

HH5.8 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

HH5.9 The Dominant Provider shall provide Network Access at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly.

HH5.10 The Dominant Provider shall send Ofcom and every person with which it has entered into an access contract covered by Condition HH1, a written notice of any amendments to the charges, terms and conditions on which it provides Network Access or in relation to any charges for new Network Access a reasonable period before any such amendment comes into effect for existing or new Network Access.

HH5.11 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

#### **Condition HH6 – Quality of Service**

HH6.1 The Dominant provider shall publish all such information for the purposes of securing transparency as to the quality of service in relation to Network Access provided by the Dominant Provider in such manner and form as Ofcom may from time to time direct.

HH6.2 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

**[DRAFT] The conditions imposed on British Telecommunications plc under the Communications Act 2003 as a result of the analysis of the market for the provision of wholesale trunk segments at all bandwidths in which British Telecommunications plc has been found to have significant market power**

## **Part 1: Definitions and Interpretation of these conditions**

1. These conditions shall apply to the market for the provision of wholesale trunk segments at all bandwidths within the United Kingdom and shall also apply to Interconnection and Accommodation Services.
2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the markets referred to in paragraph 1 the following definitions shall apply:

“**Act**” means the Communications Act 2003;

“**Access Charge Change Notice**” has the meaning given to it in Condition G6;

“**Accommodation Services**” mean the provision of space on reasonable terms permitting a Third Party to occupy part of an MDF Site reasonably sufficient to permit the use of one or more disaggregated access and backhaul leased lines products, and in particular to permit the connection of the Dominant Provider’s Electronic Communications Network with that of a Third Party at that location and having the following characteristics:

- (a) the Third Party’s Electronic Communications Network is situated in an area of the MDF Site which:
  - (i) is a single undivided space;
  - (ii) after proper performance by the Dominant Provider of its obligation to provide Network Access pursuant to Condition H1, would permit the normal operation of the Third Party’s Electronic Communications Network (or would permit if the Dominant Provider removed any object or substance whether toxic or not, which might reasonably prevent or hinder the occupation of the MDF Site for such use); and
  - (iii) if so requested by the Third Party, is not unreasonably distant from the Dominant Provider’s Electronic Communications Network within the MDF Site;
- (b) no permanent physical partition is erected in the space between the Third Party’s Electronic Communications Network and the Dominant Provider’s Electronic Communications Network; and
- (c) the Third Party’s Electronic Communications Network is neither owned nor run by the Dominant Provider or by any person acting on the Dominant Provider’s behalf;

**“Dominant Provider”** means British Telecommunications plc, whose registered company number is 1800000 and any British Telecommunications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

**“the Hull Area”** means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and KCOM Group plc;

**“Interconnection Services”** mean:

- In-Span Handover (“ISH”);
- Customer-Sited Handover (“CSH”);
- In-Building Handover (“IBH”); and
- ISH extension circuits.

**“MDF Site”** means the site of an operational building of the Dominant Provider that houses a main distribution frame;

**“Network Component”** means to the extent they are used in the Market, or for Interconnection Services, the network components specified in a direction given by Ofcom from time to time for the purpose of these conditions;

**“Reference Offer”** means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract;

**“The Market”** means the market set out in paragraph 1 above;

**“Third Party”** means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network;

**“Transfer Charge”** means the charge or price that is applied, or deemed to be applied, by the Dominant Provider to itself for the use or provision of an activity or group of activities. For the avoidance of doubt such activities or group of activities include, amongst other things, products and services provided from, to or within the Market and the use of Network Components in that Market; and

**“Usage Factor”** means the average usage by any Communications Provider (including the Dominant Provider itself) of each Network Component in using or providing a particular product or service or carrying out a particular activity.

3. Save for the purposes of paragraph 1, except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act.
4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.
5. Headings and titles shall be disregarded.

## **Part 2: The conditions**

### **Condition H1 – Requirement to provide network access on reasonable request**

H1.1 Where a Third Party reasonably requests in writing Network Access, the Dominant Provider shall provide that Network Access. The Dominant Provider shall also provide such Network Access as Ofcom may from time to time direct.

H1.2 The provision of Network Access in accordance with paragraph H1.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms and conditions (excluding charges) and on such terms and conditions (excluding charges) as Ofcom may from time to time direct.

H1.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

### **Condition H2 – Requirement not to unduly discriminate**

H2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with Network Access.

H2.2 In this Condition, the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

### **Condition H3 – Basis of charges**

H3.1 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for Network Access covered by Condition H1 is reasonably derived from the costs of provision based on a forward looking long run incremental cost approach and allowing an appropriate mark up for the recovery of common costs and an appropriate return on capital employed.

H3.2 For the avoidance of any doubt, where the charge offered, payable or proposed for Network Access covered by Condition H1 is for a service which is subject to a charge control under Condition H4, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that such a charge satisfies the requirement of Condition H3.1.

H3.3 The Dominant Provider shall comply with any direction Ofcom may from time to time direct under this Condition.

#### **Condition H4 – Charge control**

H4.1 This Condition shall apply without prejudice to the generality of Condition H3.

H4.2 The Dominant Provider shall charge no more than the amounts set out in in the 2008 Leased Lines Charge Control document to be published by Ofcom in 2008 for each of the products set out in that document.

H4.3 The Dominant Provider shall apply the amounts set out in the document referred to in paragraph G4.2 above in a manner to be agreed from time to time with Ofcom.

H4.4 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

#### **Condition H5 – Requirement to publish a reference offer**

H5.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

H5.2 Subject to paragraph H5.8 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of Network Access includes at least the following:

(a) a description of the Network Access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of Network Access);

(b) the locations of the points of Network Access;

(c) the technical standards for Network Access (including any usage restrictions and other security issues);

(d) the conditions for access to ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing);

(e) any ordering and provisioning procedures;

(f) relevant charges, terms of payment and billing procedures;

(g) details of interoperability tests;

(h) details of maintenance and quality as follows:

(i) specific time scales for the acceptance or refusal of a request for supply and for completion, testing and hand-over or delivery of services and facilities, for provision of support services (such as fault handling and repair);

(ii) service level commitments, namely the quality standards that each party must meet when performing its contractual obligations;

(iii) the amount of compensation payable by one party to another for failure to perform contractual commitments;

- (iv) a definition and limitation of liability and indemnity; and
- (v) procedures in the event of alterations being proposed to the service offerings, for example, launch of new services, changes to existing services or change to prices;
- (i) details of any relevant intellectual property rights;
- (j) a dispute resolution procedure to be used between the parties;
- (k) details of duration and renegotiation of agreements;
- (l) provisions regarding confidentiality of non-public parts of the agreements;
- (m) rules of allocation between the parties when supply is limited (for example, for the purpose of co-location or location of masts);
- (n) the standard terms and conditions for the provision of Network Access;
- (o) the amount applied to:
  - (i) each Network Component used in providing Network Access with the relevant Usage Factors;
  - (ii) the Transfer Charge for each Network Component or combination of Network Components described above;reconciled in each case to the charge payable by a Communications Provider other than the Dominant Provider.

H5.3 To the extent that the Dominant Provider provides to itself Network Access that:

- (i) is the same, similar or equivalent to that provided to any other person; or
- (ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in a Reference Offer in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it publishes a Reference Offer in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs H4.2(a)-(o).

H5.4 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to any Network Access that it is providing as at the date that this Condition enters into force.

H5.5 The Dominant Provider shall update and publish the Reference Offer in relation to any amendments or in relation to any further Network Access provided after the date that this Condition enters into force.

H5.6 Publication referred to above shall be effected by:

- (a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and
- (b) sending a copy of the Reference Offer to Ofcom.

H5.7 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person's written request (or such parts which have been requested).

H5.8 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

H5.9 The Dominant Provider shall provide Network Access at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly.

H5.10 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

### **Condition H6 – Requirement to notify charges and terms and conditions**

H6.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish charges, terms and conditions and act in the manner set out below.

H6.2 Save where otherwise provided in Condition H7, the Dominant Provider shall send to Ofcom and to every person with which it has entered into an Access Contract covered by Condition H1 a written notice of any amendment to the charges, terms and conditions on which it provides Network Access or in relation to any charges for new Network Access (an "Access Charge Change Notice") not less than 90 days before any such amendment comes into effect for existing Network Access, or not less than 28 days before any such amendment comes into effect for new Network Access.

H6.3 The Dominant Provider shall ensure that an Access Charge Change Notice includes:

- (a) a description of the Network Access in question;
- (b) a reference to the location in the Dominant Provider's current Reference Offer of the terms and conditions associated with the provision of that Network Access;
- (c) the date on which or the period for which any amendments to charges, terms and conditions will take effect (the "effective date");
- (d) the current and proposed new charge and the relevant Usage Factors applied to each Network Component comprised in that Network Access, reconciled in each case with the current or proposed new charge; and
- (e) the information specified in sub paragraph (d) above with respect to that Network Access to which that paragraph applies.

H6.4 The Dominant Provider shall not apply any new charge, term and condition identified in an Access Charge Change Notice before the effective date.

H6.5 To the extent that the Dominant Provider provides to itself Network Access that:

- (i) is the same, similar or equivalent to that provided to any other person; or

(ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in an Access Charge Change Notice in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it sends to Ofcom an Access Charge Change Notice in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs H5.3(a)-(e).

### **Condition H7 – Quality of Service**

H7.1 The Dominant provider shall publish all such information for the purposes of securing transparency as to the quality of service in relation to Network Access provided by the Dominant Provider in such manner and form as Ofcom may from time to time direct.

H7.2 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

### **Condition H8 – Requirement to notify technical information**

H8.1 Save where Ofcom consents otherwise, where the Dominant Provider-

(a) proposes to provide Network Access covered by Condition H1, the terms and conditions for which comprise new-

(i) technical characteristics (including information on network configuration where necessary to make effective use of the Network Access);

(ii) locations of the points of Network Access; or

(iii) technical standards (including any usage restrictions and other security issues),

or

(b) proposes to amend an existing Access Contract covered by Condition H1 by modifying the terms and conditions listed in paragraph H8.1(a)(i) to (iii) on which the Network Access is provided,

the Dominant Provider shall publish a written notice (the “Notice”) of the new or amended terms and conditions within a reasonable time period but not less than 90 days before either the Dominant Provider enters into an Access Contract to provide the new Network Access or the amended terms and conditions of the existing Access Contract come into effect.

H8.2 The Dominant Provider shall ensure that the Notice includes-

(a) a description of the Network Access in question;

(b) a reference to the location in the Dominant Provider’s Reference Offer of the relevant terms and conditions;



(c) the date on which or the period for which the Dominant Provider may enter into an Access Contract to provide the new Network Access or any amendments to the relevant terms and conditions will take effect (the “effective date”).

H8.3 The Dominant Provider shall not enter into an Access Contract containing the terms and conditions identified in the Notice or apply any new relevant terms and conditions identified in the Notice before the effective date.

H8.4 Publication referred to in paragraph H8.1 shall be effected by:

(a) placing a copy of the Notice on any relevant website operated or controlled by the Dominant Provider;

(b) sending a copy of the Notice to Ofcom; and

(c) sending a copy of the Notice to any person at that person’s written request, and where the Notice identifies a modification to existing relevant terms and conditions, to every person with which the Dominant Provider has entered into an Access Contract covered by Condition H1. The provision of such a copy of the Notice may be subject to a reasonable charge.

## **H9 - Requests for new Network Access**

H9.1 The Dominant Provider shall for the purposes of transparency publish reasonable guidelines, in relation to requests for new Network Access made to it. Such guidelines shall detail:

(a) the form in which such a request should be made;

(b) the information that the Dominant Provider requires in order to consider a request for new Network Access; and

(c) the time scales in which such requests will be handled by the Dominant Provider in accordance with this Condition.

H9.2 Such guidelines shall be published within two months of the date that this Condition enters into force following a consultation with Ofcom and Third Parties. The Dominant Provider shall keep the guidelines under review and consult with relevant Third Parties and Ofcom before making any amendments to the guidelines.

H9.3 The Dominant Provider shall, upon a reasonable request from a Third Party considering making a request for new Network Access, provide that Third Party with information so as to enable that Third Party to make a request for new Network Access. Such information shall be provided within a reasonable period.

H9.4 On receipt of a written request for new Network Access the Dominant Provider shall ensure that the requirements of this Condition are met. A modification of a request for new Network Access which has previously been submitted to the Dominant Provider, and rejected by the Dominant Provider, shall be considered as a new request.

H9.5 Within five working days of receipt of a request under paragraph H9.4, the Dominant Provider shall acknowledge that request in writing.

H9.6 Within fifteen working days of receipt of a request under paragraph H9.4 the Dominant Provider shall respond in writing to the requesting Third Party in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall confirm that the following will be prepared:

- (i) the timetable for the provision of the new Network Access;
- (ii) an initial offer of terms and conditions for the provision of the new Network Access; and
- (iii) the timetable for the agreement of technical issues.

(b) the Dominant Provider shall confirm that a feasibility study is reasonably required in order to determine whether the request made is reasonable and the Dominant Provider shall set out its objective reasons for the need for such a study;

(c) the Dominant Provider shall confirm that the request is not sufficiently well formulated and, where it does so, the Dominant Provider shall detail all of the defects in the request which has been made; or

(d) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal.

H9.7 Where the Dominant Provider responds to a request under paragraph H9.4 in accordance with paragraph H9.6(a) it shall, within thirty five working days of receipt of a request under paragraph H9.4, respond further to the requesting Third Party in writing and:

- (i) confirm the timetable for the provision of the new Network Access;
- (ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and
- (iii) confirm the timetable for the agreement of technical issues.

H9.8 Where the Dominant Provider responds to a request under paragraph H9.4 in accordance with paragraph H9.6(a) and determines, due to a genuine error of fact, that it reasonably needs to complete a feasibility study, it may, as soon as practicable and in any event, within thirty five working days of receipt of a request under paragraph H9.4, inform the requesting Third Party that a feasibility study is reasonably required and set out its objective reasons for such a study.

H9.9 Where H9.8 applies the Dominant Provider shall, within forty five working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required, respond further to the requesting Third party, in writing, in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall:

- (i) confirm the timetable for the provision of the new Network Access;
- (ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and
- (iii) confirm the timetable for the agreement of technical issues; or

(b) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal. The Dominant Provider shall provide to Ofcom a copy of the feasibility study and shall provide to the requesting Third Party a non-confidential copy of the feasibility study.

H9.10 The time limit set out in paragraph H9.9 above shall be extended up to seventy working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required pursuant to paragraph H9.8, if:

- circumstances have arisen which, despite the Dominant Provider using its best endeavours, prevent it from completing the feasibility study within forty five working days of the date that the requesting Third Party was informed of the need for a feasibility study pursuant to paragraph H9.8; or

- the Third Party and the Dominant Provider agree to extend the time limit up to seventy working days.

H9.11 The time limit set out in paragraph H9.9 above shall be extended beyond seventy working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required pursuant to paragraph H9.8, if:

- Ofcom agrees; or

- the Third Party and the Dominant Provider agree to extend the time limit beyond seventy working days.

H9.12 Where the Dominant Provider responds to a request under paragraph H9.4 in accordance with paragraph H9.6(b) the Dominant Provider shall, within sixty working days of receipt of a request under paragraph H9.4, respond further to the requesting Third Party, in writing, in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall:

- (i) confirm the timetable for the provision of the new Network Access;
- (ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and
- (iii) confirm the timetable for the agreement of technical issues; or

(b) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal. The Dominant Provider shall provide to Ofcom a copy of the feasibility study and shall provide to the requesting Third Party a non-confidential copy of the feasibility study.

H9.13 The time limit set out in paragraph H9.12 above shall be extended up to eighty five working days of receipt of a request under paragraph H9.4, if:

- circumstances have arisen which, despite the Dominant Provider using its best endeavours, prevent it from completing the feasibility study within sixty working days of receipt of a request under paragraph H9.4; or

- the Third Party and the Dominant Provider agree to extend the time limit up to eighty five working days.

H9.14 The time limit set out in paragraph H9.12 above shall be extended beyond eighty five working days of receipt of a request under paragraph H9.4, if:

- Ofcom agrees; or

- the Third Party and the Dominant Provider agree to extend the time limit beyond eighty five working days.

H9.15 Within two months of the date that this Condition enters into force the Dominant Provider shall provide Ofcom with a description of the processes it has put in place to ensure compliance with this Condition. It shall keep those processes under review to ensure that they remain adequate for that purpose.

H9.16 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

**[DRAFT] The conditions imposed on British Telecommunications plc under the Communications Act 2003 as a result of the analysis of the market for the provision of traditional interface retail leased lines up to and including a bandwidth capacity of eight megabits per second in which British Telecommunications plc has been found to have significant market power**

## **Part 1: Definitions and Interpretation of these conditions**

1. These conditions shall apply to the market for the provision of analogue and digital traditional interface retail leased lines up to and including a bandwidth capacity of eight megabits per second within the United Kingdom but not including the Hull Area.
2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the market referred to in paragraph 1 the following definitions shall apply:

**“Act”** means the Communications Act 2003;

**“Dominant Provider”** means British Telecommunications plc, whose registered company number is 1800000 and any British Telecommunications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

**“the Hull Area”** means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and KCOM Group plc;

**“Reference Offer”** means the terms and conditions on which the Dominant Provider is willing to enter into an agreement for the provision of a retail leased line;

**“The Market”** means the market set out in paragraph 1 above; and

**“Third Party”** means person.

3. Save for the purposes of paragraph 1, except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act.
4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.
5. Headings and titles shall be disregarded.

## Part 2: The conditions

### Condition I1 – Requirement to provide retail leased lines

I1.1 The Dominant Provider shall provide a retail leased line with a bandwidth capacity of two megabits per second to every Third Party who reasonably requests in writing such a leased line.

I1.2 The provision of retail leased lines in accordance with paragraph I1.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms, conditions and charges and on such terms, conditions and charges as Ofcom may from time to time direct.

I1.3 The Dominant Provider shall not be required to provide a retail analogue leased line or a retail traditional interface digital leased lines with a bandwidth capacity of up to and including two megabits per second unless it was supplying that leased line to the Third Party on the date that this Condition enters into force.

I1.4 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

### Condition I2 – Requirement not to unduly discriminate

I2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with the supply of retail leased lines up to and including a bandwidth capacity of two megabits per second.

I2.2 In this Condition, the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

### Condition I3 – Basis of charges

I3.1 This Condition shall only apply if Ofcom gives notice to the Dominant Provider that it has breached the voluntary undertaking it gave to Ofcom concerning the pricing of the leased lines which are the subject of this Condition and as set out in a letter from the Dominant Provider to Ofcom dated [xxx 2008].

I3.2 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for analogue retail leased lines is reasonably derived from the costs of provision based on a forward looking long run incremental cost approach and allowing an appropriate mark up for the recovery of common costs and an appropriate return on capital employed.

I3.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time.

#### **Condition I4 – Requirement to publish a reference offer**

14.1 The Dominant Provider shall be required to publish a Reference Offer in relation to the provision of retail leased lines of up to and including two megabits per second bandwidth capacity except in so far as Ofcom may otherwise consent in writing and act in the manner set out below.

14.2 Subject to paragraph 14.7 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of retail leased lines of up to and including two megabits per second bandwidth capacity includes at least the following:

(a) the technical characteristics, including the physical and electrical characteristics as well as the detailed technical and performance specifications which apply at the network termination point;

(b) charges, including the initial connection charges, the periodic rental charges and other charges. Where charges are differentiated, this must be indicated;

(c) information concerning the ordering procedure;

(d) the contractual period, which includes the period which is in general laid down in the contract and the minimum contractual period which the user is obliged to accept;

(e) any refund procedure.

14.3 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to retail leased lines of up to and including two megabits per second bandwidth capacity that it is providing as at the date that this Condition enters into force.

14.4 The Dominant Provider shall update and publish the Reference Offer, in relation to any amendments, or in relation to any further retail leased lines of up to and including two megabits per second bandwidth capacity provided after the date that this Condition enters into force, on the same day as such amendments take effect or further retail leased lines are offered.

14.5 Publication referred to above shall be effected by:

(a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and

(b) sending a copy of the Reference Offer to Ofcom.

14.6 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person's written request (or such parts which have been requested).

14.7 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

14.8 The Dominant Provider shall provide retail leased lines of up to and including two megabits per second bandwidth capacity at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly, unless Ofcom otherwise directs. In addition, where, in response to a particular request, the Dominant

Provider considers it unreasonable to provide a retail leased line of up to and including two megabits per second bandwidth capacity at the charges, terms and conditions set out in the relevant Reference Offer, it may only depart from its Reference Offer with the consent of Ofcom.

14.9 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.



## Schedule 3

**[DRAFT] The conditions imposed on KCOM (Hull) plc under the Communications Act 2003 as a result of the analysis of the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second in which KCOM (Hull) plc has been found to have significant market power**

### Part 1: Definitions and Interpretation of these conditions

1. These conditions shall apply to the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second within the Hull Area.
2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the markets referred to in paragraph 1 the following definitions shall apply:

**“Act”** means the Communications Act 2003;

**“Dominant Provider”** means KCOM Group plc whose registered company number is 2150618 and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

**“the Hull Area”** means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and KCOM Group plc;

**“Network Component”** means to the extent they are used in the Market the network components specified in a Direction given by Ofcom from time to time for the purpose of these conditions;

**“Reference Offer”** means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract;

**“The Market”** means the market set out in paragraph 1 above;

**“Third Party”** means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network;

**“Transfer Charge”** means the charge or price that is applied, or deemed to be applied, by the Dominant Provider to itself for the use or provision of an activity or group of activities. For the avoidance of doubt such activities or group of activities include, amongst other things, products and services provided from, to or within the Market and the use of Network Components in that Market; and

**"Usage Factor"** means the average usage by any Communications Provider (including the Dominant Provider itself) of each Network Component in using or providing a particular product or service or carrying out a particular activity.

3. Save for the purposes of paragraph 1, except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act.
4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.
5. Headings and titles shall be disregarded.

## **Part 2: The conditions**

### **Condition GA1 – Requirement to provide network access on reasonable request**

GA1.1 Where a Third Party reasonably requests in writing Network Access, the Dominant Provider shall provide that Network Access. The Dominant Provider shall also provide such Network Access as Ofcom may from time to time direct.

GA1.2 The provision of Network Access in accordance with paragraph GA1.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms, conditions and charges and on such terms, conditions and charges as Ofcom may from time to time direct.

GA1.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

### **Condition GA2 – Requirement not to unduly discriminate**

GA2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with Network Access.

GA2.2 In this Condition, the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

### **Condition GA3 – Requirement to publish a reference offer**

GA3.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

GA3.2 Subject to paragraph GA3.8 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of Network Access includes at least the following:

- (a) a description of the Network Access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of Network Access);
- (b) the locations of the points of Network Access;
- (c) the technical standards for Network Access (including any usage restrictions and other security issues);
- (d) the conditions for access to ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing);
- (e) any ordering and provisioning procedures;

- (f) relevant charges, terms of payment and billing procedures;
- (g) details of interoperability tests;
- (h) details of maintenance and quality as follows:
  - (i) specific time scales for the acceptance or refusal of a request for supply and for completion, testing and hand-over or delivery of services and facilities, for provision of support services (such as fault handling and repair);
  - (ii) service level commitments, namely the quality standards that each party must meet when performing its contractual obligations;
  - (iii) the amount of compensation payable by one party to another for failure to perform contractual commitments;
  - (iv) a definition and limitation of liability and indemnity; and
  - (v) procedures in the event of alterations being proposed to the service offerings, for example, launch of new services, changes to existing services or change to prices;
- (i) details of any relevant intellectual property rights;
- (j) a dispute resolution procedure to be used between the parties;
- (k) details of duration and renegotiation of agreements;
- (l) provisions regarding confidentiality of non-public parts of the agreements;
- (m) rules of allocation between the parties when supply is limited (for example, for the purpose of co-location or location of masts);
- (n) the standard terms and conditions for the provision of Network Access;
- (o) the amount applied to:
  - (i) each Network Component used in providing Network Access with the relevant Usage Factors;
  - (ii) the Transfer Charge for each Network Component or combination of Network Components described above;

reconciled in each case to the charge payable by a Communications Provider other than the Dominant Provider.

GA3.3 To the extent that the Dominant Provider provides to itself Network Access that:

- (i) is the same, similar or equivalent to that provided to any other person; or
- (ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in a Reference Offer in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it publishes a Reference Offer in relation to the Network Access that it provides to itself

which includes, where relevant, at least those matters detailed in paragraphs GA3.2(a)-(o).

GA3.4 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to any Network Access that it is providing as at the date that this Condition enters into force.

GA3.5 The Dominant Provider shall update and publish the Reference Offer in relation to any amendments or in relation to any further Network Access provided after the date that this Condition enters into force.

GA3.6 Publication referred to above shall be effected by:

(a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and

(b) sending a copy of the Reference Offer to Ofcom.

GA3.7 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person's written request (or such parts which have been requested).

GA3.8 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

GA3.9 The Dominant Provider shall provide Network Access at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly.

GA3.10 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

#### **Condition GA4 – Requirement to notify technical information**

GA4.1 Save where Ofcom consents otherwise, where the Dominant Provider-

(a) proposes to provide Network Access covered by Condition GA1, the terms and conditions for which comprise new-

(i) technical characteristics (including information on network configuration where necessary to make effective use of the Network Access);

(ii) locations of the points of Network Access; or

(iii) technical standards (including any usage restrictions and other security issues),

or

(b) proposes to amend an existing Access Contract covered by Condition GA1 by modifying the terms and conditions listed in paragraph GA4.1(a)(i) to (iii) on which the Network Access is provided,

the Dominant Provider shall publish a written notice (the “Notice”) of the new or amended terms and conditions within a reasonable time period but not less than 90 days before either the Dominant Provider enters into an Access Contract to provide the new Network Access or the amended terms and conditions of the existing Access Contract come into effect.

GA4.2 The Dominant Provider shall ensure that the Notice includes-

- (a) a description of the Network Access in question;
- (b) a reference to the location in the Dominant Provider’s Reference Offer of the relevant terms and conditions;
- (c) the date on which or the period for which the Dominant Provider may enter into an Access Contract to provide the new Network Access or any amendments to the relevant terms and conditions will take effect (the “effective date”).

GA4.3 The Dominant Provider shall not enter into an Access Contract containing the terms and conditions identified in the Notice or apply any new relevant terms and conditions identified in the Notice before the effective date.

GA4.4 Publication referred to in paragraph GA4.1 shall be effected by:

- (a) placing a copy of the Notice on any relevant website operated or controlled by the Dominant Provider;
- (b) sending a copy of the Notice to Ofcom; and
- (c) sending a copy of the Notice to any person at that person’s written request, and where the Notice identifies a modification to existing relevant terms and conditions, to every person with which the Dominant Provider has entered into an Access Contract covered by Condition GA1. The provision of such a copy of the Notice may be subject to a reasonable charge.

### **Condition GA5 – Basis of charges**

GA5.1 This Condition shall only apply if Ofcom gives notice to the Dominant Provider that it has breached the voluntary undertaking it gave to Ofcom concerning the pricing of the leased lines which are the subject of this Condition and as set out in a letter from the Dominant Provider to Ofcom dated [XXX 2008].

GA5.2 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for Network Access covered by Condition GA1 is reasonably derived from the costs of provision based on a forward looking long run incremental cost approach and allowing an appropriate mark up for the recovery of common costs including an appropriate return on capital employed.

GA5.3 The Dominant Provider shall comply with any direction Ofcom may from time to time direct under this Condition.

**[DRAFT] The conditions imposed on KCOM (Hull) plc under the Communications Act 2003 as a result of the analysis of the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including forty five megabits per second in which KCOM (Hull) plc has been found to have significant market power**

## **Part 1: Definitions and Interpretation of these conditions**

1. These conditions shall apply to the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including forty five megabits per second within the Hull Area.
2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the markets referred to in paragraph 1 the following definitions shall apply:

**“Act”** means the Communications Act 2003;

**“Dominant Provider”** means KCOM Group plc whose registered company number is 2150618 and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

**“the Hull Area”** means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and KCOM Group plc;

**“Network Component”** means to the extent they are used in the Market the network components specified in a Direction given by Ofcom from time to time for the purpose of these conditions;

**“Reference Offer”** means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract;

**“The Market”** means the market set out in paragraph 1 above;

**“Third Party”** means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network;

**“Transfer Charge”** means the charge or price that is applied, or deemed to be applied, by the Dominant Provider to itself for the use or provision of an activity or group of activities. For the avoidance of doubt such activities or group of activities include, amongst other things, products and services provided from, to or within the Market and the use of Network Components in that Market; and

**"Usage Factor"** means the average usage by any Communications Provider (including the Dominant Provider itself) of each Network Component in using or providing a particular product or service or carrying out a particular activity.

3. Save for the purposes of paragraph 1, except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act.
4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.
5. Headings and titles shall be disregarded.



## **Part 2: The conditions**

### **Condition GGA1 – Requirement to provide network access on reasonable request**

GGA1.1 Where a Third Party reasonably requests in writing Network Access, the Dominant Provider shall provide that Network Access. The Dominant Provider shall also provide such Network Access as Ofcom may from time to time direct.

GGA1.2 The provision of Network Access in accordance with paragraph GGA1.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms, conditions and charges and on such terms, conditions and charges as Ofcom may from time to time direct.

GGA1.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

### **Condition GGA2 – Requirement not to unduly discriminate**

GGA2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with Network Access.

GGA2.2 In this Condition, the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

### **Condition GGA3 – Requirement to publish a reference offer**

GGA3.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

GGA3.2 Subject to paragraph GGA3.8 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of Network Access includes at least the following:

- (a) a description of the Network Access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of Network Access);
- (b) the locations of the points of Network Access;
- (c) the technical standards for Network Access (including any usage restrictions and other security issues);
- (d) the conditions for access to ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing);
- (e) any ordering and provisioning procedures;

- (f) relevant charges, terms of payment and billing procedures;
- (g) details of interoperability tests;
- (h) details of maintenance and quality as follows:
  - (i) specific time scales for the acceptance or refusal of a request for supply and for completion, testing and hand-over or delivery of services and facilities, for provision of support services (such as fault handling and repair);
  - (ii) service level commitments, namely the quality standards that each party must meet when performing its contractual obligations;
  - (iii) the amount of compensation payable by one party to another for failure to perform contractual commitments;
  - (iv) a definition and limitation of liability and indemnity; and
  - (v) procedures in the event of alterations being proposed to the service offerings, for example, launch of new services, changes to existing services or change to prices;
- (i) details of any relevant intellectual property rights;
- (j) a dispute resolution procedure to be used between the parties;
- (k) details of duration and renegotiation of agreements;
- (l) provisions regarding confidentiality of non-public parts of the agreements;
- (m) rules of allocation between the parties when supply is limited (for example, for the purpose of co-location or location of masts);
- (n) the standard terms and conditions for the provision of Network Access;
- (o) the amount applied to:
  - (i) each Network Component used in providing Network Access with the relevant Usage Factors;
  - (ii) the Transfer Charge for each Network Component or combination of Network Components described above;

reconciled in each case to the charge payable by a Communications Provider other than the Dominant Provider.

GGA3.3 To the extent that the Dominant Provider provides to itself Network Access that:

- (i) is the same, similar or equivalent to that provided to any other person; or
- (ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in a Reference Offer in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it publishes a Reference Offer in relation to the Network Access that it provides to itself

which includes, where relevant, at least those matters detailed in paragraphs GGA3.2(a)-(o).

GGA3.4 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to any Network Access that it is providing as at the date that this Condition enters into force.

GGA3.5 The Dominant Provider shall update and publish the Reference Offer in relation to any amendments or in relation to any further Network Access provided after the date that this Condition enters into force.

GGA3.6 Publication referred to above shall be effected by:

(a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and

(b) sending a copy of the Reference Offer to Ofcom.

GGA3.7 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person's written request (or such parts which have been requested).

GGA3.8 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

GGA3.9 The Dominant Provider shall provide Network Access at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly.

GGA3.10 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

#### **Condition GGA4 – Requirement to notify technical information**

GGA4.1 Save where Ofcom consents otherwise, where the Dominant Provider-

(a) proposes to provide Network Access covered by Condition GGA1, the terms and conditions for which comprise new-

(i) technical characteristics (including information on network configuration where necessary to make effective use of the Network Access);

(ii) locations of the points of Network Access; or

(iii) technical standards (including any usage restrictions and other security issues),

or

(b) proposes to amend an existing Access Contract covered by Condition GGA1 by modifying the terms and conditions listed in paragraph GGA4.1(a)(i) to (iii) on which the Network Access is provided,

the Dominant Provider shall publish a written notice (the “Notice”) of the new or amended terms and conditions within a reasonable time period but not less than 90 days before either the Dominant Provider enters into an Access Contract to provide the new Network Access or the amended terms and conditions of the existing Access Contract come into effect.

GGA4.2 The Dominant Provider shall ensure that the Notice includes-

- (a) a description of the Network Access in question;
- (b) a reference to the location in the Dominant Provider’s Reference Offer of the relevant terms and conditions;
- (c) the date on which or the period for which the Dominant Provider may enter into an Access Contract to provide the new Network Access or any amendments to the relevant terms and conditions will take effect (the “effective date”).

GGA4.3 The Dominant Provider shall not enter into an Access Contract containing the terms and conditions identified in the Notice or apply any new relevant terms and conditions identified in the Notice before the effective date.

GGA4.4 Publication referred to in paragraph GGA4.1 shall be effected by:

- (a) placing a copy of the Notice on any relevant website operated or controlled by the Dominant Provider;
- (b) sending a copy of the Notice to Ofcom; and
- (c) sending a copy of the Notice to any person at that person’s written request, and where the Notice identifies a modification to existing relevant terms and conditions, to every person with which the Dominant Provider has entered into an Access Contract covered by Condition GGA1. The provision of such a copy of the Notice may be subject to a reasonable charge.

### **Condition GGA5 – Basis of charges**

GGA5.1 This Condition shall only apply if Ofcom gives notice to the Dominant Provider that it has breached the voluntary undertaking it gave to Ofcom concerning the pricing of the leased lines which are the subject of this Condition and as set out in a letter from the Dominant Provider to Ofcom dated [xxx 2008].

GGA5.2 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for Network Access is reasonably derived from the costs of provision based on a forward looking long run incremental cost approach and allowing an appropriate mark up for the recovery of common costs and an appropriate return on capital employed.

GGA5.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time.

**[DRAFT] The conditions imposed on KCOM (Hull) plc under the Communications Act 2003 as a result of the analysis of the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity above forty five megabits per second and up to and including six hundred and twenty two megabits per second in which KCOM (Hull) plc has been found to have significant market power**

## **Part 1: Definitions and Interpretation of these conditions**

1. These conditions shall apply to the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity above forty five megabits per second and up to and including six hundred and twenty two megabits per second within the Hull Area.
2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the markets referred to in paragraph 1 the following definitions shall apply:

**“Act”** means the Communications Act 2003;

**“Dominant Provider”** means KCOM Group plc whose registered company number is 2150618 and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

**“the Hull Area”** means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and KCOM Group plc;

**“Network Component”** means to the extent they are used in the Market the network components specified in a Direction given by Ofcom from time to time for the purpose of these conditions;

**“Reference Offer”** means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract;

**“The Market”** means the market set out in paragraph 1 above;

**“Third Party”** means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network;

**“Transfer Charge”** means the charge or price that is applied, or deemed to be applied, by the Dominant Provider to itself for the use or provision of an activity or group of activities. For the avoidance of doubt such activities or group of activities include, amongst other things, products and services provided from, to or within the Market and the use of Network Components in that Market; and

**“Usage Factor”** means the average usage by any Communications Provider (including the Dominant Provider itself) of each Network Component in using or providing a particular product or service or carrying out a particular activity.

3. Save for the purposes of paragraph 1, except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act.
4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.
5. Headings and titles shall be disregarded.

## **Part 2: The conditions**

### **Condition GGB1 – Requirement to provide network access on reasonable request**

GGB1.1 Where a Third Party reasonably requests in writing Network Access, the Dominant Provider shall provide that Network Access. The Dominant Provider shall also provide such Network Access as Ofcom may from time to time direct.

GGB1.2 The provision of Network Access in accordance with paragraph GGB1.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms, conditions and charges and on such terms, conditions and charges as Ofcom may from time to time direct.

GGB1.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

### **Condition GGB2 – Requirement not to unduly discriminate**

GGB2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with Network Access.

GGB2.2 In this Condition, the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

### **Condition GGB3 – Requirement to publish a reference offer**

GGB3.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

GGB3.2 Subject to paragraph GGB3.8 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of Network Access includes at least the following:

(a) a description of the Network Access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of Network Access);

(b) the locations of the points of Network Access;

(c) the technical standards for Network Access (including any usage restrictions and other security issues);

(d) the conditions for access to ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing);

(e) any ordering and provisioning procedures;

(f) relevant charges, terms of payment and billing procedures;

- (g) details of interoperability tests;
- (h) details of maintenance and quality as follows:
  - (i) specific time scales for the acceptance or refusal of a request for supply and for completion, testing and hand-over or delivery of services and facilities, for provision of support services (such as fault handling and repair);
  - (ii) service level commitments, namely the quality standards that each party must meet when performing its contractual obligations;
  - (iii) the amount of compensation payable by one party to another for failure to perform contractual commitments;
  - (iv) a definition and limitation of liability and indemnity; and
  - (v) procedures in the event of alterations being proposed to the service offerings, for example, launch of new services, changes to existing services or change to prices;
- (i) details of any relevant intellectual property rights;
- (j) a dispute resolution procedure to be used between the parties;
- (k) details of duration and renegotiation of agreements;
- (l) provisions regarding confidentiality of non-public parts of the agreements;
- (m) rules of allocation between the parties when supply is limited (for example, for the purpose of co-location or location of masts);
- (n) the standard terms and conditions for the provision of Network Access;
- (o) the amount applied to:
  - (i) each Network Component used in providing Network Access with the relevant Usage Factors;
  - (ii) the Transfer Charge for each Network Component or combination of Network Components described above;

reconciled in each case to the charge payable by a Communications Provider other than the Dominant Provider.

GGB3.3 To the extent that the Dominant Provider provides to itself Network Access that:

- (i) is the same, similar or equivalent to that provided to any other person; or
- (ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in a Reference Offer in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it publishes a Reference Offer in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs GGB3.2(a)-(o).



GGB3.4 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to any Network Access that it is providing as at the date that this Condition enters into force.

GGB3.5 The Dominant Provider shall update and publish the Reference Offer in relation to any amendments or in relation to any further Network Access provided after the date that this Condition enters into force.

GGB3.6 Publication referred to above shall be effected by:

(a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and

(b) sending a copy of the Reference Offer to Ofcom.

GGB3.7 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person's written request (or such parts which have been requested).

GGB3.8 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

GGB3.9 The Dominant Provider shall provide Network Access at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly.

GGB3.10 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

#### **Condition GGB4 – Requirement to notify technical information**

GGB4.1 Save where Ofcom consents otherwise, where the Dominant Provider-

(a) proposes to provide Network Access covered by Condition GGB1, the terms and conditions for which comprise new-

(i) technical characteristics (including information on network configuration where necessary to make effective use of the Network Access);

(ii) locations of the points of Network Access; or

(iii) technical standards (including any usage restrictions and other security issues),

or

(b) proposes to amend an existing Access Contract covered by Condition GGB1 by modifying the terms and conditions listed in paragraph GGB4.1(a)(i) to (iii) on which the Network Access is provided,

the Dominant Provider shall publish a written notice (the “Notice”) of the new or amended terms and conditions within a reasonable time period but not less than 90 days before either the Dominant Provider enters into an Access Contract to provide the new Network Access or the amended terms and conditions of the existing Access Contract come into effect.

GGB4.2 The Dominant Provider shall ensure that the Notice includes-

- (a) a description of the Network Access in question;
- (b) a reference to the location in the Dominant Provider’s Reference Offer of the relevant terms and conditions;
- (c) the date on which or the period for which the Dominant Provider may enter into an Access Contract to provide the new Network Access or any amendments to the relevant terms and conditions will take effect (the “effective date”).

GGB4.3 The Dominant Provider shall not enter into an Access Contract containing the terms and conditions identified in the Notice or apply any new relevant terms and conditions identified in the Notice before the effective date.

GGB4.4 Publication referred to in paragraph GGB4.1 shall be effected by:

- (a) placing a copy of the Notice on any relevant website operated or controlled by the Dominant Provider;
- (b) sending a copy of the Notice to Ofcom; and
- (c) sending a copy of the Notice to any person at that person’s written request, and where the Notice identifies a modification to existing relevant terms and conditions, to every person with which the Dominant Provider has entered into an Access Contract covered by Condition GGB1. The provision of such a copy of the Notice may be subject to a reasonable charge.

### **Condition GGB5 – Basis of charges**

GGB5.1 This Condition shall only apply if Ofcom gives notice to the Dominant Provider that it has breached the voluntary undertaking it gave to Ofcom concerning the pricing of the leased lines which are the subject of this Condition and as set out in a letter from the Dominant Provider to Ofcom dated [xxx 2008].

GGB5.2 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for Network Access is reasonably derived from the costs of provision based on a forward looking long run incremental cost approach and allowing an appropriate mark up for the recovery of common costs and an appropriate return on capital employed.

GGB5.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time.

**[DRAFT] The conditions imposed on KCOM (Hull) plc under the Communications Act 2003 as a result of the analysis of the market for the provision of alternative interface symmetric broadband origination with a bandwidth capacity up to and including one gigabit per second in which KCOM (Hull) plc has been found to have significant market power**

## **Part 1: Definitions and Interpretation of these conditions**

1. These conditions shall apply to the market for the provision of alternative interface symmetric broadband origination with a bandwidth capacity up to and including one gigabit per second within the Hull Area.
2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the markets referred to in paragraph 1 the following definitions shall apply:

**“Act”** means the Communications Act 2003;

**“Dominant Provider”** means KCOM Group plc whose registered company number is 2150618 and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

**“the Hull Area”** means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and KCOM Group plc;

**“Network Component”** means to the extent they are used in the Market the network components specified in a Direction given by Ofcom from time to time for the purpose of these conditions;

**“Reference Offer”** means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract;

**“The Market”** means the market set out in paragraph 1 above;

**“Third Party”** means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network;

**“Transfer Charge”** means the charge or price that is applied, or deemed to be applied, by the Dominant Provider to itself for the use or provision of an activity or group of activities. For the avoidance of doubt such activities or group of activities include, amongst other things, products and services provided from, to or within the Market and the use of Network Components in that Market; and

**“Usage Factor”** means the average usage by any Communications Provider (including the Dominant Provider itself) of each Network Component in using or providing a particular product or service or carrying out a particular activity.

3. Save for the purposes of paragraph 1, except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act.
4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.
5. Headings and titles shall be disregarded.

## **Part 2: The conditions**

### **Condition HA1 – Requirement to provide network access on reasonable request**

HA1.1 Where a Third Party reasonably requests in writing Network Access, the Dominant Provider shall provide that Network Access. The Dominant Provider shall also provide such Network Access as Ofcom may from time to time direct.

HA1.2 The provision of Network Access in accordance with paragraph HA1.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms, conditions and charges and on such terms, conditions and charges as Ofcom may from time to time direct.

HA1.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

### **Condition HA2 – Requirement not to unduly discriminate**

HA2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with Network Access.

HA2.2 In this Condition, the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

### **Condition HA3 – Basis of charges**

HA3.1 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for Network Access covered by Condition HA1 is reasonably derived from the costs of provision based on a forward looking long run incremental cost approach and allowing an appropriate mark up for the recovery of common costs including an appropriate return on capital employed.

HA3.2 The Dominant Provider shall comply with any direction Ofcom may from time to time direct under this Condition.

**Condition HA4 – Requirement to publish a reference offer**

HA4.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

HA4.2 Subject to paragraph HA4.8 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of Network Access includes at least the following:

(a) a description of the Network Access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of Network Access);

(b) the locations of the points of Network Access;

(c) the technical standards for Network Access (including any usage restrictions and other security issues);

(d) the conditions for access to ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing);

(e) any ordering and provisioning procedures;

(f) relevant charges, terms of payment and billing procedures;

(g) details of interoperability tests;

(h) details of maintenance and quality as follows:

(i) specific time scales for the acceptance or refusal of a request for supply and for completion, testing and hand-over or delivery of services and facilities, for provision of support services (such as fault handling and repair);

(ii) service level commitments, namely the quality standards that each party must meet when performing its contractual obligations;

(iii) the amount of compensation payable by one party to another for failure to perform contractual commitments;

(iv) a definition and limitation of liability and indemnity; and

(v) procedures in the event of alterations being proposed to the service offerings, for example, launch of new services, changes to existing services or change to prices;

(i) details of any relevant intellectual property rights;

(j) a dispute resolution procedure to be used between the parties;

(k) details of duration and renegotiation of agreements;

(l) provisions regarding confidentiality of non-public parts of the agreements;

(m) rules of allocation between the parties when supply is limited (for example, for the purpose of co-location or location of masts);

(n) the standard terms and conditions for the provision of Network Access;

- (o) the amount applied to:
- (i) each Network Component used in providing Network Access with the relevant Usage Factors;
  - (ii) the Transfer Charge for each Network Component or combination of Network Components described above;

reconciled in each case to the charge payable by a Communications Provider other than the Dominant Provider.

HA4.3 to the extent that the Dominant Provider provides to itself Network Access that:

- (i) is the same, similar or equivalent to that provided to any other person; or
- (ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in a Reference Offer in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it publishes a Reference Offer in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs HA4.2(a)-(o).

HA4.4 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to any Network Access that it is providing as at the date that this Condition enters into force.

HA4.5 The Dominant Provider shall update and publish the Reference Offer in relation to any amendments or in relation to any further Network Access provided after the date that this Condition enters into force.

HA4.6 Publication referred to above shall be effected by:

- (a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and
- (b) sending a copy of the Reference Offer to Ofcom.

HA4.7 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person's written request (or such parts which have been requested).

HA4.8 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

HA4.9 The Dominant Provider shall provide Network Access at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly.

HA4.10 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

## **Condition HA5 – Requirement to notify technical information**

HA5.1 Save where Ofcom consents otherwise, where the Dominant Provider-

(a) proposes to provide Network Access covered by Condition HA1, the terms and conditions for which comprise new-

(i) technical characteristics (including information on network configuration where necessary to make effective use of the Network Access);

(ii) locations of the points of Network Access; or

(iii) technical standards (including any usage restrictions and other security issues),  
or

(b) proposes to amend an existing Access Contract covered by Condition HA1 by modifying the terms and conditions listed in paragraph HA5.1(a)(i) to (iii) on which the Network Access is provided,

the Dominant Provider shall publish a written notice (the “Notice”) of the new or amended terms and conditions within a reasonable time period but not less than 90 days before either the Dominant Provider enters into an Access Contract to provide the new Network Access or the amended terms and conditions of the existing Access Contract come into effect.

HA5.2 The Dominant Provider shall ensure that the Notice includes-

(a) a description of the Network Access in question;

(b) a reference to the location in the Dominant Provider’s Reference Offer of the relevant terms and conditions;

(c) the date on which or the period for which the Dominant Provider may enter into an Access Contract to provide the new Network Access or any amendments to the relevant terms and conditions will take effect (the “effective date”).

HA5.3 The Dominant Provider shall not enter into an Access Contract containing the terms and conditions identified in the Notice or apply any new relevant terms and conditions identified in the Notice before the effective date.

HA5.4 Publication referred to in paragraph HA5.1 shall be effected by:

(a) placing a copy of the Notice on any relevant website operated or controlled by the Dominant Provider;

(b) sending a copy of the Notice to Ofcom; and

(c) sending a copy of the Notice to any person at that person’s written request, and where the Notice identifies a modification to existing relevant terms and conditions, to every person with which the Dominant Provider has entered into an Access Contract covered by Condition HA1. The provision of such a copy of the Notice may be subject to a reasonable charge.



**[DRAFT] The conditions imposed on KCOM (Hull) plc under the Communications Act 2003 as a result of the analysis of the market for the provision of alternative interface symmetric broadband origination with a bandwidth capacity above one gigabit per second in which KCOM (Hull) plc has been found to have significant market power**

## **Part 1: Definitions and Interpretation of these conditions**

1. These conditions shall apply to the market for the provision of alternative interface symmetric broadband origination with a bandwidth capacity above one gigabit per second within the Hull Area.
2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the markets referred to in paragraph 1 the following definitions shall apply:

**“Act”** means the Communications Act 2003;

**“Dominant Provider”** means KCOM Group plc whose registered company number is 2150618 and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

**“the Hull Area”** means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and KCOM Group plc;

**“Network Component”** means to the extent they are used in the Market the network components specified in a Direction given by Ofcom from time to time for the purpose of these conditions;

**“Reference Offer”** means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract;

**“The Market”** means the market set out in paragraph 1 above;

**“Third Party”** means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network;

**“Transfer Charge”** means the charge or price that is applied, or deemed to be applied, by the Dominant Provider to itself for the use or provision of an activity or group of activities. For the avoidance of doubt such activities or group of activities include, amongst other things, products and services provided from, to or within the Market and the use of Network Components in that Market; and

**“Usage Factor”** means the average usage by any Communications Provider (including the Dominant Provider itself) of each Network Component in using or providing a particular product or service or carrying out a particular activity.

3. Save for the purposes of paragraph 1, except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act.
4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.
5. Headings and titles shall be disregarded.

## **Part 2: The conditions**

### **Condition HB1 – Requirement to provide network access on reasonable request**

HB1.1 Where a Third Party reasonably requests in writing Network Access, the Dominant Provider shall provide that Network Access. The Dominant Provider shall also provide such Network Access as Ofcom may from time to time direct.

HB1.2 The provision of Network Access in accordance with paragraph HB1.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms, conditions and charges and on such terms, conditions and charges as Ofcom may from time to time direct.

HB1.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

### **Condition HB2 – Requirement not to unduly discriminate**

HB2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with Network Access.

HB2.2 In this Condition, the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

### **Condition HB3 – Basis of charges**

HB3.1 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for Network Access covered by Condition HB1 is reasonably derived from the costs of provision based on a forward looking long run incremental cost approach and allowing an appropriate mark up for the recovery of common costs including an appropriate return on capital employed.

HB3.2 The Dominant Provider shall comply with any direction Ofcom may from time to time direct under this Condition.

**Condition HB4 – Requirement to publish a reference offer**

HB4.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

HB4.2 Subject to paragraph HB4.8 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of Network Access includes at least the following:

(a) a description of the Network Access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of Network Access);

(b) the locations of the points of Network Access;

(c) the technical standards for Network Access (including any usage restrictions and other security issues);

(d) the conditions for access to ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing);

(e) any ordering and provisioning procedures;

(f) relevant charges, terms of payment and billing procedures;

(g) details of interoperability tests;

(h) details of maintenance and quality as follows:

(i) specific time scales for the acceptance or refusal of a request for supply and for completion, testing and hand-over or delivery of services and facilities, for provision of support services (such as fault handling and repair);

(ii) service level commitments, namely the quality standards that each party must meet when performing its contractual obligations;

(iii) the amount of compensation payable by one party to another for failure to perform contractual commitments;

(iv) a definition and limitation of liability and indemnity; and

(v) procedures in the event of alterations being proposed to the service offerings, for example, launch of new services, changes to existing services or change to prices;

(i) details of any relevant intellectual property rights;

(j) a dispute resolution procedure to be used between the parties;

(k) details of duration and renegotiation of agreements;

(l) provisions regarding confidentiality of non-public parts of the agreements;

(m) rules of allocation between the parties when supply is limited (for example, for the purpose of co-location or location of masts);

(n) the standard terms and conditions for the provision of Network Access;

- (o) the amount applied to:
- (i) each Network Component used in providing Network Access with the relevant Usage Factors;
  - (ii) the Transfer Charge for each Network Component or combination of Network Components described above;

reconciled in each case to the charge payable by a Communications Provider other than the Dominant Provider.

HB4.3 to the extent that the Dominant Provider provides to itself Network Access that:

- (i) is the same, similar or equivalent to that provided to any other person; or
- (ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in a Reference Offer in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it publishes a Reference Offer in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs HB4.2(a)-(o).

HB4.4 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to any Network Access that it is providing as at the date that this Condition enters into force.

HB4.5 The Dominant Provider shall update and publish the Reference Offer in relation to any amendments or in relation to any further Network Access provided after the date that this Condition enters into force.

HB4.6 Publication referred to above shall be effected by:

- (a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and
- (b) sending a copy of the Reference Offer to Ofcom.

HB4.7 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person's written request (or such parts which have been requested).

HB4.8 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

HB4.9 The Dominant Provider shall provide Network Access at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly.

HB4.10 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

### **Condition HB5 – Requirement to notify technical information**

HB5.1 Save where Ofcom consents otherwise, where the Dominant Provider-

(a) proposes to provide Network Access covered by Condition HB1, the terms and conditions for which comprise new-

(i) technical characteristics (including information on network configuration where necessary to make effective use of the Network Access);

(ii) locations of the points of Network Access; or

(iii) technical standards (including any usage restrictions and other security issues),  
or

(b) proposes to amend an existing Access Contract covered by Condition HB1 by modifying the terms and conditions listed in paragraph HB5.1(a)(i) to (iii) on which the Network Access is provided,

the Dominant Provider shall publish a written notice (the “Notice”) of the new or amended terms and conditions within a reasonable time period but not less than 90 days before either the Dominant Provider enters into an Access Contract to provide the new Network Access or the amended terms and conditions of the existing Access Contract come into effect.

HB5.2 The Dominant Provider shall ensure that the Notice includes-

(a) a description of the Network Access in question;

(b) a reference to the location in the Dominant Provider’s Reference Offer of the relevant terms and conditions;

(c) the date on which or the period for which the Dominant Provider may enter into an Access Contract to provide the new Network Access or any amendments to the relevant terms and conditions will take effect (the “effective date”).

HB5.3 The Dominant Provider shall not enter into an Access Contract containing the terms and conditions identified in the Notice or apply any new relevant terms and conditions identified in the Notice before the effective date.

HB5.4 Publication referred to in paragraph HB5.1 shall be effected by:

(a) placing a copy of the Notice on any relevant website operated or controlled by the Dominant Provider;

(b) sending a copy of the Notice to Ofcom; and

(c) sending a copy of the Notice to any person at that person’s written request, and where the Notice identifies a modification to existing relevant terms and conditions, to every person with which the Dominant Provider has entered into an Access Contract covered by Condition HB1. The provision of such a copy of the Notice may be subject to a reasonable charge.

## Schedule 4

**[Draft] Direction under section 49 of the Communications Act 2003 and SMP Services Condition G1 imposed on British Telecommunications plc ('BT') as a result of the market power determinations made by the Office of Communications ('Ofcom') that BT has significant market power in the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second for the UK (excluding the Hull Area)**

### WHEREAS:

- (A) as a result of a market analysis carried out by Ofcom, it proposed on 17 January 2008, in accordance with sections 48 (2) and 80 of the Act, that the Dominant Provider has significant market power in the markets for the provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second for the UK (excluding the Hull Area);
- (B) Ofcom further proposed SMP Service Condition G1 which imposes various obligations on the Dominant Provider, *inter alia*, the obligation to comply with any Direction Ofcom may from time to time make under this Condition;
- (C) this [Draft] Direction concerns matters to which Condition G1 relates;
- (D) for the reasons set out in the explanatory statement accompanying this [Draft] Direction, Ofcom is satisfied that, in accordance with section 49(2) of the Act, this [Draft] Direction is:
  - (i) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;
  - (ii) not such as to discriminate unduly against particular persons or against a particular description of persons;
  - (iii) proportionate to what it is intended to achieve; and
  - (iv) in relation to what it is intended to achieve, transparent;
- (E) for the reasons set out in the explanatory statement accompanying this [Draft] Direction, Ofcom is satisfied that he has acted in accordance with the relevant duties set out in sections 3 and 4 of the Act;
- (F) Ofcom has published a notification of the proposed [Draft] Direction in accordance with section 49 of the Act;

**NOW, therefore, pursuant to Condition G1 Ofcom makes the following Direction:**

For the purpose of interpreting this Direction the following definitions shall apply:

“**Act**” means the Communications Act 2003;

“**Central and East London Area**” (‘CELA’) means the area in London consisting of the postal sectors set out in Schedule 1 to the Notification contained in Annex 15 to Ofcom’s explanatory statement published on 17 January 2008.

**“The Directions”** means the Directions made under Conditions G1, G3 and G7 and published on the same day as this Direction;

**“Dominant Provider”** means British Telecommunications plc (‘BT’), whose registered company number is 1800000 and any British Telecommunications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by Section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

**“Hull Area”** means the area defined as the ‘Licensed Area’ in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and KCOM Group plc;

**“Point of Connection”** means a point at which the Dominant Provider’s Electronic Communications Network and another person’s Electronic Communications Network are connected;

**“Third Party”** means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network.

For the purpose of this Direction the following terms shall have the meaning as set out in the Dominant Provider’s Standard PPC Handover Agreement, as at the date of publication of this Direction, but with the necessary changes in order to ensure compliance with the Directions.

Advance Capacity Order

Advance Order Commitment

BT Retail Private Circuit

BT Serving Node

Capacity Order

Capacity Profile

Customer Sited Handover (“CSH”)

Forecast Profile

In building Handover (“IBH”)

In-Span Handover (“ISH”)

Re-Designation

Qualifying BT Retail Private Circuit

The following definitions shall also apply for the purpose of this Direction:

<b>Term</b>	<b>Definition</b>
Acceptance of Terms	



	Date on which a Third Party confirms acceptance of delivery conditions and is committed to the order.
Civil Works	Works that necessitate the digging up of a street for the installation of ducts.
Committed Delivery Date	The date confirmed by the Dominant Provider as the delivery date.
Firm Offer Confirmation (“FOC”)	Confirmation by the Dominant Provider in writing (by fax or e-mail) to a Third Party of the delivery conditions including price and Committed Delivery Date, after acknowledging receipt of an order for a Partial Private Circuit or Network Infrastructure from a Third Party.
FOC Acceptance Interval	The number of working days from the FOC Date until the Acceptance of Terms.
FOC Date	The date on which the Dominant Provider makes a Firm Offer Confirmation.
FOC Receipt Interval	The number of working days from the Order Request Date until the FOC Date.
Installation Date	Date of installation of a Partial Private Circuit or Network Infrastructure.
Network Infrastructure	The categories of products listed in the table contained in paragraph 49 of this Direction.
Order Request Date	Date on which a Third Party dispatches a valid Partial Private Circuit order, or Network Infrastructure order, to the Dominant Provider.
Partial Private Circuit (“PPC”)	A circuit provided pursuant to the PPC Contract and in accordance with the Directions.
PPC Contract	The Dominant Provider's Standard PPC Handover Agreement as at the date of publication of this Direction.
Provisioning Interval	The number of working days from the Order Request Date until the Installation Date.
Requisite Period	The period commencing on the Order Request Date and ending on the applicable working day as set out in the tables in paragraphs 39 and 49 of this Direction.



Partial Private Circuit, it shall give to the Third Party a refund as set out in paragraphs 8 and 9 of this Direction.

8. Where paragraph 7 of this Direction applies, the Dominant Provider shall refund to the Third Party a sum of money equal to the difference between:

- the charge levied by the Dominant Provider for the BT Retail Private Circuit to which the request for migration relates; and
- the charge levied by the Dominant Provider for the Partial Private Circuit to which the request for migration relates.

9. The refund set out in paragraph 8 of this Direction shall cover the period from the date the Dominant Provider receives the request to migrate until the date the Dominant Provider completes the migration.

10. The Dominant Provider shall, upon a Third Party's written request, provide to the Third Party a map of its network within the United Kingdom which clearly illustrates and labels the geographic location of each Dominant Provider tier 1, tier 1.5, tier 2, and tier 3 node.

### Forecasts

11. The Dominant Provider shall only require a Third Party to provide a profile of future Partial Private Circuit capacity ordering intentions over a 12 month period, on a national aggregate basis for groupings of bandwidths no narrower than the following:

- less than 1 Mbit/s; and
- 1 Mbit/s through to 2 Mbit/s.

12. The Dominant Provider shall allow a Third Party to set its Advance Capacity Order and Advance Order Commitment without any penalty by up to, 10% (by volume) below, or 20% (by volume) above, the amount stated in the Third Party's previous Capacity Profile or Forecast Profile for the period covered by the Advance Capacity Order or Advance Order Commitment.

13. The Dominant Provider shall allow a Third Party to revise periods covered by its previously stated Capacity Profile and Forecast Profile without any penalty by up to, 30% (by volume) below, or 30% (by volume) above, the amount stated in the Third Party's previous Capacity Profile or Forecast Profile, provided that paragraph 12 of this Direction does not apply.

14. In calculating any increase to an Advance Capacity Order, Advance Order Commitment, Capacity Profile or Forecast Profile pursuant to paragraphs 12 and 13 of this Direction, the outcome of the revision shall, if not an integer, be rounded up to the nearest integer.

15. In calculating any decrease to an Advance Capacity Order, Advance Order Commitment, Capacity Profile or Forecast Profile pursuant to paragraphs 12 and 13 of this Direction, the outcome of the revision shall, if not an integer, be rounded down to the nearest integer.

16. Where a Third Party places a Capacity Order at a Point of Connection for the period corresponding to that of the Advance Capacity Order, which total less than its Advance Capacity Order for the Point of Connection, the Dominant Provider may levy a charge no more than a sum equal to:

$$[(80\% \text{ of } B) - C] \times \text{£}2,490$$

Where B is the total capacity provision by number of VC4-equivalent units specified in the relevant Advance Capacity Order in respect of each Point of Connection; and

Where C is the number of VC4-equivalents ordered during the period to which the relevant Advance Capacity Order relates in respect of each Point of Connection, but does not include cancellations of Capacity Orders made during or after the relevant Advanced Capacity Order period, but does include any Capacity Order cancelled as a result of the inability of the Dominant Provider to secure consents for CSH links.

17. Where a Third Party places orders for Partial Private Circuits below 1 Mbit for the period corresponding to that of the Advanced Order Commitment, which total less than its Advance Order Commitment for the Partial Private Circuits below 1 Mbit, the Dominant Provider may levy a charge no more than a sum equal to:

$$[(80\% \text{ of } B) - C] \times \text{£}52$$

Where B is the total Advance Order Commitment for Private Partial Circuits below 1 Mbit; and

Where C is the number of Partial Private Circuits below 1 Mbit ordered during the period to which the Advance Order Commitment relates, but does not include cancellations of orders for Partial Private Circuits made during or after the relevant Advanced Order Commitment period, but does include any order for a Partial Private Circuit cancelled as a result of the inability of the Dominant Provider to secure consents for Partial Private Circuits.

18. Where a Third Party places orders for Partial Private Circuits from 1 Mbit through to 2 Mbit/s for the period corresponding to that of the Advanced Order Commitment, which total less than its Advance Order Commitment for Partial Private Circuits from 1 Mbit through to 2 Mbit/s, the Dominant Provider may levy a charge no more than a sum equal to:

$$[(80\% \text{ of } B) - C] \times \text{£}143$$

Where B is the total Advance Order Commitment for Private Partial Circuits from 1 Mbit through to 2 Mbit/s; and

Where C is the number of Partial Private Circuits from 1 Mbit through to 2 Mbit/s ordered during the period to which the Advance Order Commitment relates, but does not include cancellations of orders for Partial Private Circuits made during or after the relevant Advanced Order Commitment period, but does include any order for a Partial Private Circuit cancelled as a result of the inability of Dominant Provider to secure consents for Partial Private Circuits.

19. [Paragraph not used].

20. In calculating (80% of B) in paragraphs 16 to 18 inclusive of this Direction the outcome shall, if not an integer, be rounded down to the nearest integer.

## **Service level agreements**

### ***General***

21. The Dominant Provider shall set a Committed Delivery Date for each Partial Private Circuit or Network Infrastructure ordered from it by a Third Party.

22. For each Partial Private Circuit or Network Infrastructure ordered from the Dominant Provider by a Third Party, the Dominant Provider shall provide to a Third Party Firm Offer Confirmation in the manner set out in the definition section of this Direction.

23. The time scales and levels of fixed individual compensation payments to be payable under the service level agreement shall be those set out in the Directions, unless otherwise agreed between the Dominant Provider and a Third Party, or except to the extent that Ofcom otherwise consents.

24. Unless otherwise agreed between the Dominant Provider and a Third Party, any fixed individual compensation payment, or reimbursement pursuant to paragraph 28 of this Direction, payable by the Dominant Provider to a Third Party pursuant to the Directions shall be offset by the Dominant Provider against the money owed to it by the Third Party, on a quarterly basis. The Dominant Provider shall keep complete and accurate records of the amounts it has offset in accordance with this paragraph. Such records shall be made available by the Dominant Provider following a request by a Third Party.

25. The Dominant Provider shall not be liable to pay fixed individual compensation payments pursuant to the Directions for periods of delay which arise due to circumstances beyond its reasonable control. The Dominant Provider shall notify a Third Party as soon as reasonably practicable when such circumstances arise. All contractors or sub-contractors of whatever level, and their respective employees, servants and agents, shall for the purpose of this paragraph be treated as employees of the Dominant Provider. Major construction works shall not be considered circumstances beyond the Dominant Provider's reasonable control.

26. The Dominant Provider shall ensure that any time limits set out in this Direction shall not apply to a Third Party to the extent that periods of delay arise due to circumstances beyond its reasonable control. The Third Party shall notify the Dominant Provider as soon as reasonably practicable when such circumstances arise. All contractors or sub-contractors of whatever level, and their respective employees, servants and agents, shall for the purpose of this paragraph be treated as employees of the relevant Third Party.

27. The Dominant Provider shall, at the reasonable request of a Third Party, postpone the Committed Delivery Date of a Partial Private Circuit or Network Infrastructure if such postponement is technically and organisationally reasonable. In agreeing to such a postponement the Dominant Provider shall only charge for reasonable additional expenses it has directly incurred as a result of the postponement.

28. The Dominant Provider shall only postpone the Committed Delivery Date of a Partial Private Circuit or Network Infrastructure with the written agreement of the Third Party. The Dominant Provider shall inform the Third Party as soon as reasonably possible of any proposed postponement of the Committed Delivery Date. Where such a postponement takes place the Dominant Provider shall reimburse the Third Party for any reasonable additional cost incurred by the Third Party as a direct result of the postponement.

29. The FOC Receipt Interval shall be a maximum of:

- five working days for Partial Private Circuits of less than 2 Mbit/s; and
- eight working days for Partial Private Circuits of 2 Mbit/s and Network Infrastructure;

regardless of how many Partial Private Circuits are, or the amount of Network Infrastructure is, ordered at a particular site.

30. The Dominant Provider shall ensure that the FOC Acceptance Interval is a maximum of one working day for Partial Private Circuits of 2 Mbit/s or below and two working days for Network Infrastructure. Where a Third Party has not informed the Dominant Provider of its Acceptance of Terms or rejection of the order within five working days of the FOC Date, the Dominant Provider may cancel the Third Party's order.

31. The Dominant Provider shall keep complete and accurate records of the ordering, provision and repair of Partial Private Circuits and Network Infrastructure it provides to a Third Party.

32. Where any Partial Private Circuit or Network Infrastructure which is ordered by a Third Party is in excess of 110% (by volume), rounded up to the nearest integer where necessary, of its Advance Order Commitment or Advance Capacity Order, the applicable Requisite Period set out in the tables in paragraphs 39 and 49 of this Direction shall be extended by 50% and rounded up to the nearest working day, where necessary, for the purposes of calculating fixed individual compensation payments.

#### *Unliquidated damages*

33. Nothing in the PPC Contract, as amended by the Directions, shall prevent a Third Party from bringing a claim against the Dominant Provider for unliquidated damages over and above the fixed individual compensation payments set out in the Directions.

#### **Partial Private Circuits**

##### *Quick quote and high bandwidth quote on line*

34. The Dominant Provider shall provide to a Third Party, upon written request, the necessary wholesale network and pricing information to enable the Third Party to obtain the same information for Partial Private Circuits that is available to the Dominant Provider's retail arm, for its "Quick Quote" quote facilities.

##### *Concurrency of Partial Private Circuit and ISH link and CSH link delivery times*

35. Where a Third Party has ordered a Partial Private Circuit, and the operation of the circuit requires the provision of an ISH link, CSH link or IBH link, the Dominant Provider shall ensure that the delivery dates of the Partial Private Circuit and the CSH link, ISH link or IBH link are the same.

##### *Expedited orders*

36. Upon a Third Party's written request, the Dominant Provider shall make reasonable endeavours to set a Committed Delivery Date for Partial Private Circuits within 50% of the relevant Requisite Period set out in the table in paragraph 39 of this Direction, rounded up to the nearest working day where necessary, for at least 15% (by volume) of a Third Party's previous month's order. The Third Party shall inform the Dominant Provider which particular Partial Private Circuits it shall endeavour to be expedited pursuant to this paragraph. This paragraph shall only apply to the delivery of Partial Private Circuits of 2 Mbit/s or less. This paragraph shall not apply to Partial Private Circuits which exceed 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Order Commitment.

37. Paragraph 46 of this Direction does not apply to orders of Partial Private Circuits made pursuant to paragraph 36 of this Direction.

*Time scales for fixed individual compensation*

38. Where the Committed Delivery Date for Partial Private Circuits is set by the Dominant Provider later than the relevant Requisite Period (as set out in the table in paragraph 39 of this Direction) without the agreement of a Third Party, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 5% of the monthly rental for the Private Partial Circuit delayed, per working day or part of a working day in respect of the period commencing immediately on the expiry of the relevant Requisite Period and expiring on the Installation Date.

39. Where the Committed Delivery Date for Partial Private Circuits is set by the Dominant Provider either, later than the relevant Requisite Period (as set out in the table below) but with the agreement of a Third Party, or within the Requisite Period, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 5% of the monthly rental for the Private Partial Circuit delayed, per working day or part of a working day in respect of the period commencing immediately on the working day following the Committed Delivery Date and expiring on the Installation Date.

<b>Bandwidth of Partial Private Circuit</b>	<b>Requisite Period</b>
64 kbit/s	10 working days
128 kbit/s to 256 kbit/s delivered over copper	10 working days
128 kbit/s to 256 kbit/s delivered over fibre	30 working days
320 kbit/s to 960 kbit/s	30 working days
1 Mbit/s	30 working days
2 Mbit/s	30 working days
Subsequent Partial Private Circuit of 2 Mbit/s	10 working days

*Third Party's ability to cancel order*

40. Where the Provisioning Interval exceeds the relevant Requisite Period set out in the table in paragraph 39 of this Direction, a Third Party shall be allowed to cancel its order for a Partial Private Circuit after the Cancellation Threshold (as set out in the table below) has expired. The Cancellation Threshold shall commence upon the expiry of the relevant Requisite Period set out in the table in paragraph 39 of this Direction. The Requisite Periods in the table in paragraph 39 shall apply, for the purposes of this paragraph, regardless of whether there is a delay in delivery of a Partial Private Circuit which is due to circumstances beyond the Dominant Provider's reasonable control but not including delay by a Third Party.

<b>Requisite Period set out in the table in paragraph 39 of this Direction</b>	<b>Cancellation Threshold</b>
10 working days	10 working days
30 working days	20 working days

41. Where a Third Party cancels a Partial Private Circuit pursuant to paragraph 40 of this Direction, the Dominant Provider shall not charge the Third Party for the circuit and shall not charge for cancelling the circuit. The Dominant Provider shall also be liable to pay the Third Party any fixed individual compensation payments accumulated pursuant to the PPC Contract as amended by the Directions.

*Reduced Requisite Periods for Partial Private Circuits*

42. The Dominant Provider shall ensure that for at least 70% (by volume) of Partial Private Circuits of a particular bandwidth delivered by the Dominant Party to a Third Party within a three month period (such period not to be calculated on a rolling basis) the Committed Delivery Date is set within the relevant Reduced Requisite Period (as set out in the table below).

<b>Bandwidth of Partial Private Circuit</b>	<b>Reduced Requisite Period</b>
128 kbit/s to 256 kbit/s delivered over fibre	20 working days
320 kbit/s to 960 kbit/s	20 working days
1 Mbit/s	20 working days
2 Mbit/s	20 working days

43. In calculating the 70% (by volume) of Partial Private Circuits to which paragraph 42 of this Direction applies the following shall not be included:

- Partial Private Circuits of 64 kbit/s;
- Partial Private Circuits of 128 kbit/s to 256 kbit/s delivered over copper;
- Subsequent Private Partial Circuits of 2Mbit/s;
- Partial Private Circuit orders to which paragraph 36 of this Direction applies; and
- Partial Private Circuits which exceed 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Order Commitment.

44. The Reduced Requisite Periods set out in the table in paragraph 42 of this Direction apply only if, in the previous three month reporting period (such period not to be calculated on a rolling basis), a Third Party has ordered from the Dominant Provider at least ten Partial Private Circuits of the same bandwidth where such Partial Private Circuits are 2 Mbit/s or less.

45. For the purposes of this Direction, in determining whether 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Order Commitment has been exceeded, the calculation shall be at a national level for each individual Partial Private Circuit bandwidth category and applied in the order in which the Partial Private Circuits were ordered by the Third Party.

*Multiple orders*



46. Where the Dominant Provider receives an order for more than 10 Partial Private Circuits at one site from a Third Party, the relevant Requisite Period applicable to determine whether the Dominant Provider shall pay fixed individual compensation as set out in paragraphs 38 and 39 of this Direction, shall be the relevant Requisite Period set out in the table in paragraph 39 of this Direction increased by a maximum of 50%. The Dominant Provider shall inform the Third Party of the revised time scales as soon as reasonably practicable.

*Availability of service*

47. When total loss of service (i.e. total loss of service for one minute or longer) occurs three or more times, within a 12 month period, to a Partial Private Circuit, the Third Party shall not be liable to the Dominant Provider for the monthly rental in any subsequent month where total loss of failure occurs to the Partial Private Circuit, until such time as 12 months have passed and the Partial Private Circuit has not suffered total loss of service. Occurrences of total loss of service which result in the Dominant Provider being liable to pay fixed individual compensation pursuant to paragraphs 58, 59 and 61 of this Direction, shall not be considered as an occurrence of a total loss of service for the purposes of this paragraph.

**Network Infrastructure**

*Time scales for fixed individual compensation*

48. Where the Committed Delivery Date for Network Infrastructure is set by the Dominant Provider later than the relevant Requisite Period (as set out in the table in paragraph 49 of this Direction) without the agreement of a Third Party, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 0.3% of the connection fee for the Network Infrastructure, per working day, or part of a working day, in respect of the period commencing immediately on the expiry of the relevant Requisite Period and expiring on the Installation Date,

49. Where the Committed Delivery Date for Network Infrastructure is set by the Dominant Provider either, later than the relevant Requisite Period (as set out in the table below) but with the agreement of a Third Party, or within the Requisite Period, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 0.3% of the connection fee for the Network Infrastructure, in respect of the period commencing immediately on the working day following the Committed Delivery Date and expiring on the Installation Date.

<b>Network Infrastructure</b>	<b>Requisite Period (where the Dominant Provider needs to carry out Civil Works)</b>	<b>Requisite Period (where the Dominant Provider does not need to carry out Civil Works)</b>
ISH links	110 working days	85 working days
CSH links	110 working days	85 working days
IBH links	110 working days	85 working days
ISH links – provision of new multiplexor on an existing Point of Connection	Not applicable	60 working days
ISH links - provision of		

extra STM-1 interface on existing STM-1 ISH SMA4 multiplexor	Not applicable	60 working days
CSH links - provision of new multiplexor on existing Point of Connection	Not applicable	60 working days
CSH links requiring only provision of new tributary card on existing multiplexor	Not applicable	25 working days

*Third Party's ability to cancel order*

50. Where the Provisioning Interval exceeds the relevant Requisite Period set out in the table in paragraph 49 of this Direction, a Third Party shall be allowed to cancel its order for Network Infrastructure after the Cancellation Threshold (as set out in the table below) has expired. The Cancellation Threshold shall commence upon the expiry of the relevant Requisite Period set out in the table in paragraph 49 of this Direction. The Requisite periods in the table in paragraph 49 shall apply, for the purposes of this paragraph, regardless of whether there is a delay in delivery of Network Infrastructure which is due to circumstances beyond the Dominant Provider's reasonable control but not including delay by a Third Party.

<b>Requisite Period set out in the table in paragraph 49 of this Direction</b>	<b>Cancellation Threshold</b>
21 to 40 working days	20 working days
41 to 60 working days	25 working days
61 to 90 working days	30 working days
Over 90 working days	40 working days

51. Where a Third Party cancels Network Infrastructure pursuant to paragraph 50 of this Direction, the Dominant Provider shall not charge the Third Party for the Network Infrastructure and shall not charge for cancelling the Network Infrastructure. The Dominant Provider shall also be liable to pay the Third Party any fixed compensation payments accumulated pursuant to the PPC Contract as amended by the Directions.

*Reduced Requisite periods for Network Infrastructure*

52. The Dominant Provider shall ensure that for at least 70% (by volume) of the total VC4-equivalents of Network Infrastructure delivered by it to a Third Party during a three month period (such period not to be calculated on a rolling basis) the Committed Delivery Date is set within the relevant Reduced Requisite Period (as set out in the table below).

<b>Network Infrastructure</b>	<b>Reduced Requisite Period (where the Dominant Provider needs to carry out Civil Works)</b>	<b>Reduced Requisite Period where the Dominant Provider does not need to carry out Civil Works)</b>
ISH links	75 working days	60 working days

CSH links	75 working days	60 working days
IBH links	75 working days	60 working days
ISH links - provision of new multiplexor on an existing Point of Connection	Not applicable	40 working days
ISH links - provision of extra STM-1 interface on existing STM-1 ISH SMA4 multiplexor	Not applicable	40 working days
CSH links - provision of new multiplexor on existing Point of Connection	Not applicable	40 working days
CSH links requiring only provision of new tributary card on existing multiplexor	Not applicable	20 working days

53. In calculating the 70% (by volume) of the total VC4-equivalents of Network Infrastructure to which paragraph 52 of this Direction applies the following shall not be included:

- Network Infrastructure which exceeds 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Capacity Order.

54. The Reduced Requisite Periods set out in the table in paragraph 52 of this Direction only apply if, in the previous three month reporting period (such period not to be calculated on a rolling basis) a Third Party has ordered from the Dominant Provider at least 2 VC4-equivalents of Network Infrastructure. For the purposes of this paragraph the first reporting period of three months shall be the first such reporting period falling after 30 working days following the date of publication of this Direction.

55. For the purposes of this Direction, in determining whether 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Capacity Order has been exceeded, the calculation shall be made using VC4-equivalents at each Point of Connection applied in the order in which the Network Infrastructure was ordered by the Third Party.

***Repair of Partial Private Circuits and Network Infrastructure***

56. Where the Dominant Provider offers to a Third Party Regular Care and Enhanced Care for Partial Private Circuits and Network Infrastructure it shall do so at a cost orientated price and as set out in the table below:

	<b>Operational hours</b>	<b>Repair/response time</b>	<b>Extras</b>
<b>Regular Care</b>	Normal working hours	Response within one working day of receipt of a fault	If a fault is not remedied within two working days of receipt of a fault report

		report by a Third Party. Repair within two working days of receipt of a fault report by a Third Party.	by a Third Party, the Dominant Provider shall call the Third Party to report progress being made to remedy the fault.
<b>Enhanced Care</b>	24 hours per day, 7 days per week (including public and bank holidays).	Response within four hours of receipt of a fault report from a Third Party. Repair within five hours of receipt of a fault report by a Third Party.	If a fault is not remedied within five hours of receipt of a fault report by a Third Party, the Dominant Provider shall contact the Third Party to report progress being made to remedy the fault.

57. Receipt by the Dominant Provider from a Third Party of a report of a fault concerning a Partial Private Circuit or Network Infrastructure, shall be acknowledged by the Dominant Provider to the Third Party within one hour.

58. Where the Dominant Provider fails to repair a Partial Private Circuit within the time limits set out in the table in paragraph 56 of this Direction it shall pay to the Third Party a fixed individual compensation payment as set out in paragraphs 59 to 63 inclusive of this Direction in respect of the period commencing on the expiry of the applicable repair time set out in the table in paragraph 56 and expiring at the time the Partial Private Circuit or Network Infrastructure is repaired.

59. Where the Third Party has ordered the Dominant Provider's Regular Care for Partial Private Circuits, the Dominant Provider shall pay the Third Party an amount equal to 100% of the monthly rental payable for the type of Partial Private Circuit being repaired per working day, or part of a working day, of delay in repair.

60. Where the Third Party has ordered the Dominant Provider's Regular Care for Network Infrastructure, the Dominant Provider shall pay the Third Party an amount equal to 1% of the connection fee for the type of Network Infrastructure being repaired per working day, or part of a working day, of delay in repair.

61. Where the Third Party has ordered the Dominant Provider's Enhanced Care for Partial Private Circuits, the Dominant Provider shall pay the Third Party an amount equal to 15% of the monthly rental payable for the type of Partial Private Circuit being repaired per hour, or part of an hour, of delay in repair.

62. Where the Third Party has ordered the Dominant Provider's Enhanced Care for Network Infrastructure, the Dominant Provider shall pay the Third Party an amount equal to 0.15% of the connection fee for the type of Network Infrastructure being repaired per hour, or part of an hour, of delay in repair.

63. The Dominant Provider shall not be liable to pay fixed individual compensation pursuant to paragraphs 60 and 62 of this Direction where it is also liable for fixed individual compensation pursuant to paragraphs 59 and 61 of this Direction where the Partial Private Circuit is being provided using the Network Infrastructure which is being repaired.

64. The Dominant Provider shall attend, and invite Third Parties to regular meetings to review the level of service provided by it in relation to Partial Private Circuits and related Network Infrastructure.

#### **Change of speed or interface**

65. The Dominant Provider shall offer to provide within a reasonable period of a Third Party's written request, the ability to alter the speed or interface of a Partial Private Circuit.

66. The Dominant Provider shall ensure that it provides to a Third Party a Partial Private Circuit variant for the services to which paragraph 65 of this Direction applies, which are equivalent to the services it currently provides on a retail basis for retail leased lines.

#### **STM-1, ISH and CSH handover**

67. The Dominant Provider shall offer to provide within a reasonable period of a Third Party's written request for a Synchronous Transfer Mode-1 ("STM-1"), an interface using an ISH link, CSH link or IBH link; and handover pursuant to paragraph 68 of this Direction. Such link or handover shall be provided by way of network connecting apparatus capable of providing no more than the STM-1 capacity ordered by the Third Party.

68. The Dominant Provider shall within a reasonable period of a Third Party's written request, handover in a footway jointing chamber for Partial Private Circuits at a reasonable point nominated by the Third Party. The footway jointing chamber shall be located in the same Dominant Provider local serving exchange area as the Dominant Provider Serving Node to which the Partial Private Circuits being handed over are connected.

#### **Equipment re-use**

69. Paragraph 70 of this Direction shall only apply to the re-use of Plesiochronous Digital Hierarchy ("PDH") and Synchronous Digital Hierarchy ("SDH") equipment situated at a third party site ("Equipment").

70. The Dominant Provider may reject a request by a Third Party for re-use of PDH Equipment if such re-use would be incompatible with its network. Any such rejection by the Dominant Provider shall be made within 10 working days of a request by the Third Party and fully justified in writing to the requesting Third Party at the same time as the request is rejected.

#### **Other Circuits**

71. Unless Ofcom otherwise agrees, the Dominant Provider shall, offer to provide Partial Private Circuit with no single point of failure, within a reasonable period of a Third Party's request.

72. The Dominant Provider shall offer to provide, within a reasonable period of a Third Party's written request, a Partial Private Circuit which is dual pathed and diversely routed from a third party customer's premises to a Third Party's single Point of Connection.

73. The Dominant Provider shall offer to provide to a Third Party, within a reasonable period of the Third Party's written request, transparent transmission capacity at all bandwidths up to and including a bandwidth capacity of two megabits per second between a radio base station and a Point of Connection with a Third Party's electronic communications network connected to the nearest appropriate digital cross connection node.

74. The Dominant Provider shall provide to the Third Party the product set out in paragraph 73 of this Direction on terms and conditions which, where appropriate, are comparable to the provisions relating to service level agreements, forecasting penalties and migration set out in paragraphs 1 to 64 of this Direction and the Direction made under Condition G3 and published on the same day as this Direction.

75. The Dominant Provider shall implement this Direction within 10 working days of its publication.

76. This Direction shall take effect on the day it is published.

**Gareth Davies**  
**Competition Policy Director, Ofcom**

**A person duly authorised in accordance with paragraph 18 of the Schedule to the Office of Communications Act 2002**

**[ Date ]**

**[Draft] Direction under section 49 of the Communications Act 2003 and SMP Services Condition G7 imposed on British Telecommunications plc ('BT') as a result of the market power determinations made by the Office of Communications ('Ofcom') that BT has significant market power in the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second for the UK (excluding the Hull Area)**

**WHEREAS:**

- (A) as a result of a market analysis carried out by Ofcom, it proposed on 17 January 2008, in accordance with sections 48 (2) and 80 of the Act, that the Dominant Provider has significant market power in the markets for the provision of traditional interface symmetric broadband origination with a bandwidth capacity up to and including eight megabits per second for the UK (excluding the Hull Area);
- (B) Ofcom further proposed SMP Service Condition G7 which imposes various obligations on British Telecom plc ('BT'), *inter alia*, the obligation to comply with any Direction Ofcom may from time to time make under this Condition;
- (C) this [Draft] Direction concerns matters to which Condition G7 relates;
- (D) for the reasons set out in the explanatory statement accompanying this [Draft] Direction, Ofcom is satisfied that, in accordance with section 49(2) of the Act, this [Draft] Direction is:
  - (i) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;
  - (ii) not such as to discriminate unduly against particular persons or against a particular description of persons;
  - (iii) proportionate to what it is intended to achieve; and
  - (iv) in relation to what it is intended to achieve, transparent;
- (E) for the reasons set out in the explanatory statement accompanying this [Draft] Direction, Ofcom is satisfied that he has acted in accordance with the relevant duties set out in sections 3 and 4 of the Act;
- (F) Ofcom has published a notification of the proposed [Draft] Direction in accordance with section 49 of the Act;

**NOW, therefore, pursuant to Condition G7 Ofcom makes the following Direction:**

For the purpose of interpreting this Direction the definitions set out in the Direction made under Condition G1 and published on the same day as this Direction shall apply.

Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them.

The Interpretation Act 1978 shall apply as if this Direction was an Act of Parliament.

Headings and titles shall be disregarded.

1. The Dominant Provider shall, on a quarterly basis, publish the following information for each Third Party to whom it provides Partial Private Circuits on an individual and anonymous basis; and on an aggregated basis with respect to all such Third Parties on an anonymous basis:

- its performance with respect to Committed Delivery Dates, Requisite Periods, Reduced Requisite Periods, FOC Receipt Intervals, repair and availability of service;
- a list of incidences of circumstances beyond the reasonable control of the Dominant Provider, split by reason;
- the percentage of each Third Party's previous month's orders having Committed Delivery Dates quoted within 50% of the Requisite Periods set out in the table in paragraph 39 of the Direction made under Condition G1 and published on the same day as this Direction;
- the number and percentage of instances where each Third Party exceeds the applicable FOC Acceptance Interval, set out by bandwidth, for Partial Private Circuits;
- the number and percentage of instances where each Third Party exceeds the applicable FOC Acceptance Interval for Network Infrastructure;
- the average amount by which each Third Party exceeds the applicable FOC Acceptance Interval, set out by bandwidth, for Partial Private Circuits;
- the average amount by which each Third Party exceeds the applicable FOC Acceptance Interval for Network Infrastructure;
- the number and percentage of orders for Partial Private Circuits rejected by the Dominant Provider;
- the number and percentage of orders for Network Infrastructure rejected by the Dominant Provider;
- the mean response time to fault reports relating to Partial Private Circuits and Network Infrastructure sent to the Dominant Provider by Third Party; and
- new installation fault report rate relating to Partial Private Circuits.

The aggregated reports shall include the Dominant Provider's performance in respect of provision to its retail arm.

2. The Dominant Provider shall ensure that its monitoring systems are sufficient to enable it, at all times, to be capable, following a written request by Ofcom, to publish the following information for each Third Party to whom it provides Partial Private Circuits on an individual and anonymous basis; and on an aggregated basis with respect to all such Third Parties on an anonymous basis:

- list of reasons for rejections of orders;
- list of reasons for faults; and



- list of reasons for any Committed Delivery Dates beginning 10 working days later than the relevant Requisite Period.

The aggregated reports shall include the Dominant Provider's performance in respect of provision to its retail arm.

3. Nothing in this Direction shall require the Dominant Provider to publish confidential information relating to its business or that of a Third Party.

4. The information set out in paragraph 1 above shall be first published within three months of this Direction taking effect and every three months thereafter.

5. Publication referred to in paragraph 1 above shall be effected by:

- (a) for information on an aggregated basis, by placing a copy of the information on any relevant website operated or controlled by the Dominant Provider;
- (b) for information on an individual basis, by electronic mailing the information to the relevant Third Party; and
- (c) sending a copy of the information to Ofcom.

6. This Direction shall take effect on the day it is published.

**Gareth Davies**  
**Competition Policy Director, Ofcom**

**A person duly authorised in accordance with paragraph 18 of the Schedule to the Office of Communications Act 2002**

**[ Date ]**

**[Draft] Direction under section 49 of the Communications Act 2003 and SMP Services Condition GG1 imposed on British Telecommunications plc ('BT') as a result of the market power determinations made by the Office of Communications ('Ofcom') that BT has significant market power in the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including forty five megabits per second for the UK (excluding the Central and East London Area and the Hull Area)**

**WHEREAS:**

- (A) as a result of a market analysis carried out by Ofcom, it proposed on 17 January 2008, in accordance with sections 48 (2) and 80 of the Act, that the Dominant Provider has significant market power in the markets for the provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including forty five megabits per second for the UK (excluding the CELA and the Hull Area);
- (B) Ofcom further proposed SMP Service Condition GG1 which imposes various obligations on British Telecom plc ('BT'), *inter alia*, the obligation to comply with any Direction Ofcom may from time to time make under this Condition;
- (C) this [Draft] Direction concerns matters to which Condition GG1 relates;
- (D) for the reasons set out in the explanatory statement accompanying this [Draft] Direction, Ofcom is satisfied that, in accordance with section 49(2) of the Act, this [Draft] Direction is:
  - (i) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;
  - (ii) not such as to discriminate unduly against particular persons or against a particular description of persons;
  - (iii) proportionate to what it is intended to achieve; and
  - (iv) in relation to what it is intended to achieve, transparent;
- (E) for the reasons set out in the explanatory statement accompanying this [Draft] Direction, Ofcom is satisfied that he has acted in accordance with the relevant duties set out in sections 3 and 4 of the Act;
- (F) Ofcom has published a notification of the proposed [Draft] Direction in accordance with section 49 of the Act;

**NOW, therefore, pursuant to Condition GG1 Ofcom makes the following Direction:**

For the purpose of interpreting this Direction the following definitions shall apply:

**"Act"** means the Communications Act 2003;

**"Central and East London Area"** ('CELA') means the area in London consisting of the postal sectors set out in Schedule 1 to the Notification contained in Annex 15 to Ofcom's explanatory statement published on 17 January 2008.

“**The Directions**” means the Directions made under Conditions GG1, GG3 and GG7 and published on the same day as this Direction;

“**Dominant Provider**” means British Telecommunications plc, whose registered company number is 1800000 and any British Telecommunications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by Section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

“**Hull Area**” means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and KCOM Group plc;

“**Point of Connection**” means a point at which the Dominant Provider’s Electronic Communications Network and another person’s Electronic Communications Network are connected; and

“**Third Party**” means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network.

For the purpose of this Direction the following terms shall have the meaning as set out in the Dominant Provider’s Standard PPC Handover Agreement, as at the date of publication of this Direction, but with the necessary changes in order to ensure compliance with the Directions.

Advance Capacity Order

Advance Order Commitment

BT Retail Private Circuit

BT Serving Node

Capacity Order

Capacity Profile

Customer Sited Handover (“CSH”)

Forecast Profile

In building Handover (“IBH”)

In-Span Handover (“ISH”)

Re-Designation

Qualifying BT Retail Private Circuit

The following definitions shall also apply for the purpose of this Direction:

<b>Term</b>	<b>Definition</b>
Acceptance of Terms	

Date on which a Third Party confirms acceptance of delivery conditions and is committed to the order.

Civil Works	Works that necessitate the digging up of a street for the installation of ducts.
Committed Delivery Date	The date confirmed by the Dominant Provider as the delivery date.
Firm Offer Confirmation (“FOC”)	Confirmation by the Dominant Provider in writing (by fax or e-mail) to a Third Party of the delivery conditions including price and Committed Delivery Date, after acknowledging receipt of an order for a Partial Private Circuit or Network Infrastructure from a Third Party.
FOC Acceptance Interval	The number of working days from the FOC Date until the Acceptance of Terms.
FOC Date	The date on which the Dominant Provider makes a Firm Offer Confirmation.
FOC Receipt Interval	The number of working days from the Order Request Date until the FOC Date.
Installation Date	Date of installation of a Partial Private Circuit or Network Infrastructure.
Network Infrastructure	The categories of products listed in the table contained in paragraph 49 of this Direction.
Order Request Date	Date on which a Third Party dispatches a valid Partial Private Circuit order, or Network Infrastructure order, to the Dominant Provider.
Partial Private Circuit (“PPC”)	A circuit provided pursuant to the PPC Contract and in accordance with the Directions.
PPC Contract	The Dominant Provider's Standard PPC Handover Agreement as at the date of publication of this Direction.
Provisioning Interval	The number of working days from the Order Request Date until the Installation Date.
Requisite Period	The period commencing on the Order Request Date and ending on the applicable working day as set out in the tables in paragraphs 39 and 49 of this Direction.

Reduced Requisite Period

The period commencing on the Order Request Date and ending on the applicable working day as set out in the tables in paragraphs 42 and 52 of this Direction.

Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them.

The Interpretation Act 1978 shall apply as if this Direction was an Act of Parliament.

Headings and titles shall be disregarded.

The Dominant Provider shall provide Partial Private Circuits and shall do so in accordance with this Direction.

### **Migration**

1. The 12 month contractual minimum term placed upon a Third Party, for the provision of a Partial Private Circuit which has been migrated pursuant to the PPC Contract, shall be measured from the date that the original BT Retail Private Circuit was brought into service.
2. The Dominant Provider shall not impose any deadline before which a Third Party must inform the Dominant Provider that it requires a BT Retail Private Circuit to be migrated to an equivalent Partial Private Circuit status under the PPC Contract.
3. The Dominant Provider shall allow a BT Retail Private Circuit, which fell within paragraph 1.3 of the Phase 1 PPC Direction published on 14 June 2002, to be considered under the PPC Contract as a Qualifying BT Retail Private Circuit.
4. A circuit deemed to be a Qualifying BT Retail Private Circuit under paragraphs 20 or 21 of the Phase 2 PPC Direction published on 23 December 2002 shall continue to be a Qualifying BT Retail Private Circuit.
5. Where a Third Party was not previously eligible to migrate a BT Retail Private Circuit to a Qualifying BT Retail Private Circuit, but subsequently becomes eligible to do so, the Dominant Provider shall, for 60 working days following the date on which the Third Party's circuits become eligible for migration, allow migration without the Third Party incurring any penalty (including any default or early termination charge) under its agreement with the Dominant Provider for the provision of BT Retail Private Circuits.
6. Where, at the date of publication of this Direction, the Dominant Provider offers a BT Retail Private Circuit product and does not offer an equivalent Partial Private Circuit product, but subsequently offers to provide an equivalent Partial Private Circuit product, it shall allow a Third Party to migrate to the equivalent Partial Private Circuit product without it incurring any penalty (including any default or early termination charge) under its agreement with the Dominant Provider for the provision of BT Retail Private Circuits, for a period of 60 working days following the date on which the equivalent Partial Private Circuit product is first offered by the Dominant Provider.
7. Where the Dominant Provider has taken, or will take, longer than five working days from receiving a request from a Third Party to migrate a Qualifying BT Retail Private Circuit to a Partial Private Circuit, it shall give to the Third Party a refund as set out in paragraphs 8 and 9 of this Direction.

8. Where paragraph 7 of this Direction applies, the Dominant Provider shall refund to the Third Party a sum of money equal to the difference between:

- the charge levied by the Dominant Provider for the BT Retail Private Circuit to which the request for migration relates; and
- the charge levied by the Dominant Provider for the Partial Private Circuit to which the request for migration relates.

9. The refund set out in paragraph 8 of this Direction shall cover the period from the date the Dominant Provider receives the request to migrate until the date the Dominant Provider completes the migration.

10. The Dominant Provider shall, upon a Third Party's written request, provide to the Third Party a map of its network within the United Kingdom which clearly illustrates and labels the geographic location of each Dominant Provider tier 1, tier 1.5, tier 2, and tier 3 node.

### Forecasts

11. The Dominant Provider shall only require a Third Party to provide a profile of future Partial Private Circuit capacity ordering intentions over a 12 month period, on a national aggregate basis for groupings of bandwidths no narrower than the following:

- above 8 Mbit/s through to 45 Mbit/s; and
- 155 Mbit/s.

12. The Dominant Provider shall allow a Third Party to set its Advance Capacity Order and Advance Order Commitment without any penalty by up to, 10% (by volume) below, or 20% (by volume) above, the amount stated in the Third Party's previous Capacity Profile or Forecast Profile for the period covered by the Advance Capacity Order or Advance Order Commitment.

13. The Dominant Provider shall allow a Third Party to revise periods covered by its previously stated Capacity Profile and Forecast Profile without any penalty by up to, 30% (by volume) below, or 30% (by volume) above, the amount stated in the Third Party's previous Capacity Profile or Forecast Profile, provided that paragraph 12 of this Direction does not apply.

14. In calculating any increase to an Advance Capacity Order, Advance Order Commitment, Capacity Profile or Forecast Profile pursuant to paragraphs 12 and 13 of this Direction, the outcome of the revision shall, if not an integer, be rounded up to the nearest integer.

15. In calculating any decrease to an Advance Capacity Order, Advance Order Commitment, Capacity Profile or Forecast Profile pursuant to paragraphs 12 and 13 of this Direction, the outcome of the revision shall, if not an integer, be rounded down to the nearest integer.

16. Where a Third Party places a Capacity Order at a Point of Connection for the period corresponding to that of the Advance Capacity Order, which total less than its Advance Capacity Order for the Point of Connection, the Dominant Provider may levy a charge no more than a sum equal to:

$$[(80\% \text{ of } B) - C] \times \text{£}2,490$$

Where B is the total capacity provision by number of VC4-equivalent units specified in the relevant Advance Capacity Order in respect of each Point of Connection; and

Where C is the number of VC4-equivalents ordered during the period to which the relevant Advance Capacity Order relates in respect of each Point of Connection, but does not include cancellations of Capacity Orders made during or after the relevant Advanced Capacity Order period, but does include any Capacity Order cancelled as a result of the inability of the Dominant Provider to secure consents for CSH links.

17. [paragraph not used].

18. Where a Third Party places orders for Partial Private Circuits from above 8 Mbit/s through to 45 Mbit/s for the period corresponding to that of the Advanced Order Commitment, which total less than its Advance Order Commitment for Partial Private Circuits from above 8 Mbit/s through to 45 Mbit/s, the Dominant Provider may levy a charge no more than a sum equal to:

$$[(80\% \text{ of } B) - C] \times \text{£}143$$

Where B is the total Advance Order Commitment for Private Partial Circuits from above 8 Mbit/s through to 45 Mbit/s; and

Where C is the number of Partial Private Circuits from above 8 Mbit/s through to 45 Mbit/s ordered during the period to which the Advance Order Commitment relates, but does not include cancellations of orders for Partial Private Circuits made during or after the relevant Advanced Order Commitment period, but does include any order for a Partial Private Circuit cancelled as a result of the inability of Dominant Provider to secure consents for Partial Private Circuits.

19. Where a Third Party places orders for Partial Private Circuits of 155 Mbit/s for the period corresponding to that of the Advanced Order Commitment, which total less than its Advance Order Commitment for Partial Private Circuits for 155 Mbit/s, the Dominant Provider may levy a charge no more than a sum equal to:

$$[(80\% \text{ of } B) - C] \times \text{£}3,788$$

Where B is the total Advance Order Commitment for Private Partial Circuits of 155 Mbit/s; and

Where C is the number of Partial Private Circuits of 155 Mbit/s ordered during the period to which the Advance Order Commitment relates, but does not include cancellations of orders for Partial Private Circuits made during or after the relevant Advanced Order Commitment period, but does include any order for a Partial Private Circuit cancelled as a result of the inability of the Dominant Provider to secure consents for Partial Private Circuits.

20. In calculating (80% of B) in paragraphs 16 to 19 inclusive of this Direction the outcome shall, if not an integer, be rounded down to the nearest integer.

## **Service level agreements**

### ***General***

21. The Dominant Provider shall set a Committed Delivery Date for each Partial Private Circuit or Network Infrastructure ordered from it by a Third Party.

22. For each Partial Private Circuit or Network Infrastructure ordered from the Dominant Provider by a Third Party, the Dominant Provider shall provide to a Third Party Firm Offer Confirmation in the manner set out in the definition section of this Direction.

23. The time scales and levels of fixed individual compensation payments to be payable under the service level agreement shall be those set out in the Directions, unless otherwise agreed between the Dominant Provider and a Third Party, or except to the extent that Ofcom otherwise consents.

24. Unless otherwise agreed between the Dominant Provider and a Third Party, any fixed individual compensation payment, or reimbursement pursuant to paragraph 28 of this Direction, payable by the Dominant Provider to a Third Party pursuant to the Directions shall be offset by the Dominant Provider against the money owed to it by the Third Party, on a quarterly basis. The Dominant Provider shall keep complete and accurate records of the amounts it has offset in accordance with this paragraph. Such records shall be made available by the Dominant Provider following a request by a Third Party.

25. The Dominant Provider shall not be liable to pay fixed individual compensation payments pursuant to the Directions for periods of delay which arise due to circumstances beyond its reasonable control. The Dominant Provider shall notify a Third Party as soon as reasonably practicable when such circumstances arise. All contractors or sub-contractors of whatever level, and their respective employees, servants and agents, shall for the purpose of this paragraph be treated as employees of the Dominant Provider. Major construction works shall not be considered circumstances beyond the Dominant Provider's reasonable control.

26. The Dominant Provider shall ensure that any time limits set out in this Direction shall not apply to a Third Party to the extent that periods of delay arise due to circumstances beyond its reasonable control. The Third Party shall notify the Dominant Provider as soon as reasonably practicable when such circumstances arise. All contractors or sub-contractors of whatever level, and their respective employees, servants and agents, shall for the purpose of this paragraph be treated as employees of the relevant Third Party.

27. The Dominant Provider shall, at the reasonable request of a Third Party, postpone the Committed Delivery Date of a Partial Private Circuit or Network Infrastructure if such postponement is technically and organisationally reasonable. In agreeing to such a postponement the Dominant Provider shall only charge for reasonable additional expenses it has directly incurred as a result of the postponement.

28. The Dominant Provider shall only postpone the Committed Delivery Date of a Partial Private Circuit or Network Infrastructure with the written agreement of the Third Party. The Dominant Provider shall inform the Third Party as soon as reasonably possible of any proposed postponement of the Committed Delivery Date. Where such a postponement takes place the Dominant Provider shall reimburse the Third Party for any reasonable additional cost incurred by the Third Party as a direct result of the postponement.

29. The FOC Receipt Interval shall be a maximum of eight working days for Partial Private Circuits of above 8 Mbit/s and up to and including 155 Mbit/s and Network Infrastructure, regardless of how many Partial Private Circuits are, or the amount of Network Infrastructure is, ordered at a particular site.

30. The Dominant Provider shall ensure that the FOC Acceptance Interval is a maximum of one two working days for Partial Private Circuits of above 8 Mbit/s and up to and including 155 Mbit/s and Network Infrastructure. Where a Third Party has not informed the Dominant Provider of its Acceptance of Terms or rejection of the order within five working days of the FOC Date, the Dominant Provider may cancel the Third Party's order.



31. The Dominant Provider shall keep complete and accurate records of the ordering, provision and repair of Partial Private Circuits and Network Infrastructure it provides to a Third Party.

32. Where any Partial Private Circuit or Network Infrastructure which is ordered by a Third Party is in excess of 110% (by volume), rounded up to the nearest integer where necessary, of its Advance Order Commitment or Advance Capacity Order, the applicable Requisite Period set out in the tables in paragraphs 39 and 49 of this Direction shall be extended by 50% and rounded up to the nearest working day, where necessary, for the purposes of calculating fixed individual compensation payments.

#### *Unliquidated damages*

33. Nothing in the PPC Contract, as amended by the Directions, shall prevent a Third Party from bringing a claim against the Dominant Provider for unliquidated damages over and above the fixed individual compensation payments set out in the Directions.

#### **Partial Private Circuits**

##### *Quick quote and high bandwidth quote on line*

34. The Dominant Provider shall provide to a Third Party, upon written request, the necessary wholesale network and pricing information to enable the Third Party to obtain the same information for Partial Private Circuits that is available to the Dominant Provider's retail arm, for its "Quick Quote" and "High Bandwidth Quote On Line" quote facilities.

##### *Concurrency of Partial Private Circuit and ISH link and CSH link delivery times*

35. 35. Where a Third Party has ordered a Partial Private Circuit, and the operation of the circuit requires the provision of an ISH link, CSH link or IBH link, the Dominant Provider shall ensure that the delivery dates of the Partial Private Circuit and the CSH link, ISH link or IBH link are the same.

36. [Paragraph not used].

37. [Paragraph not used].

##### *Time scales for fixed individual compensation*

38. Where the Committed Delivery Date for Partial Private Circuits is set by the Dominant Provider later than the relevant Requisite Period (as set out in the table in paragraph 39 of this Direction) without the agreement of a Third Party, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 5% of the monthly rental for the Private Partial Circuit delayed, per working day or part of a working day in respect of the period commencing immediately on the expiry of the relevant Requisite Period and expiring on the Installation Date.

39. Where the Committed Delivery Date for Partial Private Circuits is set by the Dominant Provider either, later than the relevant Requisite Period (as set out in the table below) but with the agreement of a Third Party, or within the Requisite Period, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 5% of the monthly rental for the Private Partial Circuit delayed, per working day or part of a working

day in respect of the period commencing immediately on the working day following the Committed Delivery Date and expiring on the Installation Date.

**Bandwidth of Partial Private Circuit**

**Requisite Period**

34 Mbit/s to 155 Mbit/s

57 working days

*Third Party's ability to cancel order*

40. Where the Provisioning Interval exceeds the relevant Requisite Period set out in the table in paragraph 39 of this Direction, a Third Party shall be allowed to cancel its order for a Partial Private Circuit after the Cancellation Threshold (as set out in the table below) has expired. The Cancellation Threshold shall commence upon the expiry of the relevant Requisite Period set out in the table in paragraph 39 of this Direction. The Requisite Periods in the table in paragraph 39 shall apply, for the purposes of this paragraph, regardless of whether there is a delay in delivery of a Partial Private Circuit which is due to circumstances beyond the Dominant Provider's reasonable control but not including delay by a Third Party.

<b>Requisite Period set out in the table in paragraph 39 of this Direction</b>	<b>Cancellation Threshold</b>
57 working days	25 working days

41. Where a Third Party cancels a Partial Private Circuit pursuant to paragraph 40 of this Direction, the Dominant Provider shall not charge the Third Party for the circuit and shall not charge for cancelling the circuit. The Dominant Provider shall also be liable to pay the Third Party any fixed individual compensation payments accumulated pursuant to the PPC Contract as amended by the Directions.

*Reduced Requisite Periods for Partial Private Circuits*

42. The Dominant Provider shall ensure that for at least 70% (by volume) of Partial Private Circuits of a particular bandwidth delivered by the Dominant Party to a Third Party within a three month period (such period not to be calculated on a rolling basis) the Committed Delivery Date is set within the relevant Reduced Requisite Period (as set out in the table below).

**Bandwidth of Partial Private Circuit**

**Reduced Requisite Period**

34 Mbit/s to 155 Mbit/s

45 working days

43. In calculating the 70% (by volume) of Partial Private Circuits to which paragraph 42 of this Direction applies the following shall not be included:

- Partial Private Circuits which exceed 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Order Commitment.

44. The Reduced Requisite Periods set out in the table in paragraph 42 of this Direction apply only if, in the previous three month reporting period (such period not to be calculated on a rolling basis), a Third Party has ordered from the Dominant Provider at least ten Partial Private Circuits of the same bandwidth where such Partial Private Circuits are 2 Mbit/s or less.

45. For the purposes of this Direction, in determining whether 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Order Commitment has been exceeded, the calculation shall be at a national level for each individual Partial Private Circuit bandwidth category and applied in the order in which the Partial Private Circuits were ordered by the Third Party.

*Multiple orders*

46. Where the Dominant Provider receives an order for more than 10 Partial Private Circuits at one site from a Third Party, the relevant Requisite Period applicable to determine whether the Dominant Provider shall pay fixed individual compensation as set out in paragraphs 38 and 39 of this Direction, shall be the relevant Requisite Period set out in the table in paragraph 39 of this Direction increased by a maximum of 50%. The Dominant Provider shall inform the Third Party of the revised time scales as soon as reasonably practicable.

*Availability of service*

47. When total loss of service (i.e. total loss of service for one minute or longer) occurs three or more times, within a 12 month period, to a Partial Private Circuit, the Third Party shall not be liable to the Dominant Provider for the monthly rental in any subsequent month where total loss of failure occurs to the Partial Private Circuit, until such time as 12 months have passed and the Partial Private Circuit has not suffered total loss of service. Occurrences of total loss of service which result in the Dominant Provider being liable to pay fixed individual compensation pursuant to paragraphs 58, 59 and 61 of this Direction, shall not be considered as an occurrence of a total loss of service for the purposes of this paragraph.

**Network Infrastructure**

*Time scales for fixed individual compensation*

48. Where the Committed Delivery Date for Network Infrastructure is set by the Dominant Provider later than the relevant Requisite Period (as set out in the table in paragraph 49 of this Direction) without the agreement of a Third Party, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 0.3% of the connection fee for the Network Infrastructure, per working day, or part of a working day, in respect of the period commencing immediately on the expiry of the relevant Requisite Period and expiring on the Installation Date,

49. Where the Committed Delivery Date for Network Infrastructure is set by the Dominant Provider either, later than the relevant Requisite Period (as set out in the table below) but with the agreement of a Third Party, or within the Requisite Period, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 0.3% of the connection fee for the Network Infrastructure, in respect of the period commencing immediately on the working day following the Committed Delivery Date and expiring on the Installation Date.

<b>Network Infrastructure</b>	<b>Requisite Period (where the Dominant Provider needs to carry out Civil Works)</b>	<b>Requisite Period (where the Dominant Provider does not need to carry out Civil Works)</b>
ISH links	110 working days	85 working days

CSH links	110 working days	85 working days
IBH links	110 working days	85 working days
ISH links – provision of new multiplexor on an existing Point of Connection	Not applicable	60 working days
ISH links - provision of extra STM-1 interface on existing STM-1 ISH SMA4 multiplexor	Not applicable	60 working days
CSH links - provision of new multiplexor on existing Point of Connection	Not applicable	60 working days
CSH links requiring only provision of new tributary card on existing multiplexor	Not applicable	25 working days

*Third Party's ability to cancel order*

50. Where the Provisioning Interval exceeds the relevant Requisite Period set out in the table in paragraph 49 of this Direction, a Third Party shall be allowed to cancel its order for Network Infrastructure after the Cancellation Threshold (as set out in the table below) has expired. The Cancellation Threshold shall commence upon the expiry of the relevant Requisite Period set out in the table in paragraph 49 of this Direction. The Requisite periods in the table in paragraph 49 shall apply, for the purposes of this paragraph, regardless of whether there is a delay in delivery of Network Infrastructure which is due to circumstances beyond the Dominant Provider's reasonable control but not including delay by a Third Party.

<b>Requisite Period set out in the table in paragraph 49 of this Direction</b>	<b>Cancellation Threshold</b>
21 to 40 working days	20 working days
41 to 60 working days	25 working days
61 to 90 working days	30 working days
Over 90 working days	40 working days

51. Where a Third Party cancels Network Infrastructure pursuant to paragraph 50 of this Direction, the Dominant Provider shall not charge the Third Party for the Network Infrastructure and shall not charge for cancelling the Network Infrastructure. The Dominant Provider shall also be liable to pay the Third Party any fixed compensation payments accumulated pursuant to the PPC Contract as amended by the Directions.

*Reduced Requisite periods for Network Infrastructure*

52. The Dominant Provider shall ensure that for at least 70% (by volume) of the total VC4-equivalents of Network Infrastructure delivered by it to a Third Party during a three month

period (such period not to be calculated on a rolling basis) the Committed Delivery Date is set within the relevant Reduced Requisite Period (as set out in the table below).

<b>Network Infrastructure</b>	<b>Reduced Requisite Period (where the Dominant Provider needs to carry out Civil Works)</b>	<b>Reduced Requisite Period where the Dominant Provider does not need to carry out Civil Works)</b>
ISH links	75 working days	60 working days
CSH links	75 working days	60 working days
IBH links	75 working days	60 working days
ISH links - provision of new multiplexor on an existing Point of Connection	Not applicable	40 working days
ISH links - provision of extra STM-1 interface on existing STM-1 ISH SMA4 multiplexor	Not applicable	40 working days
CSH links - provision of new multiplexor on existing Point of Connection	Not applicable	40 working days
CSH links requiring only provision of new tributary card on existing multiplexor	Not applicable	20 working days

53. In calculating the 70% (by volume) of the total VC4-equivalents of Network Infrastructure to which paragraph 52 of this Direction applies the following shall not be included:

- Network Infrastructure which exceeds 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Capacity Order.

54. The Reduced Requisite Periods set out in the table in paragraph 52 of this Direction only apply if, in the previous three month reporting period (such period not to be calculated on a rolling basis) a Third Party has ordered from the Dominant Provider at least 2 VC4-equivalents of Network Infrastructure. For the purposes of this paragraph the first reporting period of three months shall be the first such reporting period falling after 30 working days following the date of publication of this Direction.

55. For the purposes of this Direction, in determining whether 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Capacity Order has been exceeded, the calculation shall be made using VC4-equivalents at each Point of Connection applied in the order in which the Network Infrastructure was ordered by the Third Party.

### **Repair of Partial Private Circuits and Network Infrastructure**

56. Where the Dominant Provider offers to a Third Party Regular Care and Enhanced Care for Partial Private Circuits and Network Infrastructure it shall do so at a cost orientated price and as set out in the table below:

	<b>Operational hours</b>	<b>Repair/response time</b>	<b>Extras</b>
<b>Regular Care</b>	Normal working hours	Response within one working day of receipt of a fault report by a Third Party. Repair within two working days of receipt of a fault report by a Third Party.	If a fault is not remedied within two working days of receipt of a fault report by a Third Party, the Dominant Provider shall call the Third Party to report progress being made to remedy the fault.
<b>Enhanced Care</b>	24 hours per day, 7 days per week (including public and bank holidays).	Response within four hours of receipt of a fault report from a Third Party. Repair within five hours of receipt of a fault report by a Third Party.	If a fault is not remedied within five hours of receipt of a fault report by a Third Party, the Dominant Provider shall contact the Third Party to report progress being made to remedy the fault.

57. Receipt by the Dominant Provider from a Third Party of a report of a fault concerning a Partial Private Circuit or Network Infrastructure, shall be acknowledged by the Dominant Provider to the Third Party within one hour.

58. Where the Dominant Provider fails to repair a Partial Private Circuit within the time limits set out in the table in paragraph 56 of this Direction it shall pay to the Third Party a fixed individual compensation payment as set out in paragraphs 59 to 63 inclusive of this Direction in respect of the period commencing on the expiry of the applicable repair time set out in the table in paragraph 56 and expiring at the time the Partial Private Circuit or Network Infrastructure is repaired.

59. Where the Third Party has ordered the Dominant Provider's Regular Care for Partial Private Circuits, the Dominant Provider shall pay the Third Party an amount equal to 100% of the monthly rental payable for the type of Partial Private Circuit being repaired per working day, or part of a working day, of delay is repair.

60. Where the Third Party has ordered the Dominant Provider's Regular Care for Network Infrastructure, the Dominant Provider shall pay the Third Party an amount equal to 1% of the connection fee for the type of Network Infrastructure being repaired per working day, or part of a working day, of delay in repair.

61. Where the Third Party has ordered the Dominant Provider's Enhanced Care for Partial Private Circuits, the Dominant Provider shall pay the Third Party an amount equal to 15% of the monthly rental payable for the type of Partial Private Circuit being repaired per hour, or part of an hour, of delay in repair.

62. Where the Third Party has ordered the Dominant Provider's Enhanced Care for Network Infrastructure, the Dominant Provider shall pay the Third Party an amount equal to 0.15% of

the connection fee for the type of Network Infrastructure being repaired per hour, or part of an hour, of delay in repair.

63. The Dominant Provider shall not be liable to pay fixed individual compensation pursuant to paragraphs 60 and 62 of this Direction where it is also liable for fixed individual compensation pursuant to paragraphs 59 and 61 of this Direction where the Partial Private Circuit is being provided using the Network Infrastructure which is being repaired.

64. The Dominant Provider shall attend, and invite Third Parties to regular meetings to review the level of service provided by it in relation to Partial Private Circuits and related Network Infrastructure.

### **Change of speed or interface**

65. The Dominant Provider shall offer to provide within a reasonable period of a Third Party's written request, the ability to alter the speed or interface of a Partial Private Circuit.

66. The Dominant Provider shall ensure that it provides to a Third Party a Partial Private Circuit variant for the services to which paragraph 65 of this Direction applies, which are equivalent to the services it currently provides on a retail basis for retail leased lines.

### **STM-1, ISH and CSH handover**

67. The Dominant Provider shall offer to provide within a reasonable period of a Third Party's written request for a Synchronous Transfer Mode-1 ("STM-1"), an interface using an ISH link, CSH link or IBH link; and handover pursuant to paragraph 68 of this Direction. Such link or handover shall be provided by way of network connecting apparatus capable of providing no more than the STM-1 capacity ordered by the Third Party.

68. The Dominant Provider shall within a reasonable period of a Third Party's written request, handover in a footway jointing chamber for Partial Private Circuits at a reasonable point nominated by the Third Party. The footway jointing chamber shall be located in the same Dominant Provider local serving exchange area as the Dominant Provider Serving Node to which the Partial Private Circuits being handed over are connected.

### **Equipment re-use**

69. Paragraph 70 of this Direction shall only apply to the re-use of Plesiochronous Digital Hierarchy ("PDH") and Synchronous Digital Hierarchy ("SDH") equipment situated at a third party site ("Equipment").

70. The Dominant Provider may reject a request by a Third Party for re-use of PDH Equipment if such re-use would be incompatible with its network. Any such rejection by the Dominant Provider shall be made within 10 working days of a request by the Third Party and fully justified in writing to the requesting Third Party at the same time as the request is rejected.

### **Other Circuits**

71. Unless Ofcom otherwise agrees, the Dominant Provider shall, offer to provide Partial Private Circuit with no single point of failure, within a reasonable period of a Third Party's request.

72. The Dominant Provider shall offer to provide, within a reasonable period of a Third Party's written request, a Partial Private Circuit which is dual pathed and diversely routed from a third party customer's premises to a Third Party's single Point of Connection.

73. The Dominant Provider shall implement this Direction within 10 working days of its publication.

74. This Direction shall take effect on the day it is published.

**Gareth Davies**  
**Competition Policy Director, Ofcom**

**A person duly authorised in accordance with paragraph 18 of the Schedule to the Office of Communications Act 2002**

**[ Date ]**



**[Draft] Direction under Condition GG7 imposed on British Telecommunications plc as a result of the analysis of the market for the provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including forty five megabits per second in which British Telecommunications plc has been found to have significant market power**

**WHEREAS:**

- (A) as a result of a market analysis carried out by Ofcom, it proposed on 17 January 2008, in accordance with sections 48 (2) and 80 of the Act, that the Dominant Provider has significant market power in the markets for the provision of traditional interface symmetric broadband origination with a bandwidth capacity above eight megabits per second and up to and including forty five megabits per second for the UK (excluding the CELA and the Hull Area);
- (B) Ofcom further proposed SMP Service Condition GG7 which imposes various obligations on British Telecom plc ('BT'), *inter alia*, the obligation to comply with any Direction Ofcom may from time to time make under this Condition;
- (C) this [Draft] Direction concerns matters to which Condition GG7 relates;
- (D) for the reasons set out in the explanatory statement accompanying this [Draft] Direction, Ofcom is satisfied that, in accordance with section 49(2) of the Act, this [Draft] Direction is:
- (i) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;
  - (ii) not such as to discriminate unduly against particular persons or against a particular description of persons;
  - (iii) proportionate to what it is intended to achieve; and
  - (iv) in relation to what it is intended to achieve, transparent;
- (E) for the reasons set out in the explanatory statement accompanying this [Draft] Direction, Ofcom is satisfied that he has acted in accordance with the relevant duties set out in sections 3 and 4 of the Act;
- (F) Ofcom has published a notification of the proposed [Draft] Direction in accordance with section 49 of the Act;

**NOW, therefore, pursuant to Condition GG7 Ofcom makes the following Direction:**

For the purpose of interpreting this Direction the definitions set out in the Direction made under Condition GG1 and published on the same day as this Direction shall apply.

Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them.

The Interpretation Act 1978 shall apply as if this Direction was an Act of Parliament.

Headings and titles shall be disregarded.

1. The Dominant Provider shall, on a quarterly basis, publish the following information for each Third Party to whom it provides Partial Private Circuits on an individual and anonymous basis; and on an aggregated basis with respect to all such Third Parties on an anonymous basis:

- its performance with respect to Committed Delivery Dates, Requisite Periods, Reduced Requisite Periods, FOC Receipt Intervals, repair and availability of service;
- a list of incidences of circumstances beyond the reasonable control of the Dominant Provider, split by reason;
- the number and percentage of instances where each Third Party exceeds the applicable FOC Acceptance Interval, set out by bandwidth, for Partial Private Circuits;
- the percentage of each Third Party's previous month's orders having Committed Delivery Dates quoted within 50% of the Requisite Periods set out in the table in paragraph 39 of the Direction made under Condition GG1 and published on the same day as this Direction;
- the number and percentage of instances where each Third Party exceeds the applicable FOC Acceptance Interval for Network Infrastructure;
- the average amount by which each Third Party exceeds the applicable FOC Acceptance Interval, set out by bandwidth, for Partial Private Circuits;
- the average amount by which each Third Party exceeds the applicable FOC Acceptance Interval for Network Infrastructure;
- the number and percentage of orders for Partial Private Circuits rejected by the Dominant Provider;
- the number and percentage of orders for Network Infrastructure rejected by the Dominant Provider;
- the mean response time to fault reports relating to Partial Private Circuits and Network Infrastructure sent to the Dominant Provider by Third Party; and
- new installation fault report rate relating to Partial Private Circuits.

The aggregated reports shall include the Dominant Provider's performance in respect of provision to its retail arm.

2. The Dominant Provider shall ensure that its monitoring systems are sufficient to enable it, at all times, to be capable, following a written request by Ofcom, to publish the following information for each Third Party to whom it provides Partial Private Circuits on an individual and anonymous basis; and on an aggregated basis with respect to all such Third Parties on an anonymous basis:

- list of reasons for rejections of orders;

- list of reasons for faults; and

- list of reasons for any Committed Delivery Dates beginning 10 working days later than the relevant Requisite Period.

The aggregated reports shall include the Dominant Provider's performance in respect of provision to its retail arm.

3. Nothing in this Direction shall require the Dominant Provider to publish confidential information relating to its business or that of a Third Party.

4. The information set out in paragraph 1 above shall be first published within three months of this Direction taking effect and every three months thereafter.

5. Publication referred to in paragraph 1 above shall be effected by:

- (a) for information on an aggregated basis, by placing a copy of the information on any relevant website operated or controlled by the Dominant Provider;
- (b) for information on an individual basis, by electronic mailing the information to the relevant Third Party; and
- (c) sending a copy of the information to Ofcom.

6. This Direction shall take effect on the day it is published.

**Gareth Davies**  
**Competition Policy Director, Ofcom**

**A person duly authorised in accordance with paragraph 18 of the Schedule to the Office of Communications Act 2002**

**[ Date ]**

**[Draft] Direction under section 49 of the Communications Act 2003 and SMP Services Condition H1 imposed on British Telecommunications plc ('BT') as a result of the market power determinations made by the Office of Communications ('Ofcom') that BT has significant market power in the market for the provision of wholesale trunk segments at all bandwidths for the UK**

**WHEREAS:**

- (A) as a result of a market analysis carried out by Ofcom, it proposed on 17 January 2008, in accordance with sections 48 (2) and 80 of the Act, that the Dominant Provider has significant market power in the markets for the provision of wholesale trunk segments at all bandwidths for the UK;
- (B) Ofcom further proposed SMP Service Condition H1 which imposes various obligations on British Telecom plc ('BT'), *inter alia*, the obligation to comply with any Direction Ofcom may from time to time make under this Condition;
- (C) this [Draft] Direction concerns matters to which Condition H1 relates;
- (D) for the reasons set out in the explanatory statement accompanying this [Draft] Direction, Ofcom is satisfied that, in accordance with section 49(2) of the Act, this [Draft] Direction is:
  - (i) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;
  - (ii) not such as to discriminate unduly against particular persons or against a particular description of persons;
  - (iii) proportionate to what it is intended to achieve; and
  - (iv) in relation to what it is intended to achieve, transparent;
- (E) for the reasons set out in the explanatory statement accompanying this [Draft] Direction, Ofcom is satisfied that he has acted in accordance with the relevant duties set out in sections 3 and 4 of the Act;
- (F) Ofcom has published a notification of the proposed [Draft] Direction in accordance with section 49 of the Act;

**NOW, therefore, pursuant to Condition H1 Ofcom makes the following Direction:**

For the purpose of interpreting this Direction the following definitions shall apply:

**"Act"** means the Communications Act 2003;

**"The Directions"** means the Directions made under Conditions H1, H3 and H6 and published on the same day as this Direction;

**"Hull Area"** means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and KCOM Group plc;

**“Dominant Provider”** means British Telecommunications plc, whose registered company number is 1800000 and any British Telecommunications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by Section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

**“Point of Connection”** means a point at which the Dominant Provider’s Electronic Communications Network and another person’s Electronic Communications Network are connected; and

**“Third Party”** means a person providing a public Electronic Communications Service or a person providing a public Electronic Communications Network.

For the purpose of this Direction the following terms shall have the meaning as set out in the Dominant Provider’s Standard PPC Handover Agreement, as at the date of publication of this Direction, but with the necessary changes in order to ensure compliance with the Directions.

Advance Capacity Order

Advance Order Commitment

BT Retail Private Circuit

BT Serving Node

Capacity Order

Capacity Profile

Customer Sited Handover (“CSH”)

Forecast Profile

In building Handover (“IBH”)

In-Span Handover (“ISH”)

Re-Designation

Qualifying BT Retail Private Circuit

The following definitions shall also apply for the purpose of this Direction:

<b>Term</b>	<b>Definition</b>
Acceptance of Terms	Date on which a Third Party confirms acceptance of delivery conditions and is committed to the order.
Civil Works	Works that necessitate the digging up of a street for the installation of ducts.
Committed Delivery Date	The date confirmed by the Dominant Provider as the delivery date.

Firm Offer Confirmation (“FOC”)	Confirmation by the Dominant Provider in writing (by fax or e-mail) to a Third Party of the delivery conditions including price and Committed Delivery Date, after acknowledging receipt of an order for a Partial Private Circuit or Network Infrastructure from a Third Party.
FOC Acceptance Interval	The number of working days from the FOC Date until the Acceptance of Terms.
FOC Date	The date on which the Dominant Provider makes a Firm Offer Confirmation.
FOC Receipt Interval	The number of working days from the Order Request Date until the FOC Date.
Installation Date	Date of installation of a Partial Private Circuit or Network Infrastructure.
Network Infrastructure	The categories of products listed in the table contained in paragraph 49 of this Direction.
Order Request Date	Date on which a Third Party dispatches a valid Partial Private Circuit order, or Network Infrastructure order, to the Dominant Provider.
Partial Private Circuit (“PPC”)	A circuit provided pursuant to the PPC Contract and in accordance with the Directions.
PPC Contract	The Dominant Provider's Standard PPC Handover Agreement as at the date of publication of this Direction.
Provisioning Interval	The number of working days from the Order Request Date until the Installation Date.
Requisite Period	The period commencing on the Order Request Date and ending on the applicable working day as set out in the tables in paragraphs 39 and 49 of this Direction.
Reduced Requisite Period	The period commencing on the Order Request Date and ending on the applicable working day as set out in the tables in paragraphs 42 and 52 of this Direction.
Subsequent Partial Private Circuit	A Partial Private Circuit which can be delivered on dedicated pre-provided Network Infrastructure where spare capacity exists.

Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them.

The Interpretation Act 1978 shall apply as if this Direction was an Act of Parliament.

Headings and titles shall be disregarded.

The Dominant Provider shall provide Partial Private Circuits and shall do so in accordance with this Direction. This Direction shall only apply to the extent that the Dominant Provider provides a Partial Private Circuit which contains an element of a product or service which falls within the market for wholesale trunk segments.

## **Migration**

1. The 12 month contractual minimum term placed upon a Third Party, for the provision of a Partial Private Circuit which has been migrated pursuant to the PPC Contract, shall be measured from the date that the original BT Retail Private Circuit was brought into service.
2. The Dominant Provider shall not impose any deadline before which a Third Party must inform the Dominant Provider that it requires a BT Retail Private Circuit to be migrated to an equivalent Partial Private Circuit status under the PPC Contract.
3. The Dominant Provider shall allow a BT Retail Private Circuit, which fell within paragraph 1.3 of the Phase 1 PPC Direction published on 14 June 2002, to be considered under the PPC Contract as a Qualifying BT Retail Private Circuit.
4. A circuit deemed to be a Qualifying BT Retail Private Circuit under paragraphs 20 or 21 of the Phase 2 PPC Direction published on 23 December 2002 shall continue to be a Qualifying BT Retail Private Circuit.
5. Where a Third Party was not previously eligible to migrate a BT Retail Private Circuit to a Qualifying BT Retail Private Circuit, but subsequently becomes eligible to do so, the Dominant Provider shall, for 60 working days following the date on which the Third Party's circuits become eligible for migration, allow migration without the Third Party incurring any penalty (including any default or early termination charge) under its agreement with the Dominant Provider for the provision of BT Retail Private Circuits.
6. Where, at the date of publication of this Direction, the Dominant Provider offers a BT Retail Private Circuit product and does not offer an equivalent Partial Private Circuit product, but subsequently offers to provide an equivalent Partial Private Circuit product, it shall allow a Third Party to migrate to the equivalent Partial Private Circuit product without it incurring any penalty (including any default or early termination charge) under its agreement with the Dominant Provider for the provision of BT Retail Private Circuits, for a period of 60 working days following the date on which the equivalent Partial Private Circuit product is first offered by the Dominant Provider.
7. Where the Dominant Provider has taken, or will take, longer than five working days from receiving a request from a Third Party to migrate a Qualifying BT Retail Private Circuit to a Partial Private Circuit, it shall give to the Third Party a refund as set out in paragraphs 8 and 9 of this Direction.
8. Where paragraph 7 of this Direction applies, the Dominant Provider shall refund to the Third Party a sum of money equal to the difference between:
  - the charge levied by the Dominant Provider for the BT Retail Private Circuit to which the request for migration relates; and

- the charge levied by the Dominant Provider for the Partial Private Circuit to which the request for migration relates.

9. The refund set out in paragraph 8 of this Direction shall cover the period from the date the Dominant Provider receives the request to migrate until the date the Dominant Provider completes the migration.

10. The Dominant Provider shall, upon a Third Party's written request, provide to the Third Party a map of its network within the United Kingdom which clearly illustrates and labels the geographic location of each Dominant Provider tier 1, tier 1.5, tier 2, and tier 3 node.

## Forecasts

11. The Dominant Provider shall only require a Third Party to provide a profile of future Partial Private Circuit capacity ordering intentions over a 12 month period, on a national aggregate basis for groupings of bandwidths no narrower than the following:

- less than 1 Mbit/s;
- 1 Mbit/s through to 2 Mbit/s;
- above 8 Mbit/s through to 45 Mbit/s; and
- 155 Mbit/s.

12. The Dominant Provider shall allow a Third Party to set its Advance Capacity Order and Advance Order Commitment without any penalty by up to, 10% (by volume) below, or 20% (by volume) above, the amount stated in the Third Party's previous Capacity Profile or Forecast Profile for the period covered by the Advance Capacity Order or Advance Order Commitment.

13. The Dominant Provider shall allow a Third Party to revise periods covered by its previously stated Capacity Profile and Forecast Profile without any penalty by up to, 30% (by volume) below, or 30% (by volume) above, the amount stated in the Third Party's previous Capacity Profile or Forecast Profile, provided that paragraph 12 of this Direction does not apply.

14. In calculating any increase to an Advance Capacity Order, Advance Order Commitment, Capacity Profile or Forecast Profile pursuant to paragraphs 12 and 13 of this Direction, the outcome of the revision shall, if not an integer, be rounded up to the nearest integer.

15. In calculating any decrease to an Advance Capacity Order, Advance Order Commitment, Capacity Profile or Forecast Profile pursuant to paragraphs 12 and 13 of this Direction, the outcome of the revision shall, if not an integer, be rounded down to the nearest integer.

16. Where a Third Party places a Capacity Order at a Point of Connection for the period corresponding to that of the Advance Capacity Order, which total less than its Advance Capacity Order for the Point of Connection, the Dominant Provider may levy a charge no more than a sum equal to:

$$[(80\% \text{ of } B) - C] \times \text{£}2,490$$

Where B is the total capacity provision by number of VC4-equivalent units specified in the relevant Advance Capacity Order in respect of each Point of Connection; and



Where C is the number of VC4-equivalents ordered during the period to which the relevant Advance Capacity Order relates in respect of each Point of Connection, but does not include cancellations of Capacity Orders made during or after the relevant Advanced Capacity Order period, but does include any Capacity Order cancelled as a result of the inability of the Dominant Provider to secure consents for CSH links.

17. Where a Third Party places orders for Partial Private Circuits below 1 Mbit for the period corresponding to that of the Advanced Order Commitment, which total less than its Advance Order Commitment for the Partial Private Circuits below 1 Mbit, the Dominant Provider may levy a charge no more than a sum equal to:

$$[(80\% \text{ of } B) - C] \times \text{£}52$$

Where B is the total Advance Order Commitment for Private Partial Circuits below 1 Mbit; and

Where C is the number of Partial Private Circuits below 1 Mbit ordered during the period to which the Advance Order Commitment relates, but does not include cancellations of orders for Partial Private Circuits made during or after the relevant Advanced Order Commitment period, but does include any order for a Partial Private Circuit cancelled as a result of the inability of the Dominant Provider to secure consents for Partial Private Circuits.

18. Where a Third Party places orders for Partial Private Circuits from 1 Mbit through to 2 Mbit/s for the period corresponding to that of the Advanced Order Commitment, which total less than its Advance Order Commitment for Partial Private Circuits from 1 Mbit through to 2 Mbit/s, the Dominant Provider may levy a charge no more than a sum equal to:

$$[(80\% \text{ of } B) - C] \times \text{£}143$$

Where B is the total Advance Order Commitment for Private Partial Circuits from 1 Mbit through to 2 Mbit/s; and

Where C is the number of Partial Private Circuits from 1 Mbit through to 2 Mbit/s ordered during the period to which the Advance Order Commitment relates, but does not include cancellations of orders for Partial Private Circuits made during or after the relevant Advanced Order Commitment period, but does include any order for a Partial Private Circuit cancelled as a result of the inability of Dominant Provider to secure consents for Partial Private Circuits.

19. Where a Third Party places orders for Partial Private Circuits from above 8 Mbit/s through to 45 Mbit/s for the period corresponding to that of the Advanced Order Commitment, which total less than its Advance Order Commitment for Partial Private Circuits from above 8 Mbit/s through to 45 Mbit/s, the Dominant Provider may levy a charge no more than a sum equal to:

$$[(80\% \text{ of } B) - C] \times \text{£}143$$

Where B is the total Advance Order Commitment for Private Partial Circuits from above 8 Mbit/s through to 45 Mbit/s; and

Where C is the number of Partial Private Circuits from above 8 Mbit/s through to 45 Mbit/s ordered during the period to which the Advance Order Commitment relates, but does not include cancellations of orders for Partial Private Circuits made during or after the relevant

Advanced Order Commitment period, but does include any order for a Partial Private Circuit cancelled as a result of the inability of Dominant Provider to secure consents for Partial Private Circuits.

19A. Where a Third Party places orders for Partial Private Circuits of 155 Mbit/s for the period corresponding to that of the Advanced Order Commitment, which total less than its Advance Order Commitment for Partial Private Circuits for 155 Mbit/s, the Dominant Provider may levy a charge no more than a sum equal to:

$$[(80\% \text{ of } B) - C] \times \text{£}3,788$$

Where B is the total Advance Order Commitment for Private Partial Circuits of 155 Mbit/s; and

Where C is the number of Partial Private Circuits of 155 Mbit/s ordered during the period to which the Advance Order Commitment relates, but does not include cancellations of orders for Partial Private Circuits made during or after the relevant Advanced Order Commitment period, but does include any order for a Partial Private Circuit cancelled as a result of the inability of the Dominant Provider to secure consents for Partial Private Circuits.

20. In calculating (80% of B) in paragraphs 16 to 19A inclusive of this Direction the outcome shall, if not an integer, be rounded down to the nearest integer.

## **Service level agreements**

### ***General***

21. The Dominant Provider shall set a Committed Delivery Date for each Partial Private Circuit or Network Infrastructure ordered from it by a Third Party.

22. For each Partial Private Circuit or Network Infrastructure ordered from the Dominant Provider by a Third Party, the Dominant Provider shall provide to a Third Party Firm Offer Confirmation in the manner set out in the definition section of this Direction.

23. The time scales and levels of fixed individual compensation payments to be payable under the service level agreement shall be those set out in the Directions, unless otherwise agreed between the Dominant Provider and a Third Party, or except to the extent that Ofcom otherwise consents.

24. Unless otherwise agreed between the Dominant Provider and a Third Party, any fixed individual compensation payment, or reimbursement pursuant to paragraph 28 of this Direction, payable by the Dominant Provider to a Third Party pursuant to the Directions shall be offset by the Dominant Provider against the money owed to it by the Third Party, on a quarterly basis. The Dominant Provider shall keep complete and accurate records of the amounts it has offset in accordance with this paragraph. Such records shall be made available by the Dominant Provider following a request by a Third Party.

25. The Dominant Provider shall not be liable to pay fixed individual compensation payments pursuant to the Directions for periods of delay which arise due to circumstances beyond its reasonable control. The Dominant Provider shall notify a Third Party as soon as reasonably practicable when such circumstances arise. All contractors or sub-contractors of whatever level, and their respective employees, servants and agents, shall for the purpose of this paragraph be treated as employees of the Dominant Provider. Major construction works shall not be considered circumstances beyond the Dominant Provider's reasonable control.

26. The Dominant Provider shall ensure that any time limits set out in this Direction shall not apply to a Third Party to the extent that periods of delay arise due to circumstances beyond its reasonable control. The Third Party shall notify the Dominant Provider as soon as reasonably practicable when such circumstances arise. All contractors or sub-contractors of whatever level, and their respective employees, servants and agents, shall for the purpose of this paragraph be treated as employees of the relevant Third Party.

27. The Dominant Provider shall, at the reasonable request of a Third Party, postpone the Committed Delivery Date of a Partial Private Circuit or Network Infrastructure if such postponement is technically and organisationally reasonable. In agreeing to such a postponement the Dominant Provider shall only charge for reasonable additional expenses it has directly incurred as a result of the postponement.

28. The Dominant Provider shall only postpone the Committed Delivery Date of a Partial Private Circuit or Network Infrastructure with the written agreement of the Third Party. The Dominant Provider shall inform the Third Party as soon as reasonably possible of any proposed postponement of the Committed Delivery Date. Where such a postponement takes place the Dominant Provider shall reimburse the Third Party for any reasonable additional cost incurred by the Third Party as a direct result of the postponement.

29. The FOC Receipt Interval shall be a maximum of:

- five working days for Partial Private Circuits of less than 2 Mbit/s; and
- eight working days for Partial Private Circuits of 2 Mbit/s and above and Network Infrastructure;

regardless of how many Partial Private Circuits are, or the amount of Network Infrastructure is, ordered at a particular site.

30. The Dominant Provider shall ensure that the FOC Acceptance Interval is a maximum of one working day for Partial Private Circuits of 2 Mbit/s or below and two working days for Partial Private Circuits above 2 Mbit/s and Network Infrastructure. Where a Third Party has not informed the Dominant Provider of its Acceptance of Terms or rejection of the order within five working days of the FOC Date, the Dominant Provider may cancel the Third Party's order.

31. The Dominant Provider shall keep complete and accurate records of the ordering, provision and repair of Partial Private Circuits and Network Infrastructure it provides to a Third Party.

32. Where any Partial Private Circuit or Network Infrastructure which is ordered by a Third Party is in excess of 110% (by volume), rounded up to the nearest integer where necessary, of its Advance Order Commitment or Advance Capacity Order, the applicable Requisite Period set out in the tables in paragraphs 39 and 49 of this Direction shall be extended by 50% and rounded up to the nearest working day, where necessary, for the purposes of calculating fixed individual compensation payments.

#### *Unliquidated damages*

33. Nothing in the PPC Contract, as amended by the Directions, shall prevent a Third Party from bringing a claim against the Dominant Provider for unliquidated damages over and above the fixed individual compensation payments set out in the Directions.

#### **Partial Private Circuits**

*Quick quote and high bandwidth quote on line*

34. The Dominant Provider shall provide to a Third Party, upon written request, the necessary wholesale network and pricing information to enable the Third Party to obtain the same information for Partial Private Circuits that is available to the Dominant Provider's retail arm, for its "Quick Quote" and "High Bandwidth Quote On Line" quote facilities.

*Concurrency of Partial Private Circuit and ISH link and CSH link delivery times*

35. Where a Third Party has ordered a Partial Private Circuit, and the operation of the circuit requires the provision of an ISH link, CSH link or IBH link, the Dominant Provider shall ensure that the delivery dates of the Partial Private Circuit and the CSH link, ISH link or IBH link are the same.

*Expedited orders*

36. Upon a Third Party's written request, the Dominant Provider shall make reasonable endeavours to set a Committed Delivery Date for Partial Private Circuits within 50% of the relevant Requisite Period set out in the table in paragraph 39 of this Direction, rounded up to the nearest working day where necessary, for at least 15% (by volume) of a Third Party's previous month's order. The Third Party shall inform the Dominant Provider which particular Partial Private Circuits it shall endeavour to be expedited pursuant to this paragraph. This paragraph shall only apply to the delivery of Partial Private Circuits of 2 Mbit/s or less. This paragraph shall not apply to Partial Private Circuits which exceed 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Order Commitment.

37. Paragraph 46 of this Direction does not apply to orders of Partial Private Circuits made pursuant to paragraph 36 of this Direction.

*Time scales for fixed individual compensation*

38. Where the Committed Delivery Date for Partial Private Circuits is set by the Dominant Provider later than the relevant Requisite Period (as set out in the table in paragraph 39 of this Direction) without the agreement of a Third Party, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 5% of the monthly rental for the Private Partial Circuit delayed, per working day or part of a working day in respect of the period commencing immediately on the expiry of the relevant Requisite Period and expiring on the Installation Date.

39. Where the Committed Delivery Date for Partial Private Circuits is set by the Dominant Provider either, later than the relevant Requisite Period (as set out in the table below) but with the agreement of a Third Party, or within the Requisite Period, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 5% of the monthly rental for the Private Partial Circuit delayed, per working day or part of a working day in respect of the period commencing immediately on the working day following the Committed Delivery Date and expiring on the Installation Date.

<b>Bandwidth of Partial Private Circuit</b>	<b>Requisite Period</b>
64 kbit/s	10 working days
128 kbit/s to 256 kbit/s delivered over copper	10 working days

128 kbit/s to 256 kbit/s delivered over fibre	30 working days
320 kbit/s to 960 kbit/s	30 working days
1 Mbit/s	30 working days
2 Mbit/s	30 working days
Subsequent Partial Private Circuit of 2 Mbit/s	10 working days
34 Mbit/s to 155 Mbit/s	57 working days
Above 155 Mbit/s	72 working days

#### *Third Party's ability to cancel order*

40. Where the Provisioning Interval exceeds the relevant Requisite Period set out in the table in paragraph 39 of this Direction, a Third Party shall be allowed to cancel its order for a Partial Private Circuit after the Cancellation Threshold (as set out in the table below) has expired. The Cancellation Threshold shall commence upon the expiry of the relevant Requisite Period set out in the table in paragraph 39 of this Direction. The Requisite Periods in the table in paragraph 39 shall apply, for the purposes of this paragraph, regardless of whether there is a delay in delivery of a Partial Private Circuit which is due to circumstances beyond the Dominant Provider's reasonable control but not including delay by a Third Party.

<b>Requisite Period set out in the table in paragraph 39 of this Direction</b>	<b>Cancellation Threshold</b>
10 working days or less	10 working days
11 to 20 working days	15 working days
21 to 40 working days	20 working days
41 to 60 working days	25 working days
Over 60 working days	30 working days

41. Where a Third Party cancels a Partial Private Circuit pursuant to paragraph 40 of this Direction, the Dominant Provider shall not charge the Third Party for the circuit and shall not charge for cancelling the circuit. The Dominant Provider shall also be liable to pay the Third Party any fixed individual compensation payments accumulated pursuant to the PPC Contract as amended by the Directions.

#### *Reduced Requisite Periods for Partial Private Circuits*

42. The Dominant Provider shall ensure that for at least 70% (by volume) of Partial Private Circuits of a particular bandwidth delivered by the Dominant Party to a Third Party within a three month period (such period not to be calculated on a rolling basis) the Committed Delivery Date is set within the relevant Reduced Requisite Period (as set out in the table below).

<b>Bandwidth of Partial Private Circuit</b>	<b>Reduced Requisite Period</b>
128 kbit/s to 256 kbit/s delivered over fibre	20 working days
320 kbit/s to 960 kbit/s	20 working days

1 Mbit/s	20 working days
2 Mbit/s	20 working days
34 Mbit/s to 155 Mbit/s	45 working days
Above 155 Mbit/s	50 working days

43. In calculating the 70% (by volume) of Partial Private Circuits to which paragraph 42 of this Direction applies the following shall not be included:

- Partial Private Circuits of 64 kbit/s;
- Partial Private Circuits of 128 kbit/s to 256 kbit/s delivered over copper;
- Subsequent Private Partial Circuits of 2Mbit/s;
- Partial Private Circuit orders to which paragraph 36 of this Direction applies; and
- Partial Private Circuits which exceed 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Order Commitment.

44. The Reduced Requisite Periods set out in the table in paragraph 42 of this Direction apply only if, in the previous three month reporting period (such period not to be calculated on a rolling basis), a Third Party has ordered from the Dominant Provider:

- *at least ten Partial Private Circuits of the same bandwidth where such Partial Private Circuits are 2 Mbit/s or less; or*
- *at least two Partial Private Circuits of the same bandwidth where such Partial Private Circuits are more than 2 Mbit/s.*

45. For the purposes of this Direction, in determining whether 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Order Commitment has been exceeded, the calculation shall be at a national level for each individual Partial Private Circuit bandwidth category and applied in the order in which the Partial Private Circuits were ordered by the Third Party.

#### *Multiple orders*

46. Where the Dominant Provider receives an order for more than 10 Partial Private Circuits at one site from a Third Party, the relevant Requisite Period applicable to determine whether the Dominant Provider shall pay fixed individual compensation as set out in paragraphs 38 and 39 of this Direction, shall be the relevant Requisite Period set out in the table in paragraph 39 of this Direction increased by a maximum of 50%. The Dominant Provider shall inform the Third Party of the revised time scales as soon as reasonably practicable.

#### *Availability of service*

47. When total loss of service (i.e. total loss of service for one minute or longer) occurs three or more times, within a 12 month period, to a Partial Private Circuit, the Third Party shall not

be liable to the Dominant Provider for the monthly rental in any subsequent month where total loss of failure occurs to the Partial Private Circuit, until such time as 12 months have passed and the Partial Private Circuit has not suffered total loss of service. Occurrences of total loss of service which result in the Dominant Provider being liable to pay fixed individual compensation pursuant to paragraphs 58, 59 and 61 of this Direction, shall not be considered as an occurrence of a total loss of service for the purposes of this paragraph.

### **Network Infrastructure**

#### *Time scales for fixed individual compensation*

48. Where the Committed Delivery Date for Network Infrastructure is set by the Dominant Provider later than the relevant Requisite Period (as set out in the table in paragraph 49 of this Direction) without the agreement of a Third Party, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 0.3% of the connection fee for the Network Infrastructure, per working day, or part of a working day, in respect of the period commencing immediately on the expiry of the relevant Requisite Period and expiring on the Installation Date,

49. Where the Committed Delivery Date for Network Infrastructure is set by the Dominant Provider either, later than the relevant Requisite Period (as set out in the table below) but with the agreement of a Third Party, or within the Requisite Period, the Dominant Provider shall be liable to pay the Third Party a fixed individual compensation payment equal to 0.3% of the connection fee for the Network Infrastructure, in respect of the period commencing immediately on the working day following the Committed Delivery Date and expiring on the Installation Date.

<b>Network Infrastructure</b>	<b>Requisite Period (where the Dominant Provider needs to carry out Civil Works)</b>	<b>Requisite Period (where the Dominant Provider does not need to carry out Civil Works)</b>
ISH links	110 working days	85 working days
CSH links	110 working days	85 working days
IBH links	110 working days	85 working days
ISH links – provision of new multiplexor on an existing Point of Connection	Not applicable	60 working days
ISH links - provision of extra STM-1 interface on existing STM-1 ISH SMA4 multiplexor	Not applicable	60 working days
CSH links - provision of new multiplexor on existing Point of Connection	Not applicable	60 working days
CSH links requiring only provision of new tributary		

card on existing multiplexor

Not applicable

25 working days

*Third Party's ability to cancel order*

50. Where the Provisioning Interval exceeds the relevant Requisite Period set out in the table in paragraph 49 of this Direction, a Third Party shall be allowed to cancel its order for Network Infrastructure after the Cancellation Threshold (as set out in the table below) has expired. The Cancellation Threshold shall commence upon the expiry of the relevant Requisite Period set out in the table in paragraph 49 of this Direction. The Requisite periods in the table in paragraph 49 shall apply, for the purposes of this paragraph, regardless of whether there is a delay in delivery of Network Infrastructure which is due to circumstances beyond the Dominant Provider's reasonable control but not including delay by a Third Party.

<b>Requisite Period set out in the table in paragraph 49 of this Direction</b>	<b>Cancellation Threshold</b>
21 to 40 working days	20 working days
41 to 60 working days	25 working days
61 to 90 working days	30 working days
Over 90 working days	40 working days

51. Where a Third Party cancels Network Infrastructure pursuant to paragraph 50 of this Direction, the Dominant Provider shall not charge the Third Party for the Network Infrastructure and shall not charge for cancelling the Network Infrastructure. The Dominant Provider shall also be liable to pay the Third Party any fixed compensation payments accumulated pursuant to the PPC Contract as amended by the Directions.

*Reduced Requisite periods for Network Infrastructure*

52. The Dominant Provider shall ensure that for at least 70% (by volume) of the total VC4-equivalents of Network Infrastructure delivered by it to a Third Party during a three month period (such period not to be calculated on a rolling basis) the Committed Delivery Date is set within the relevant Reduced Requisite Period (as set out in the table below).

<b>Network Infrastructure</b>	<b>Reduced Requisite Period (where the Dominant Provider needs to carry out Civil Works)</b>	<b>Reduced Requisite Period where the Dominant Provider does not need to carry out Civil Works)</b>
ISH links	75 working days	60 working days
CSH links	75 working days	60 working days
IBH links	75 working days	60 working days
ISH links - provision of new multiplexor on an existing Point of Connection	Not applicable	40 working days
ISH links - provision of extra STM-1 interface on existing STM-1 ISH SMA4		



multiplexor	Not applicable	40 working days
CSH links - provision of new multiplexor on existing Point of Connection	Not applicable	40 working days
CSH links requiring only provision of new tributary card on existing multiplexor	Not applicable	20 working days

53. In calculating the 70% (by volume) of the total VC4-equivalents of Network Infrastructure to which paragraph 52 of this Direction applies the following shall not be included:

- Network Infrastructure which exceeds 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Capacity Order.

54. The Reduced Requisite Periods set out in the table in paragraph 52 of this Direction only apply if, in the previous three month reporting period (such period not to be calculated on a rolling basis) a Third Party has ordered from the Dominant Provider at least 2 VC4-equivalents of Network Infrastructure. For the purposes of this paragraph the first reporting period of three months shall be the first such reporting period falling after 30 working days following the date of publication of this Direction.

55. For the purposes of this Direction, in determining whether 110% (by volume), rounded up to the nearest integer where necessary, of a Third Party's Advance Capacity Order has been exceeded, the calculation shall be made using VC4-equivalents at each Point of Connection applied in the order in which the Network Infrastructure was ordered by the Third Party.

***Repair of Partial Private Circuits and Network Infrastructure***

56. Where the Dominant Provider offers to a Third Party Regular Care and Enhanced Care for Partial Private Circuits and Network Infrastructure it shall do so at a cost orientated price and as set out in the table below:

	<b>Operational hours</b>	<b>Repair/response time</b>	<b>Extras</b>
<b>Regular Care</b>	Normal working hours	Response within one working day of receipt of a fault report by a Third Party. Repair within two working days of receipt of a fault report by a Third Party.	If a fault is not remedied within two working days of receipt of a fault report by a Third Party, the Dominant Provider shall call the Third Party to report progress being made to remedy the fault.
<b>Enhanced Care</b>	24 hours per day, 7 days per week (including public and bank holidays).	Response within four hours of receipt of a fault report from a Third Party. Repair within five	If a fault is not remedied within five hours of receipt of a fault report by a Third Party, the Dominant Provider shall

		hours of receipt of a fault report by a Third Party.	contact the Third Party to report progress being made to remedy the fault.
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57. Receipt by the Dominant Provider from a Third Party of a report of a fault concerning a Partial Private Circuit or Network Infrastructure, shall be acknowledged by the Dominant Provider to the Third Party within one hour.

58. Where the Dominant Provider fails to repair a Partial Private Circuit within the time limits set out in the table in paragraph 56 of this Direction it shall pay to the Third Party a fixed individual compensation payment as set out in paragraphs 59 to 63 inclusive of this Direction in respect of the period commencing on the expiry of the applicable repair time set out in the table in paragraph 56 and expiring at the time the Partial Private Circuit or Network Infrastructure is repaired.

59. Where the Third Party has ordered the Dominant Provider's Regular Care for Partial Private Circuits, the Dominant Provider shall pay the Third Party an amount equal to 100% of the monthly rental payable for the type of Partial Private Circuit being repaired per working day, or part of a working day, of delay is repair.

60. Where the Third Party has ordered the Dominant Provider's Regular Care for Network Infrastructure, the Dominant Provider shall pay the Third Party an amount equal to 1% of the connection fee for the type of Network Infrastructure being repaired per working day, or part of a working day, of delay in repair.

61. Where the Third Party has ordered the Dominant Provider's Enhanced Care for Partial Private Circuits, the Dominant Provider shall pay the Third Party an amount equal to 15% of the monthly rental payable for the type of Partial Private Circuit being repaired per hour, or part of an hour, of delay in repair.

62. Where the Third Party has ordered the Dominant Provider's Enhanced Care for Network Infrastructure, the Dominant Provider shall pay the Third Party an amount equal to 0.15% of the connection fee for the type of Network Infrastructure being repaired per hour, or part of an hour, of delay in repair.

63. The Dominant Provider shall not be liable to pay fixed individual compensation pursuant to paragraphs 60 and 62 of this Direction where it is also liable for fixed individual compensation pursuant to paragraphs 59 and 61 of this Direction where the Partial Private Circuit is being provided using the Network Infrastructure which is being repaired.

64. The Dominant Provider shall attend, and invite Third Parties to regular meetings to review the level of service provided by it in relation to Partial Private Circuits and related Network Infrastructure.

### **Change of speed or interface**

65. The Dominant Provider shall offer to provide within a reasonable period of a Third Party's written request, the ability to alter the speed or interface of a Partial Private Circuit.

66. The Dominant Provider shall ensure that it provides to a Third Party a Partial Private Circuit variant for the services to which paragraph 65 of this Direction applies, which are equivalent to the services it currently provides on a retail basis for retail leased lines.

### **STM-1, ISH and CSH handover**

67. The Dominant Provider shall offer to provide within a reasonable period of a Third Party's written request for a Synchronous Transfer Mode-1 ("STM-1"), an interface using an ISH link, CSH link or IBH link; and handover pursuant to paragraph 68 of this Direction. Such link or handover shall be provided by way of network connecting apparatus capable of providing no more than the STM-1 capacity ordered by the Third Party.

68. The Dominant Provider shall within a reasonable period of a Third Party's written request, handover in a footway jointing chamber for Partial Private Circuits at a reasonable point nominated by the Third Party. The footway jointing chamber shall be located in the same Dominant Provider local serving exchange area as the Dominant Provider Serving Node to which the Partial Private Circuits being handed over are connected.

### **Equipment re-use**

69. Paragraph 70 of this Direction shall only apply to the re-use of Plesiochronous Digital Hierarchy ("PDH") and Synchronous Digital Hierarchy ("SDH") equipment situated at a third party site ("Equipment").

70. The Dominant Provider may reject a request by a Third Party for re-use of PDH Equipment if such re-use would be incompatible with its network. Any such rejection by the Dominant Provider shall be made within 10 working days of a request by the Third Party and fully justified in writing to the requesting Third Party at the same time as the request is rejected.

### **Other Circuits**

71. Unless Ofcom otherwise agrees, the Dominant Provider shall, offer to provide Partial Private Circuit with no single point of failure, within a reasonable period of a Third Party's request.

72. The Dominant Provider shall offer to provide, within a reasonable period of a Third Party's written request, a Partial Private Circuit which is dual pathed and diversely routed from a third party customer's premises to a Third Party's single Point of Connection.

73. The Dominant Provider shall offer to provide to a Third Party, within a reasonable period of the Third Party's written request, transparent transmission capacity at all bandwidths up to and including a bandwidth capacity of two megabits per second between a radio base station and a Point of Connection with a Third Party's electronic communications network connected to the nearest appropriate digital cross connection node.

74. The Dominant Provider shall provide to the Third Party the product set out in paragraph 73 of this Direction on terms and conditions which, where appropriate, are comparable to the provisions relating to service level agreements, forecasting penalties and migration set out in paragraphs 1 to 64 of this Direction and the Direction made under Condition H3 and published on the same day as this Direction.

75. The Dominant Provider shall implement this Direction within 10 working days of its publication.

76. This Direction shall take effect on the day it is published.

**Gareth Davies**  
**Competition Policy Director, Ofcom**

**A person duly authorised in accordance with paragraph 18 of the Schedule to the Office of Communications Act 2002**

**[ Date ]**

**[Draft] Direction under section 49 of the Communications Act 2003 and SMP Services Condition H7 imposed on British Telecommunications plc ('BT') as a result of the market power determinations made by the Office of Communications ('Ofcom') that BT has significant market power in the market for the provision of wholesale trunks segments at all bandwidths for the UK (excluding the Hull Area)**

**WHEREAS:**

- (A) as a result of a market analysis carried out by Ofcom, it proposed on 17 January 2008, in accordance with sections 48 (2) and 80 of the Act, that the Dominant Provider has significant market power in the markets for the provision of wholesale trunk segments at all bandwidths for the UK;
- (B) Ofcom further proposed SMP Service Condition H7 which imposes various obligations on British Telecom plc ('BT'), *inter alia*, the obligation to comply with any Direction Ofcom may from time to time make under this Condition;
- (C) this [Draft] Direction concerns matters to which Condition H7 relates;
- (D) for the reasons set out in the explanatory statement accompanying this [Draft] Direction, Ofcom is satisfied that, in accordance with section 49(2) of the Act, this [Draft] Direction is:
  - (i) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;
  - (ii) not such as to discriminate unduly against particular persons or against a particular description of persons;
  - (iii) proportionate to what it is intended to achieve; and
  - (iv) in relation to what it is intended to achieve, transparent;
- (E) for the reasons set out in the explanatory statement accompanying this [Draft] Direction, Ofcom is satisfied that he has acted in accordance with the relevant duties set out in sections 3 and 4 of the Act;
- (F) Ofcom has published a notification of the proposed [Draft] Direction in accordance with section 49 of the Act;

**NOW, therefore, pursuant to Condition H7 Ofcom makes the following Direction:**

For the purpose of interpreting this Direction the definitions set out in the Direction made under Condition H1 and published on the same day as this Direction shall apply.

Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them.

The Interpretation Act 1978 shall apply as if this Direction was an Act of Parliament.

Headings and titles shall be disregarded.

This Direction shall only apply to the extent that the Dominant Provider provides a Partial Private Circuit which contains an element of a product or service which falls within the market for wholesale trunk segments.

1. The Dominant Provider shall, on a quarterly basis, publish the following information for each Third Party to whom it provides Partial Private Circuits on an individual and anonymous basis; and on an aggregated basis with respect to all such Third Parties on an anonymous basis:

- its performance with respect to Committed Delivery Dates, Requisite Periods, Reduced Requisite Periods, FOC Receipt Intervals, repair and availability of service;
- a list of incidences of circumstances beyond the reasonable control of the Dominant Provider, split by reason;
- the percentage of each Third Party's previous month's orders having Committed Delivery Dates quoted within 50% of the Requisite Periods set out in the table in paragraph 39 of the Direction made under Condition H1 and published on the same day as this Direction;
- the number and percentage of instances where each Third Party exceeds the applicable FOC Acceptance Interval, set out by bandwidth, for Partial Private Circuits;
- the number and percentage of instances where each Third Party exceeds the applicable FOC Acceptance Interval for Network Infrastructure;
- the average amount by which each Third Party exceeds the applicable FOC Acceptance Interval, set out by bandwidth, for Partial Private Circuits;
- the average amount by which each Third Party exceeds the applicable FOC Acceptance Interval for Network Infrastructure;
- the number and percentage of orders for Partial Private Circuits rejected by the Dominant Provider;
- the number and percentage of orders for Network Infrastructure rejected by the Dominant Provider;
- the mean response time to fault reports relating to Partial Private Circuits and Network Infrastructure sent to the Dominant Provider by Third Party; and
- new installation fault report rate relating to Partial Private Circuits.

The aggregated reports shall include the Dominant Provider's performance in respect of provision to its retail arm.

2. The Dominant Provider shall ensure that its monitoring systems are sufficient to enable it, at all times, to be capable, following a written request by Ofcom, to publish the following information for each Third Party to whom it provides Partial Private Circuits on an individual and anonymous basis; and on an aggregated basis with respect to all such Third Parties on an anonymous basis:

- list of reasons for rejections of orders;

- list of reasons for faults; and

- list of reasons for any Committed Delivery Dates beginning 10 working days later than the relevant Requisite Period.

The aggregated reports shall include the Dominant Provider's performance in respect of provision to its retail arm.

3. Nothing in this Direction shall require the Dominant Provider to publish confidential information relating to its business or that of a Third Party.

4. The information set out in paragraph 1 above shall be first published within three months of this Direction taking effect and every three months thereafter.

5. Publication referred to in paragraph 1 above shall be effected by:

- (a) for information on an aggregated basis, by placing a copy of the information on any relevant website operated or controlled by the Dominant Provider;
- (b) for information on an individual basis, by electronic mailing the information to the relevant Third Party; and
- (c) sending a copy of the information to Ofcom.

6. This Direction shall take effect on the day it is published.

**Gareth Davies**  
**Competition Policy Director, Ofcom**

**A person duly authorised in accordance with paragraph 18 of the Schedule to the Office of Communications Act 2002**

**[ Date ]**

**[Draft] Direction under section 49 of the Communications Act 2003 and SMP services condition HH1 imposed on British Telecommunications plc as a result of the market power determinations made by OFCOM that BT has significant market power in the UK market (excluding the Hull area) for alternative interface symmetric broadband origination at a bandwidth capacity up to and including one gigabit per second**

**WHEREAS:**

- (A) as a result of a market analysis carried out by Ofcom, it proposed on 17 January 2008, in accordance with sections 48 (2) and 80 of the Act, that the Dominant Provider has significant market power in the markets for the provision of wholesale trunk segments at all bandwidths for the UK;
- (B) Ofcom further proposed SMP Service Condition HH1 which imposes various obligations on British Telecom plc ('BT'), *inter alia*, the obligation to comply with any Direction Ofcom may from time to time make under this Condition;
- (C) this [Draft] Direction concerns matters to which Condition HH1 relates;
- (D) for the reasons set out in the explanatory statement accompanying this [Draft] Direction, Ofcom is satisfied that, in accordance with section 49(2) of the Act, this [Draft] Direction is:
  - (i) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;
  - (ii) not such as to discriminate unduly against particular persons or against a particular description of persons;
  - (iii) proportionate to what it is intended to achieve; and
  - (iv) in relation to what it is intended to achieve, transparent;
- (E) for the reasons set out in the explanatory statement accompanying this [Draft] Direction, Ofcom is satisfied that he has acted in accordance with the relevant duties set out in sections 3 and 4 of the Act;
- (F) Ofcom has published a notification of the proposed [Draft] Direction in accordance with section 49 of the Act;

**NOW, therefore, pursuant to Condition HH1 Ofcom makes the following Direction:**

1. The Dominant Provider shall modify the service level agreements which govern the supply of backhaul extension services ('BES'), wholesale extension services ('WES') and wholesale end to end Ethernet services ('WEES'). In particular, the following contracts will require modification to reflect the proposals set out in the accompanying Annex to this Direction: (i) the Conditions for Backhaul Extensions Services; and (ii) the Conditions for Wholesale Extension Services.
2. For the purpose of interpreting this Direction, the following definitions shall apply:
  - (a) '**Act**' means the Communications Act 2003;
  - (b) '**Dominant Provider**' means British Telecommunications plc, whose registered company number is 1800000, and any British Telecommunications plc subsidiary or



holding company, or any subsidiary of that holding company, all as defined by Section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

- (c) **'Transitional Provisions'** means sections 408 and 411 of the Act, Article 3(1) of the Communications Act 2003 (Commencement No. 1) Order 2003 and Article 3(2) of the Office of Communications 2002 (Commencement No. 3) and Communications Act 2003 (Commencement No. 2) Order 2003;
3. Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them in paragraph 2 above and otherwise any word or expression shall have the same meaning as it has in The Notification or, if the context so permits, in Schedule 1 thereto, as appropriate, and otherwise any word or expression shall have the same meaning as it has in the Act.
  4. For the purpose of interpreting this Direction:
    - (a) headings and titles shall be disregarded; and
    - (b) the Interpretation Act 1978 shall apply as if this Direction were an Act of Parliament.
  5. This Direction shall take effect on the day it is published and the Dominant Provider shall implement the changes set out herein within one month.
  6. The Annex to this Direction shall form part of this Direction.

**Gareth Davies**  
**Competition Policy Director, Ofcom**

**A person duly authorised in accordance with paragraph 18 of the Schedule to the Office of Communications Act 2002**

**[ Date ]**

## Annex

### ***Proposed modifications to the Conditions for Backhaul Extension Services and the Conditions for Wholesale Extension Services***

- 1) BT shall amend the terms and conditions which govern the supply of backhaul extension services ('BES'), wholesale extension services ('WES') and wholesale end to end Ethernet services ('WEES') set out in the Conditions for Backhaul Extensions Services and the Conditions for Wholesale Extension Services to provide the following:

#### *Compensation per event and value of compensation*

- a) The definition of Contractual Delivery Date ('CDD') shall be amended to require BT to provide reasons to justify a CDD which is set beyond the 57<sup>th</sup> day and that any extension of the CDD beyond the 57<sup>th</sup> shall be made subject to the consent of the Communications Provider concerned whose consent shall not be unreasonably withheld;
- b) BT shall pay the Communications Provider compensation for each day or part day of delay in delivery of service beyond the CDD or the Communications Provider's Requirement Date ('CRD') (whichever is later);
- c) BT shall pay the Communications Provider compensation for each and every fault which has not been restored in the first five hours on a per hour basis thereafter;
- d) The compensation payable in event of the each late provision of the required BES, WES or WEES service shall be set at 100% of one month's line rental for every day or part day of delay beyond the CDD or CRD (whichever is later);
- e) The compensation payable in the event of each late fault repair in relation to BES, WES and WEES shall be 15% of one month's line rental for every fault which has not been restored in the first five hours for every hour thereafter until service is restored;

#### *Limitations on compensation- removal of caps*

- f) Any limits on compensation payable as a result of a failure to satisfy the service guarantees shall be removed; and

#### *Additional losses*

- g) Any compensation payable under the contract shall be without prejudice to any right of either party to claim for additional loss.

#### *Proactive payments*

- h) BT shall monitor its performance against the service guarantees for fault repair and compensate Communications Providers proactively should it fail to satisfy the service guarantees. Compensation payments shall be made on a monthly basis. For the avoidance of doubt, compensation shall be payable without the need for a Communications Provider to make a claim.

## Annex 16

# Glossary

### **Alternative interface symmetric broadband origination (AISBO)**

A form of symmetric broadband origination service providing symmetric capacity between two sites, generally using an Ethernet IEEE 802.3 interface

### **Asymmetric Digital Subscriber Line (ADSL)**

A technology that allows the use of a copper line to send a high data rate in one direction and a lower data rate in the other

### **Asynchronous Transfer Mode (ATM)**

A technology that enables data transfer asynchronously relative to its input into the communications system. The data is put into cells and transmitted through the network to be re-constructed at the output.

### **Bandwidth**

The physical characteristic of a telecommunications system that indicates the speed at which information can be transferred. In analogue systems, it is measured in cycles per second (Hertz) and in digital systems in bits per second (Bit/s).

### **Base-station Controller (BSC)**

An element of a Mobile Telephone Network that controls a number of radio base-stations

### **Coarse Wave Division Multiplex (CWDM)**

A transmission technology that enables up to 18 wavelengths of light to share the same fibre optic pair

### **Current Cost Accounting (CCA)**

An accounting convention, where assets are valued and depreciated according to their current replacement cost whilst maintaining the operating or financial capital of the business entity.

### **Customer Sited Handover (CSH)**

Interconnection occurs at a communications provider's premises.

### **Customer Premises Equipment (CPE)**

Sometimes referred to as customer apparatus or consumer equipment, being equipment on consumers' premises which is not part of the public telecommunications network and which is directly or indirectly attached to it.

### **Dense Wave Division Multiplex (DWDM)**

A transmission technology that enables up to 80 wavelengths of light to share the same fibre optic pair

### **Digital Local Exchange (DLE)**

The telephone exchange to which customers are connected, usually via a concentrator

### **Digital Main Switching Unit (DMSU)**

The main type of tandem switch, primarily used for conveying long distance calls. DMSUs form the backbone of the trunk network

### **Digital Subscriber Line (DSL)**

A technology for bringing high-bandwidth information to homes and small businesses over ordinary copper telephone lines

**Electronic Communications Network (ECN)**

A network that enables intercommunication between users of that network

**Excess Construction Charge (ECC)**

A charge levied where additional construction of duct and fibre or copper is required to provide service to a customer premise

**Frame Relay**

A packet switched data service providing for the interconnection of Local Area Networks and access to host computers at up to 2Mbit/s

**Fully allocated cost (FAC)**

An accounting approach under which all the costs of the company are distributed between its various products and services. The fully allocated cost of a product or service may therefore include some common costs that are not directly attributable to the service.

**Global Positioning System (GPS)**

A system of providing accurate geographic position of a user

**In Span Handover (ISH)**

Interconnection occurring at a point between BT's premises and a communications provider's premises

**kbit/s**

kilobits per second. A measure of speed of transfer of digital information

**LAN Extension Service (LES)**

A communications service that enables the connection of two Local Area Networks together

**Leased line**

A permanently connected communications link between two premises dedicated to the customers' exclusive use.

**Local Area Network (LAN)**

A network typically linking a number of computers together within a business premise enabling intercommunication between users and access to email, Internet and Intranet applications

**Local Loop Unbundling (LLU) backhaul circuit**

A circuit provided by BT that enables the connection of a communications provider's DSLAM to a communications provider's point of connection with BT's SDH network.

**Long Run Incremental Cost (LRIC)**

The cost caused by the provision of a defined increment of output given that costs can, if necessary, be varied and that some level of output is already produced.

**Mobile switching Centre (MSC)**

A component of a Mobile Telephone Network that switches voice calls between mobile users

**Multi Protocol Label Switching (MPLS)**

A technology that enables efficient routing of IP traffic over different systems

**Multiple service Access Node (MSAN)**

A device typically installed in a telephone exchange (although sometimes in a roadside cabinet) which connects customers' telephone lines to the core network, to provide telephony, ISDN and broadband all from a single platform

**Mbit/s**

Megabits per second. A measure of speed of transfer of digital information.

**Next Generation Network (NGN)**

A Network utilising new technology such as Ethernet and IP to provide an array of services to end-users

**Partial Private Circuit (PPC)**

A generic term used to describe a category of private circuits that terminate at a point of connection between two communications providers' networks. It is therefore the provision of transparent transmission capacity between a customer's premises and a point of connection between the two communications providers' networks. It may also be termed a part leased line.

**Passive Optical Network (PON)**

A particular configuration of fibre-optic network that brings optical fibre cabling and signals all or most of the way to the end user

**Plesiochronous Digital Hierarchy (PDH)**

An older method of digital transmission used before SDH which requires each stream to be multiplexed or demultiplexed at each network layer and does not allow for the addition or removal of individual streams from larger assemblies.

**Points of Connection (POC)**

A point where one communications provider interconnects with another communications provider for the purposes of connecting their networks to 3<sup>rd</sup> party customers in order to provide services to those end customers.

**Public Switched Telephone Network (PSTN)**

A telecommunications network providing voice telephony for the general public.

**Radio Base Station (RBS) backhaul circuit**

A circuit provided by BT that connects a mobile communications provider's base-station to the mobile communications provider's mobile switching centre.

**Service Level Agreement (SLA)**

A contract between a network service provider and a customer that specifies, usually in measurable terms, what services the network service provider will furnish

**Service Level Guarantee (SLG)**

A statement of measurable aspects of a service connected with the Service Level Agreement

**SSNIP**

Small but Significant Non-transitory Increase in Price, usually considered to be 5 to 10 per cent, which is part of the hypothetical monopolist test used in market definition analysis

**Stand Alone Cost (SAC)**

An accounting approach under which the total cost incurred in providing a product is allocated to that product.

**Storage Area Network (SAN)**

A high-speed special-purpose network that connects different kinds of data storage devices with associated data servers on behalf of a larger network of users

**Synchronous Digital Hierarchy (SDH)**

A method of digital transmission where transmission streams are packed in such a way to allow simple multiplexing and de-multiplexing and the addition or removal of individual streams from larger assemblies

**Symmetric broadband origination (SBO)**

A symmetric broadband origination service provides symmetric capacity from a customer's premises to an appropriate point of aggregation, generally referred to as a node, in the network hierarchy. In this context, a "customer" refers to any public electronic communications network provider or end user.

**Symmetric Digital Subscriber Line (SDSL)**

A technology that allows the use of a copper line to send an equal quantity of data (e.g. a television picture) in both directions

**Tier 1**

A tier in BT's SDH network that denotes a network of nodes covering areas of high population. These nodes are connected by very high capacity line systems and denote the BT trunk network.

**Time Division Multiplex (TDM)**

A method of putting multiple data streams in a single signal by separating the signal into many segments, each having a very short duration. Each individual data stream is reassembled at the receiving end based on the timing

**Traditional interface symmetric broadband origination (TISBO)**

A form of symmetric broadband origination service providing symmetric capacity from a customer's premises to an appropriate point of aggregation in the network hierarchy, using a CCITT G703 interface

**Ultra Dense Wave Division Multiplex (UDWDM)**

A transmission technology that enables up to 320 or more wavelengths of light to share the same fibre optic pair

**Voice over IP (VoIP)**

A generic term used to describe telephony services provided over IP networks

**Virtual Private Network (VPN)**

A network that uses a public telecommunication infrastructure, such as the Internet, to provide remote offices or individual users with secure access to their organisation's network

**Wave Division Multiplex (WDM)**

A transmission technology that enables multiple wavelengths of light to share the same fibre optic pair

**Wholesale Extension Service (WES)**

A wholesale Ethernet product that can be used to link a customer premise to a node in a communications network

**Wide Area Network (WAN)**

A geographically dispersed telecommunications network