

Review of the Wholesale Broadband Access Markets

Identification and analysis of markets Determination of
market power and setting of SMP conditions

Final Explanatory Statement and Notification

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EXPLANATORY STATEMENT

Summary

A new regulatory regime

S.1 A new regulatory framework for electronic communications networks and services entered into force in the UK on 25 July 2003. The basis for the new framework is five new EU Communications Directives (“the Directives”) that are designed to create harmonised regulation across Europe.

S.2 The new Directives require National Regulatory Authorities (“NRAs”), amongst other things, to carry out reviews of competition in communications markets to ensure that regulation remains appropriate in the light of changing market conditions.

S.3 As part of this series of reviews, on 16 December 2003 Oftel/Ofcom published a consultation document entitled *Review of the Wholesale Broadband Access Markets* (the “December consultation”). That document followed an earlier consultation document published on 28 April 2003 (the “April consultation”) and invited comments on Oftel/Ofcom’s proposal for defining the relevant wholesale market, assessment of competition and regulatory remedies in that market. The period of consultation closed on 6 February 2004.

S.4 As required by the Directives, the draft decision was also sent to the European Commission and to other NRAs as, in Ofcom’s opinion, the proposal may have affected trade between Member States. The final decision included in this document is also being communicated to the European Commission and to the Regulatory authorities in other Member States in accordance with the scheme of the Directives.

Summary of decision

S.5 Having considered all responses to the December consultation document, Ofcom is setting out in the present document its final decision. This is summarised below.

Identification of markets

S.6 The products and services under consideration in this document include broadband internet access services. Ofcom has identified the following economic wholesale markets in accordance with competition law principles, for the purpose of ensuring that regulatory obligations are proportionate and objectively justifiable:

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

S.9 These markets are the same as those described in the December Consultation. The detail of the definitions of these markets, and the approach taken by Ofcom when identifying these markets, are contained in Chapter 2 of this document. That chapter also explains the differences between the market definitions identified by Ofcom and those included in the European Commission's Recommendation on relevant markets ("Recommendation").

Assessment of market power

S.11 Having analysed the operation of these markets, and taken utmost account of the Commission's "Guidelines on market analysis and the assessment of SMP" ("SMP Guidelines"), Ofcom concludes that SMP is held as set out below.

S.12 Based on evidence currently available to Ofcom and having considered responses made to the previous consultations, Ofcom concludes that British Telecom plc ("BT") has SMP in the following markets:

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

S.13 Based on evidence currently available to Ofcom and having considered responses made to the previous consultations, Ofcom considers that Kingston Communications plc ("Kingston") has SMP in the following market in the Hull area:

- (i) asymmetric broadband origination market.

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

Regulatory remedies

S.15 Given the position of SMP held by BT and Kingston – i.e.: their ability to behave, to an appreciable extent, independently of competitors, customers and ultimately consumers, Ofcom concludes that the following conditions should be imposed on BT in the markets identified at S.12;

- requirement to provide Network Access on reasonable request;
- requirement not to discriminate unduly;

- requirement to publish a reference offer;
- requirement to notify terms and conditions;
- requirement to notify technical information;
- requirement to provide quality of service information;
- requirement to establish a statement of requirements for new access;
- requirement to have accounting separation; and

Ofcom is also making a direction under the Network Access SMP condition to provide ATM Interconnection on a retail minus basis.

S.17 Ofcom imposes the following requirements on Kingston in the markets identified at S.13:

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

S.18 This decision on regulatory remedies is unchanged from that proposed in the December consultation document. Full details of these remedies, including their effect and the reasons for setting these conditions, and the direction under the Network Access SMP condition, are contained in Chapter 4 of this document.

S.19 The new Directives allow Member States to carry forward some existing regulation until the market reviews have been completed and any new conditions put in place. As NRAs were not able to notify draft proposals to the European Commission before 25 July 2003, Ofcom issued notices to relevant communications providers to maintain some of the regulatory regime that existed before that date. For the markets that are the subject of this document, specified licence conditions were made to continue in force by a notice given to BT and to Kingston on 23 July 2003 (the 'Continuation Notice'). This Continuation Notice came into effect on 25 July 2003.

S.20 As Ofcom has now decided to impose a number of conditions on BT and Kingston in these markets, the regulatory requirements that were continued beyond 25 July 2003 now need to be withdrawn. This will require Ofcom to discontinue the aforementioned provisions that were continued on 25 July. More details of the regulation to be removed, and how this will be done, are contained in Chapter 5 of this document.

Chapter 1

Introduction

Scope of this review and the extent of existing regulation

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

A new regulatory regime

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

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

1.3 The Framework Directive provides the overall structure for the new regulatory regime and sets out fundamental rules and objectives which read across all the new directives. Article 8 of the Framework Directive sets out three key policy objectives which have been taken into account in the preparation of this consultation document; namely promotion of competition, development of the internal market and the promotion of the interests of the citizens of the European Union. The Authorisation Directive establishes a new system whereby any person will be generally authorised to provide electronic communications services and/or networks without prior approval. The general authorisation replaces the former licensing regime. The Universal Service Directive defines a basic set of services that must be provided to end-users. The Access and Interconnection Directive (AID) sets out the terms on which providers may access each others' networks and services with a view to providing publicly

available electronic communications services. These four Directives were implemented in the UK on 25 July 2003. This was achieved via the Communications Act 2003 ("the Act"). The fifth Directive on Privacy establishes users' rights with regard to the privacy of their communications. This Directive was adopted slightly later than the other four Directives and was implemented by Regulation which came into force on 11 December 2003.

Market reviews

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

1.7 Each market review has three parts:

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

1.8 More detailed requirements and guidance concerning the conduct of market reviews are provided in the Directives, the Communications Act, and in additional documents issued by the European Commission, Oftel and Ofcom. As required by the new regime, in conducting this review Ofcom has taken the utmost account of the two European Commission documents discussed in paragraphs 1.12 and 1.13 below.

Consultation Processes

1.9 The consultation process for this market review began with a document published by Oftel, on 28 April 2003 (" **the April Consultation**"). That document invited comments over a 10 week period on proposals for the definition of relevant markets, assessment of competition, and on the implications of these proposals for the imposition of new SMP conditions.

1.10 A second stage of consultation began on 16 December 2003 ("**the December Consultation**"). This consultation updated the analysis based on market developments and responses to the first stage of consultation. This second stage of consultation, which closed on 6 February 2004, invited representations from UK stakeholders, the European Commission and other NRAs, in accordance with Article 7 of the Framework Directive (2002/21/EC).

1.11 Pursuant to the European Commission's Recommendation on notifications, time limits and consultations provided for in Article 7 of the Framework Directive (2003/561/EC), Ofcom also sent the European Commission a summary notification form of its draft proposals. Ofcom's notifications are published on the European Commission's website at: <http://forum.europa.eu.int/Public/irc/infso/ecctf/library?l=/&vm=detailed&sb=Title>

EC Commission "Recommendation on relevant product and service markets" ("the Recommendation")

1.12 The Commission identified in its Recommendation, a set of markets in which *ex ante* regulation might be warranted. The Recommendation seeks to promote harmonisation across the European Community by ensuring that the same product and service markets are subject to a market analysis in all Member States. However, NRAs are able to regulate markets that differ from those identified in the Recommendation where this is justified by national circumstances. Accordingly, NRAs are to define relevant markets appropriate to national circumstances, provided that the utmost account is taken of the product markets listed in the Recommendation (section 79 of the Act).

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

1.13 The European Commission has also issued Guidelines on market analysis and the assessment of SMP ("SMP Guidelines"). Oftel produced additional guidelines on the criteria to assess effective competition (see www.ofcom.org.uk/static/archive/oftel/publications/about_oftel/2002/smpg0802.htm). Ofcom has taken both sets of guidelines into utmost account when identifying a services market and when considering whether to make a market power determination under section 79 of the Act.

Regulation pending the completion of market reviews

1.14 The new Directives also allowed Member States to carry forward some existing regulations until the market reviews were completed and new conditions put in place. Continuation notices were therefore issued to relevant communications providers to maintain the effect of certain provisions contained in licence conditions that existed under the Telecommunications Act 1984 prior to 25 July 2003 until, inter alia, the market review process is finished. Further details on this continuation regime can be found at : www.ofcom.org.uk/static/archive/oftel/publications/eu_directives/2003/discont1003.pdf

Markets considered in this review

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

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

1.17 In the December consultation, based on the evidence available to Ofcom and having considered responses to the April consultation, Ofcom proposed the following three characteristics for categorising services as broadband:

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

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

1.18 Following the December consultation and Ofcom's consideration of responses to that consultation, Ofcom has decided that this is still the appropriate definition and it is necessary for **all** of these characteristics to be present simultaneously for an Internet access service to be defined as broadband. In practice, based on what is currently available in the UK, the services which meet these criteria are above 128kbits and therefore Ofcom's revised definition is in keeping with the Commission's. This issue is discussed in greater detail in chapter 2.

1.19 The Recommendation also refers to the fact that these services *may* be either symmetric or asymmetric. As explained in Chapter 2 of this document, Ofcom does not believe that it is appropriate to consider symmetric broadband access as part of this review; this is dealt with in the Review of Leased Lines

markets due to be published shortly. Furthermore, Chapter 2 also separates out broadband conveyance services which the Commission has included within the scope of its wholesale broadband access market.

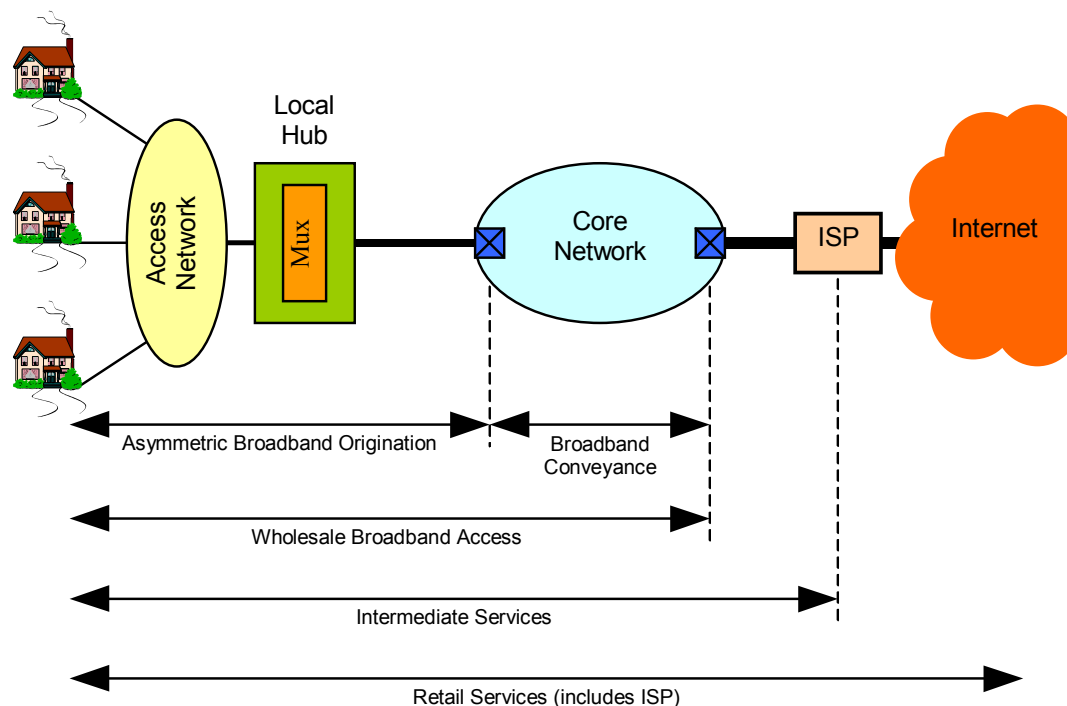
1.20 As set out in the previous consultations, the market reviews are required to be forward looking in their analysis. It is envisaged that there will be another market review of the services covered by this review in 18-24 months and therefore the analysis looks forward over that time period.

Hierarchy of Services

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

- (i) the local access network;
- (ii) broadband origination;
- (iii) broadband access (origination plus conveyance);
- (iv) services delivered to service providers (resale services, e.g. IPStream + BT Central)
- (v) services delivered to consumers (business or residential) e.g. broadband internet access

1.22 The services covered by this market review are the underlying wholesale services used to provide broadband internet access services to service providers (referred to as intermediate services) and ultimately to consumers. The diagram below illustrates the services in question.



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

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

Wholesale Broadband Access technologies

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

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

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

Satellite: two way or one-way. A number of service providers have launched two-way broadband services providing broadband satellite coverage to 99% of

the UK. A small minority of people are unable to receive satellite due to line of sight constraints.

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

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

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

Existing regulation

1.25 After further consideration and in reference to the continuation statement as discussed in Chapter 5, the following specific obligations (in relation to the wholesale broadband services and also intermediate broadband services as explained above in Figure 1) are to be discontinued. These are:

- Condition 43 – requirement to provide telecommunications services other than voice telephony services on request;
- Condition 45 – SMP obligations to Interconnect;
- Condition 46 – Requirement to publish reference interconnection offer;
- Condition 47 – requirement relating to Interconnect Agreements;

- Condition 49 – Requirement to send individual agreements to [OFCOM] and to publish them; and
- Condition 69 – Charge Control for Standard Services.

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

Outline of this document

1.27 This statement should be read in conjunction with Oftel's April and December consultation documents to understand the full reasoning for Ofcom's decision.¹ The December consultation document laid out Ofcom's proposed market definition, the proposal that BT and Kingston should be designated with SMP and the regulatory remedies to be imposed. Ofcom has considered the responses carefully and taken utmost account of the points made when setting

¹ Although the April consultation was published by Oftel and the December consultation by Oftel and Ofcom jointly, this document refers to Ofcom throughout unless referring to specific publications issued by Oftel such as consumer surveys, guidelines etc. prior to Ofcom's receiving its powers under the Communications Act .

out in the present document his final decision on market definition, the making of market power determinations and the setting of SMP conditions. The rest of the document is structured as follows:

- Chapter 2 defines the relevant markets;
- Chapter 3 assesses whether there is SMP in those markets;
- Chapter 4 sets out what regulatory remedies Ofcom is imposing in the markets where SMP has been found;
- Chapter 5 sets out the process for discontinuing existing regulation;
- Chapter 6 takes a forward look at how regulation might be expected to develop;
- Annexes A to C provide supporting information and argument
- Annex E contains the Notification/s containing Ofcom's final decision
- Annex F Direction in relation to ATM interconnection
- Annexes G and H Discontinuation Notices.

Notification

1.28 Annex E contains the formal notification of the proposals made by Ofcom as a result of the review, including the markets defined, the designation of SMP and the conditions that will be imposed as a result of the market analysis.

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

Chapter 2

Market definition

Identification of markets

2.1 Section 79(1) of the Act provides that before a market power determination may be considered, Ofcom must identify the markets which are, in its opinion, the ones which, in the circumstances of the United Kingdom, are the markets in relation to which it is appropriate to consider such a determination and to analyse that market. Ofcom is required to take utmost account of all applicable guidelines and recommendations issued by the European Commission. It is required under Section 79(4) of the Act to issue a notification of its proposals. It is entitled, by virtue of section 79(5) of the Act, to issue this notification with its proposal as to a market determination and with its proposals for setting SMP services conditions. The notification at Annex E is a single notification containing all such proposals.

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

Commission's approach to market definition

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

2.4 Paragraph 3.1 also states that because market analysis is forward – looking, markets are defined prospectively taking account of expected or foreseeable technological or economic developments over a reasonable horizon linked to the timing of the next market review. Again, this is the approach followed by Ofcom.

2.5 Paragraph 3.1 also states that market definition is not an end in itself, but a means to assessing effective competition for the purposes of *ex ante* regulation. Ofcom has adopted an approach by which this consideration is at the centre of its analysis. The purpose of market definition is to illuminate the situation with regard to competitive pressures. For example, Ofcom's approach to supply-side

substitution explicitly identifies as the key issue the question of whether additional competitive constraints on pricing are brought to bear by additional suppliers entering the market. Thus, the key issue is not the market definition for its own sake, but an identification of the extent and strength of competitive pressures.

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

Account taken of the EU Guidelines/Recommendations

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

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

General approach to market definition

2.9 There are two dimensions to the definition of a relevant market: the relevant products to be included in the same market and the geographic extent of the market. Ofcom's approach to market definition follows that used by UK competition authorities, [Office of Fair Trading Market Definition Guideline](#), (OFT 403) which is in line with those used by European and US competition authorities.

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

2.11 The concept of the 'hypothetical monopolist test' (HMT) is a useful tool to identify close demand-side and supply-side substitutes. A product is considered

to constitute a separate market if a hypothetical monopoly supplier could impose a small but significant, non-transitory price increase (SSNIP) above the competitive level without losing sales to such a degree as to make this unprofitable. If such a price rise would be unprofitable, because consumers would switch to other products, or because suppliers of other products would begin to compete with the monopolist, then the market definition should be expanded to include the substitute products.

2.12 Throughout this document, markets have been defined first on the demand-side. The analysis of demand-side substitution has been undertaken by considering if other retail services could be considered as substitutes by consumers, in the event of the hypothetical monopolist introducing a SSNIP above the competitive level.

2.13 Supply-side substitution possibilities have then been assessed to consider whether they provide any additional constraints on the pricing behaviour of the hypothetical monopolist which have not been captured in the demand-side analysis. In this assessment, supply-side substitution will be considered as a low-cost form of entry which could take place within a relatively short period of time. That is, for supply side substitution to be relevant, there would need to be additional competitive constraints arising from entry into the supply of the service in question, from suppliers who are able to enter quickly and at low cost, by virtue of their existing position in the supply of other services.

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

2.15 A third factor that is sometimes an additional consideration is whether there exist common pricing constraints across customers, services or areas such that they should be included within the same relevant market even if demand- and supply- side substitution are not present. Failure to consider the existence of a common pricing constraint could lead to unduly narrow markets being defined.

Relevance of Existing Regulation

2.16 When defining the relevant markets at both the retail and wholesale levels Ofcom assumes that there are no regulations in place at the wholesale level that is being considered. To do otherwise would mean that the wholesale market power assessment would depend on a retail market definition that relied on a

wholesale remedy arising from the finding of wholesale market power. This would be a circular and incorrect approach to market definition. Therefore, the demand side and supply side substitution possibilities at the retail level will be considered only if they are viable in the absence of regulation at the wholesale level being considered.

Relationship between the wholesale and retail markets

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

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

Asymmetric Broadband Internet Access

2.19 There are two main retail broadband services currently available in the UK: leased lines and asymmetric broadband internet access. Leased lines are being considered as part of another market review www.ofcom.org.uk/consultations/past/llmr/llmr_review/?a=87101 This review focuses on asymmetric broadband internet access. The asymmetric nature of these services means that the maximum downstream capacity, i.e. end user receiving information, is higher than the upstream capacity, i.e. end user sending information. These services are currently provided using a number of technologies but predominantly, they are provided over DSL enabled 'metallic' telephone lines and broadband enabled cable.

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

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

Summary list of retail markets

2.20 In this chapter Ofcom will identify the following relevant retail markets:

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

Retail Markets

2.21 In defining the appropriate retail level market boundaries Ofcom has used the evidence available and taken account of the responses made to the previous two consultations. Ofcom has commenced its analysis with defining asymmetric broadband internet access services and then applied the hypothetical monopolist test to examine the scope of the relevant market. In particular, it has considered whether:

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

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

Definition of Asymmetric Broadband Internet Access

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

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

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

2.24 In Ofcom's view, it is necessary for all of these characteristics to be present simultaneously for an internet access service to be defined as broadband. Analogue and ISDN2 do not meet all of the above characteristics. Analogue fails on all three characteristics. ISDN2 fails on the basis that it is not always on and because it cannot achieve speeds greater than 64kbit/s when simultaneously providing voice services.

2.25 Ofcom currently considers that these distinguishing characteristics of broadband internet access services capture the relevant demand side distinction for UK's existing broadband internet access services. It is to this service that Ofcom has applied a 10% price increase in order to identify the boundary of the market. This analysis (set out below 2.39 to 2.42) shows that if a hypothetical monopolist were to increase its prices for asymmetric broadband internet access, insufficient customers would substitute away to other products to make the price increase unprofitable.

2.26 Following the responses to the December consultation and further analysis of the evidence available, described below, Ofcom considers that the only speed at which it can identify a break in the demand side chain of substitution for the time scale of the current review is that consistent with the step-change of the other two functionalities of being an always on and simultaneous voice and data service, i.e. faster than dial-up. However, Ofcom acknowledges that as new internet access services possessing different characteristics along with increasingly tailored high speed content are developed it may need to consider further its definition of broadband internet access services in future market reviews.

2.27 The importance to retail consumers of the three features of broadband can be seen via Oftel's residential survey of consumers' use of internet in February

2003²

(www.ofcom.org.uk/static/archive/oftel/publications/research/2003/q12intr0503.htm) When asked to name the most important perceived benefits of broadband compared to their previous narrowband service, 87% cited the faster speed, 32% the always on functionality and 30% the simultaneous internet and voice capability (Figure 6f). These three functionalities were comfortably the most important perceived benefits cited. The next most important being better quality/more accessible content cited by 17% of users.

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

2.29 Ofcom notes that this definition differs, but not practically, to that set out in the Commission's Recommendations where broadband is identified as being at speeds greater than 128kbit/s. In practice, given there are no retail services in the UK that are offered at speeds of between 64kbit/s and 128kbit/s, Ofcom's definition is equivalent to that of the Commission's. However, this need not necessarily remain the case as new services are introduced in the UK. It should be noted that, in its response to Ofcom's notification, the Commission has not disputed this definition.

2.30 BT argues that Ofcom should not rely on product characteristics to define the asymmetric broadband market as this leads to inappropriately defined narrow markets. In addition, BT argues that if Ofcom is going to use product characteristics in such a manner, consumer evidence should be presented to support Ofcom's analysis. In response, Ofcom is not relying on these characteristics to define the asymmetric broadband market. These characteristics are used by Ofcom to describe a particular service. The SSNIP has then been applied to this service and it is this service from which the economic market has been defined. The available consumer evidence is set out in detail below.

2.31 BT has also criticised Ofcom for stating in the December consultation its continuing belief that content, only practically accessible via broadband, will become available in the next 18-24 months. In response, Ofcom has only stated that it recognises that unique content *could* become important given that services delivered over broadband provide the user with an enhanced quality of experience that cannot be matched by narrowband. Ofcom acknowledges, however, that there is not a great deal of evidence of this at present.

² Questions relating to retail consumers perceived benefits of broadband were not asked in the most recent Oftel residential survey in August 2003.

Narrowband and Broadband Internet Access

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

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

2.34 It is likely that customers who were the early adopters of broadband Internet access services would have a higher willingness to pay for the higher functionality on offer compared to the broadband Internet access customers who are now taking up this service. However, this is not to say that later adopters do not have a sufficiently high willingness to pay for broadband Internet access services to mean that a hypothetical monopolist in the supply of broadband Internet access would be unable to profitably increase its prices. As consumers experience broadband and as broadband content develops, it is likely that later adopters' willingness to pay will increase, meaning that a hypothetical monopolist will be more likely to profitably increase its prices. This is an area where Ofcom has collected additional evidence since the publication of the Notification. This evidence is based on small sample sizes and as such care should be taken in its interpretation. However, the survey evidence shows some indication that some of the most recent adopters place a higher value than more experienced users on not having to dial-up and simultaneous use of phone and the internet, at least compared to initial expectations. This may support the assertion above that later adopters' willingness to pay will increase. However, this can only be treated as indicative.³

2.35 Such likely changes in broadband customer valuation would make the narrowband and broadband Internet access markets progressively more distinct over the period of this review. A hypothetical monopolist who provides broadband products will then be in a progressively better position to retain its customers following a SSNIP, since the value customers are likely to attach to its products

³ Ofcom residential research, November 2003

will increasingly exceed the differential between the competitive price levels of narrowband and broadband (plus the SSNIP). It is likely that a consumer's valuation of broadband will be greater after experiencing what it has to offer compared to the valuation of broadband before using the product. In other words, customers are likely to become so used to the quality and services of broadband that they will be increasingly unlikely to switch to narrowband or other services if a hypothetical monopolist raises the price of broadband. Thus, broadband Internet access is increasingly likely to constitute a distinct economic market.

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

Current Market Information and the SSNIP Test

2.37 In the previous consultations, Ofcom analysed current broadband retail prices and conducted the SSNIP test with respect to the claimed switching behaviour of current broadband customers (and thus their current valuations of broadband services). Ofcom considered that the results of this analysis are both less salient than the forward looking considerations mentioned above such that they are likely to be suggestive rather than conclusive regarding the relevant market definitions in this review.

Application of the SSNIP test

2.38 Ofcom estimated that the majority of broadband customers have migrated from the various types of available narrowband internet access. Results from Ofcom's August 2003 internet usage quarterly survey www.ofcom.org.uk/static/archive/oftel/publications/research/2003/q14intres1003.pdf showed that approximately 45% of residential broadband users had upgraded from a narrowband unmetered package.

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

2.40 Ofcom thus considers that the closest demand side retail substitute to broadband internet access is likely to be unmetered narrowband internet access. Given this, it would be useful to have evidence on the extent to which changes in the relative competitive prices of broadband and narrowband internet access

affect the quantities demanded of the two services. Such information would allow the relevant cross price elasticities to be calculated.

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

Responses to the December consultation on the estimation of own price elasticities

2.42 BT provided, in its response to the April consultation, an econometric study, conducted by John Nankervis of the University of Surrey. BT has provided a further econometric study. In this study Nankervis extends the models previously considered to allow for the effect of advertising. The study produces slightly reduced figures for the ADSL price elasticity. However, in order for the study to be complete, it should also include cable and narrowband internet access to allow cross-price elasticities to be estimated. However, due to the lack of significant relative price changes this has not been possible. Therefore, Ofcom continues to believe that it is not appropriate to rely on this study for defining the relevant product market in this review.

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

Customer Survey Evidence

2.44 Whilst broadband prices do allow consideration of observed market data, the information Ofcom has from customer surveys relates to claimed behaviour of customers who are asked hypothetical questions about the willingness to pay for internet access services given hypothetical price rises. Given the hypothetical nature of the questions asked, therefore, it is important to interpret the conclusions of the surveys with care. In general, experience shows that when asked hypothetical questions, customers tend to overestimate the extent to which they will take actions, i.e. such as switching away from a supplier in response to a price rise. Therefore, consumer survey evidence based on hypothetical

questions may be useful in indicating the maximum extent to which consumers will react to different events.

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

2.46 Given the fluid nature of the market with migration from narrowband services accelerating, it would also be relevant to consider the effect of a broadband SSNIP above competitive levels on narrowband internet access customers that are considering whether to upgrade to broadband internet access at current prices. Ofcom sought in its internet usage quarterly surveys (May 2003) to capture evidence relating to the potential effect of a broadband SSNIP above the competitive level on both existing broadband customers and narrowband customers likely to upgrade to broadband at current prices. However, as explained below, Ofcom does not consider that it yet possesses robust enough information relating to potential broadband customers that it can currently rely on these findings within its analysis of the potential affect of a broadband SSNIP. This is due to the "double-hypothetical" nature of these survey questions. These are the "follow-up" hypothetical SSNIP test questions to customers who had stated that they were interested in taking a broadband service at current prices (but hadn't yet done so). This is explained further below.

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

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

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

2.50 As set out above, an existing customer may have a higher willingness to pay due to the fact that such a customer will have experienced the product and it is only after experiencing broadband that the value of broadband to the customer becomes clear. On the other hand, the potential customer has yet to experience broadband and does not fully understand the benefits that it will bring so this customer's willingness to pay does not fully reflect what it would be after the good has been experienced.

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

2.51 In response to the December consultation, BT highlighted the error margins quoted in Ofcom's data were those resulting from simple random sampling whereas Ofcom's surveys use multi-stage clustered sampling. As such BT suggests that the true error range is half as large again.

2.52 BT, via consultants Millward Brown, further suggests that the sample size of users of the internet employed by Ofcom would need to be at least four times larger to return survey evidence that they believe would meet the evidential standards thus far found acceptable by the Competition Appeals Tribunal. BT, while not 'especially criticising' Ofcom's surveys, has also raised concerns about the robustness of quota sampling versus simple random probability sampling.

Ofcom response

2.53 In the December consultation Ofcom agreed with BT that the sample may be subject to larger error margins than the 2-3% stated. However, Ofcom also stated that to quantify the extent of any additional error would require large amounts of data to validate the sample. Without such data the true level of the error margins cannot easily be confirmed. BT suggested that these tests should have been conducted. Given the amount of weight Ofcom has placed on the survey information, it considers that the considerable further expense which would have been necessary to pursue BT's suggestion could not be justified.

SSNIP test based on consumer survey information

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

Residential broadband SSNIP test

2.55 Ofcom's customer survey information relating to residential customers and their willingness to pay for broadband services relates from August 2003 can be found at

www.ofcom.org.uk/static/archive/oftel/publications/research/2003/q14intres1003.pdf

2.56 Oftel's August 2003 survey found that 11% of consumers have claimed that they would substitute away from broadband services given a 10% hypothetical price rise. This comprises 10% of current broadband internet access decision makers who claimed that they would switch to a narrowband internet access service, and a proportionate allocation for of the 4% of customers who said they did not know⁴ what they would do. Over four in five (85%) of broadband consumers claimed that they would continue to use a broadband package⁵.

2.57 However, 11% of consumers switching away is likely to be an overestimation on two main counts. This is for two main reasons. Firstly, the data may include some income effects⁶ which, given the current data, Ofcom is unable to isolate and exclude. As explained above, for the purposes of market definition

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

⁵ The results pertaining to this subset of residential consumers surveyed (a base of 193) are subject to an error margin of approximately +/- 6-10%.

⁶ Income effects are the effects on consumption that result from a change in income i.e. when income reduces consumption drops. In assessing the extent of switching in response to a price rise for the purposes of market definition, Ofcom is only interested in the substitution effect of the price rise, not the income effect.

it is substitution effects that are of interest. Secondly, the data is based on customer survey evidence, derived from the asking of hypothetical questions and so consumers are likely to over estimate the amount of switching that will happen in practice. Ofcom agrees with Professor Colli⁷ns that claimed switching behaviour is likely to over estimate the actual amount of switching that would be experienced in reality following the conjectured price rise. Therefore, Ofcom considers that the survey evidence indicates that the actual amount of switching following a 10% rise in broadband prices would be lower than 11%.

2.58 As explained earlier, the important question underlying the profitability of the SSNIP is the extent of any loss of net revenue less the marginal costs of provision saved. This is assessed through calculation of the critical loss – the percentage reduction in demand for which the SSNIP leaves profits unaffected. So a loss of demand which is greater than the critical loss makes the SSNIP unprofitable. This market review considers providers of asymmetric broadband services. In order to estimate the marginal cost of supplying an asymmetric broadband internet access retail customer, Ofcom has used information relating to the costs of providing end to end broadband internet access. These marginal costs include relevant wholesale costs and these marginal costs should be added to those associated with backhaul, broadband conveyance, IP conveyance, aggregate link (ISP delivery), internet connection costs and ISP service and marketing costs (i.e. retailing costs). To these costs is added VAT to ensure that the critical loss analysis is carried out on a comparable basis with the retail price data used.

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

2.60 The critical loss is calculated as $-s/(1+s-\alpha)$ (see Annex A for the derivation of this) where s is the SSNIP (which Ofcom assumes to be 10%) and α is the ratio of the marginal cost to the current price (i.e. the price before the SSNIP, here assumed to be £25 per month (including VAT); the weighted average rental charge cited in Annex A). Ofcom has calculated critical loss values according to the methodology set out in Annex A.

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

⁷ Who responded, on behalf of BT, to the April and December Consultations.

Business broadband current SSNIP test

2.62 Oftel's most recent customer survey information relating to business customers and their willingness to pay for broadband services relates to August 2003 and can be found at:
www.ofcom.org.uk/static/archive/oftel/publications/research/2003/q14intbus1003.pdf

2.63 When the SMEs currently purchasing broadband internet access were asked whether they would continue to take their current service or a different variety of broadband access given a 10% price rise across broadband services, the overwhelming majority, 81%⁸, said that they would retain a broadband service. The survey found that around 13% of consumers have claimed that they would substitute away from broadband services given a 10% hypothetical price rise. This comprises 4% of business customers that positively stated that they would switch from a broadband service to a narrowband service, 7% that said that they would look for a cheaper option/ compare prices and 1%⁹, a proportionate allocation of the 7% of customers did not know what they would do given the conjectured price rise.

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

⁸ Within this 81% figure, 18% of SMEs said that they would switch to another high speed internet access method (i.e. non-DSL or cable broadband) such as leased lines or satellite. It should be noted that when asking this conjectured price rise question regarding a 10% increase relating to all broadband services, there is the potential that respondents did not make the link between the all-broadband price rise and these non-DSL or cable broadband technologies. These other broadband technologies would also experience the SSNIP-type price rise, although Ofcom has no way of factoring this potential issue into the present analysis. Ofcom does however note that, as BT itself suggests in its response, that as Ofcom's definition of broadband now tallies with the general marketing of UK "broadband" services in terms of speeds beyond dial-up, both business and residential customers answering the price rise conjecture question would be quite likely to understand where broadband speeds start.

⁹ 81% of consumers claimed that they would retain a broadband internet access service. Extrapolating this proportion to the 7% of "don't know" respondents would suggest that around 6% of these are likely to retain a broadband service given the hypothetical price rise.

2.65 The bespoke nature of the business broadband internet access services being considered here means that the identification of a representative broadband business service price is difficult. It is therefore not straightforward to carry out pricing comparisons with business narrowband packages. Ofcom considers that, in these circumstances, customer survey average spend on broadband internet access services is the best available estimate of a representative price. Ofcom considers that the same difficulties hold when estimating a marginal cost for asymmetric broadband retail provision to SMEs. In the absence of more disaggregated information in terms of exact customer packages, coupled with the assumption made in the present analysis that current prices are competitively set, Ofcom considers the best estimate of the critical loss range for SMEs to be the same as the range it estimated for residential customers.

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

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

2.67 BT implies that the results used in the SSNIP test are optimistic and suggest the possibility of the critical loss level being reached – 19%. In response, Ofcom would point out that the December consultation document states that the results from the SSNIP test are likely to be more suggestive than conclusive regarding the definitions in the review – (paragraph 2.49) and also states that Ofcom does not consider that it yet possesses robust enough information relating to potential broadband customers that it can rely on these findings within its analysis of the potential effect of a broadband SSNIP. However, the survey evidence is used to suggest that there is a separate market for broadband based on the 11% of residential consumers that would switch away following a 10% price increase – the critical loss range being between 14% and 19%.

2.68 However, while taking into consideration the effects of over-estimation of switching behaviour, the effects of sampling on error margins and the possibility that these may rise – it is possible that the level of switching may in fact reach the critical loss range. On a forward looking basis, Ofcom expects the willingness to pay for broadband to increase. This is a further reason why it is necessary to take care when interpreting the results of the SSNIP test that uses data on current willingness to pay. However, given that a contemporary SSNIP test is unlikely to be conclusive for above mentioned reasons, Ofcom considers it

appropriate not to carry out more a resource intensive, high cost detailed re-examination of these issues.

2.69 BT expressed concerns that Ofcom did not address BT's issue relating to the extent to which new broadband users may be more (or less) sensitive to price changes than early adopters. In response, Ofcom would point to paragraphs 2.46 and 2.64 of the December consultation document.

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

2.70 BT argues that it is inappropriate for Ofcom to exclude income effects from the critical loss analysis. In principle, Ofcom disagrees. The object of the SSNIP test is to identify substitutes to the products that undergo the hypothetical price increase. As such, the only effects that are of interest in identifying substitutes are the substitution effects. The constraints emanating from the income effects are of relevance when assessing the extent to which an operator has SMP in a market. The income effects do not inform the identification of constraining substitutes when undertaking the hypothetical monopolist test but do inform the extent to which an operator is constrained in its ability to raise prices. However, since it is likely that income effects will be small in this case and because it is not practically possible to remove the income effects from the analysis, the numbers reported by Ofcom include income effects.

2.71 BT further argues that Ofcom, when carrying out its SSNIP analysis, has used inconsistent time periods. BT argues that the SSNIP is a short-run test of market power and, as such, the appropriate cost measure is short run avoidable costs. This is contrary to the cost measure used by Ofcom, which is long-run incremental costs (LRIC). A further argument proposed by BT is that Ofcom has erroneously included historic sunk costs in the critical loss analysis and that the correct treatment of these costs within this type of analysis is to exclude them as these are not forward looking.

2.72 Ofcom disagrees. First of all, the SSNIP test is not necessarily a short-run test. Ofcom agrees that the relevant time period for the SSNIP test is "non-

transitory”, which is generally interpreted as at least one year. However, it is not “up to two years” as argued by BT. The use of short-run avoidable costs would imply that the investment decisions made to deliver asymmetric broadband internet access were made over the short term. Ofcom does not believe this to be the case and that such decisions are made over the longer term.

2.73 The use of LRIC reflects opportunity costs of capacity in a growing market. If some consumers switch away in response to a price increase, they free up the capacity previously used to supply them. This capacity can be made available to new consumers that are taking the service in the growing market, thus avoiding the need for the operator to acquire new capacity to supply those consumers. These avoided capacity costs represent the proper economic measure of the costs saved when consumers switch in a growing market. These costs are equal to the long run incremental costs of supplying those consumers.

2.74 BT also argues that the cost-price ratio used by Ofcom in the hypothetical monopolist test implies that there are few economies of scale available to an operator in this market, which contradicts Ofcom’s analysis of SMP set out in Chapter 3. Ofcom disagrees. It is relevant that the cost-price ratios reported here refer to an end to end retail product, as it is the retail market that is currently being defined, while the SMP analysis is carried out in reference to BT’s operation in the wholesale asymmetric broadband internet access market. The SMP analysis identifies the main source of economies of scale available to BT (and the cable operators) as primarily being in the provision of DSLAMs and backhaul. Therefore, the cost price ratio at the wholesale level will be lower than at the retail level. Even though this may be high in absolute terms, this does not necessarily imply that economies of scale and scope are insignificant.

Supply side substitution

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

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

Conclusion on narrowband and broadband

2.77 Ofcom has considered a range of indicators in determining the extent to which narrowband internet access is a substitute for broadband internet access.

It notes that the 3 features of broadband set out in paragraph 2.23 provide for a clear distinction from narrowband and that those features are frequently highlighted in marketing of broadband by the major players. Moreover, there is an argument that broadband is an 'experienced' good and that it can be expected to become increasingly differentiated from narrowband over the period of this review. Ofcom has also considered consumer survey evidence to inform its decision. However, because of the nascent and dynamic nature of these services, Ofcom believes that care should be taken when interpreting the results of these surveys and as such does not place undue weight on them in reaching its conclusions. While none of these arguments is definitive on its own, they all lead in the same direction.

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

2.79 Supply side substitution at the retail level is not relevant to this market review, because it would not provide a constraint on suppliers of wholesale broadband services. Therefore, Ofcom currently considers that broadband internet access services constitute a separate and distinct economic market from narrowband internet access and other services. This will remain the case for the time period relevant to this review.

Fixed Broadband and Mobile Internet Access

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

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

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

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

Symmetric and Asymmetric Broadband Internet Access

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

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

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

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

absence of better information, it is not unreasonable to assume that there are similar costs of providing asymmetric internet access using cable technology and ADSL.

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

2.88 In order to satisfy the criterion of non-discrimination, Ofcom determined: www.ofcom.org.uk/static/archive/oftel/publications/broadband/llu/shac1200.htm that LLU shared access charge, which is paid by ADSL providers, should not include any common costs associated with the access network. In contrast, the charge for fully unbundled local loops, which is paid by SDSL providers, must pick-up the common costs associated with the access network. Thus, the regulated charge of shared access can be compared to the regulated charge of a fully unbundled local loop to estimate the magnitude of cost difference when using ADSL and SDSL technology. A fully unbundled local loop is roughly 130% more expensive than shared access; the respective LLU annual line rentals are £53 and £122. Common costs included in the SDSL access charge are the main reason for this difference in cost.

2.89 Ofcom notes the potential for voice services to be provided over broadband (VOB) in unison with internet access using an ADSL based service. This might in the future have the potential to remove the cost difference between the provision of ADSL and SDSL internet access based services in that the common line costs associated with the SDSL based service would equally apply to an ADSL based service in the absence of their recovery via the customer taking a PSTN service. However, in order for this potential situation to be relevant, VOB must be considered as an effective demand side substitute by retail customers to PSTN voice services. Ofcom does not consider that it is likely that this will happen during the time period of this market review such that this potential issue is not relevant to the current analysis. VOB services have, as yet, insignificant take up such that they are not likely to constitute an effective retail substitute to PSTN voice calls over the next two years.

2.90 In addition to the difference in costs of providing asymmetric and symmetric internet access services, they are also likely to be used by different customers for different purposes. For example, asymmetric access may be preferred over

symmetric access because the customer does not have high upload requirements and so is unwilling to pay the price premium for symmetric services. In fact, a customer survey conducted for Ofcom in October 2002 suggests that many UK (residential) broadband customers of internet access do not value the additional functionality of a symmetric service. Only 23% of residential broadband customers said that they would pay any additional charges to obtain a symmetric service with double their upload speed. This suggests that the remainder would be unlikely to switch to symmetric services given a 10% rise in the price of asymmetric services.

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

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

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

2.94 The Recommendation and Explanatory Memorandum do not discuss substitution between asymmetric and symmetric products. It appears that the Commission's market definition of 'wholesale broadband access' includes both symmetric and asymmetric broadband internet access services. However, Ofcom considers that it is appropriate in the UK to define symmetric broadband internet access in a separate market to asymmetric broadband internet access for the period covered by this market review. This is due to the facts discussed above on relative costs of asymmetric and symmetric services. In its response to Ofcom's notification, the Commission has stated that this "...analysis is not inconsistent with the methodology set out in the Recommendation and in the Commission's guidelines on market analysis and the assessment of significant power. "

Residential and Business Broadband Internet Access

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

2.96 Currently, there are different asymmetric broadband internet access products targeted at residential and business customers. Ofcom recognises, however, that there may be some overlap in the types of products bought by residential and business customers e.g. some business customers such as S¹⁰oHo users may find that a highly contended residential service is more suited to their needs.

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

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

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

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

2.101 Although currently there are only a few products supplied in the possible product space, it may be that suppliers will not be able to segment the market profitably between residential and business customers over time. The levels of

¹⁰ Small Office Home Office

service and speed demanded by residential customers are likely to increase during the period covered by the market review, as residential broadband internet access customers increasingly realise the advantages of higher internet access speeds and as more tailored broadband content is made available to them which benefits greatly from being supplied over a better quality broadband internet access product. Thus, over time, some residential customers are less likely to tolerate delays and are more likely to seek increasing levels of service and speed. In this scenario, new residential products are likely to become available which offer the levels of service and speed closer to the current business products.

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

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

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

2.105 Of the respondents that commented on this part of the analysis there was general agreement with Ofcom's approach. For example, BT agree with Ofcom that it makes sense to consider residential and business customers together.

2.106 In conclusion, an argument can be made for separate markets on the demand side between residential and business customers. However, the forward looking nature of the market definition appropriate to this market review suggests the case for the broader market definition, because a chain of substitution may develop on the demand side. Given the early stage in the development of these markets, the probability of maturing demand for broadband internet access products and the likelihood of new product innovation, Ofcom considers that on

balance, it is more appropriate to define a broader rather than a narrower retail market for asymmetric broadband internet access which includes both residential and business customers. This is consistent with the Commission's Recommendation which does not define separate markets for business and residential broadband markets.

Retail Geographic Markets

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

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

2.109 However, in this analysis it is more relevant to consider whether there exists a common pricing constraint in determining the appropriate geographic market boundaries. For a common pricing constraint to exist requires:

- a) nationally averaged prices for the operator that operates across all areas; and
- b) sufficiently high market for the national operator in those areas where it faces competition such that it takes switching behaviour in those areas into account when setting its prices.

BT's charges for retail asymmetric broadband access are geographically uniform with the exception of the Hull Area where BT does not provide such services. BT's decision to set national tariffs for its broadband internet access services is its own commercial decision (recognising that there may be some external regulatory constraints), as are those of ntl and Telewest to set geographically uniform broadband access prices in their franchise areas. It is Ofcom's view that both of the conditions for a common pricing constraint are satisfied in the case of broadband internet access. Details of BT's market shares in the cable areas are presented in Chapter 3.

2.110 As set out in Ofcom's approach to market definition, the relevant economic markets are defined absent regulation and this is the approach that Ofcom has adopted in this market review. However, BT, in its response has argued that its decision to set nationally averaged tariffs for its broadband internet access services is a result of regulatory obligations in other markets,

such as residential calls and access, where BT is under a Universal Service Obligation, and the LLU market as well as public pressure not to disadvantage outlying areas of high costs. BT argues that these influences limit its ability to set geographically de-averaged prices in adjacent markets. Therefore, BT argue that it is constrained in its ability to set geographically de-averaged prices even in retail markets where there is no regulatory obligation to do so.

2.111 BT's line of argument could be used to justify a single market that includes both broadband and narrowband services as it is stating that pricing and regulation in one market is a constraint on pricing in another market. However, whilst regulation may influence a firm's commercial decision this does not necessarily mean that in itself is sufficient to constrain prices to a competitive level such that a broad market definition is appropriate.

In addition, although the economic markets should be defined absent regulation, Ofcom does not consider BT's arguments above to be relevant in the consideration of geographic market definition since nationally averaged tariffs resulting from BT's universal service obligations, to the extent they have any effect, are exogenous factors as they are obligations not resulting from a finding of SMP.¹¹

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

2.113 This view is further supported by an analysis of BT's, cable operators' and ISPs' pricing policies. This shows that all operators under consideration price their offerings on a national basis. That is, where operators offer a service (with cable companies being limited to the geographic reach of their product offerings) that service is priced on a nationally averaged basis. This need not necessarily be the case and it could be argued that the expectation would be that operators would charge geographically de-averaged prices to reflect the differential competitive conditions discussed above and below. Therefore, this pricing data

¹¹Ofcom has designated BT as having Universal Service Obligations for the provision of certain services and facilities. In these facilities and services, it has imposed conditions where relevant, that require BT to offer prices that are uniform throughout the UK. These conditions are designed to implement the Secretary of State's Notice on Universal Service which sets out such a requirement. Similar conditions apply to Kingston Communications in the Hull area.

indicates that the appropriate geographic market definition is a national market. Moreover, all operators advertise on a national basis, providing further support to the conclusion that the market is national.

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

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

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

2.116 All of the points above suggest that there exists a national market in the provision of broadband Internet access. Given that competition is continuing to develop and that this development is not uniform across geographic areas, it could be expected that operators' pricing policies might change resulting in divergence of pricing on a geographic basis to reflect the differing levels of competition. However, it is far from certain that this will happen within the timeframe of this market review and it would be premature of Ofcom to define local geographic markets faced with this lack of definitive evidence that such markets exist.

2.117 Ofcom's approach of defining a national market, while recognising the local characteristics that are present is also consistent with the Competition Commission's report into the proposed merger of NTL and Cable and Wireless Communications (CWC) in 2000.¹² In its report, the Competition Commission explicitly considered a hypothetical example where a national operator had a 20% market share in cable areas and a 100% market share in the rest of the country.

¹² "NTL Incorporated and Cable & Wireless Communications Plc: A report on the proposed acquisition", Competition Commission, 22 March 2000.

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

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

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

2.120 The Competition Commission's conclusions in respect of this specific merger have been reached subsequent to a detailed examination of that particular case and do not have a direct read across into the geographic market currently being considered. Nevertheless, the case does offer some support for the approach set out by Ofcom.

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

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

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

constraints within the markets and where the possible remedies would likely be ineffective. In addition, an analysis of other operators' retail pricing policies indicates that a national market exists.

2.124 BT further comments that it is not open to Ofcom to define a national market with local characteristics. Ofcom believes BT has misunderstood its proposal which is to define a national market as it better reflects the competitive conditions than segmentation into distinct geographic areas. It is on this basis that it has formally notified the European Commission. However, Ofcom believes that in defining a national market, it is important to acknowledge that competitive conditions are not absolutely homogeneous throughout the country and that there is evidence of local characteristics being present. Ofcom has taken these local characteristics into account in assessing the degree of market power held by BT, principally in its review of market shares and countervailing buyer power. This is discussed in Chapter 3.

2.125 BT adds that it believes that sub-national markets should be defined. Ofcom disagrees for the reasons set out above. Local geographic markets would not accurately capture the competitive conditions that are present and Ofcom believes that there is insufficient evidence at this time to show that local geographic markets will develop over the period of this review. However, as set out above, Ofcom also recognises that the national geographic market definition also does not accurately capture the competitive conditions. However, Ofcom believes this market definition to be supported more by the available evidence and hence more robust than defining the geographic extent of the markets on a local basis.

2.126 BT comments that Ofcom has not taken into account the cable market shares when defining the geographic market. Ofcom disagrees. The Notification to the Commission explicitly included a reference to the relevant market shares in the cable areas and this is repeated above. This information is the main reason why a national market does not fully capture the competitive conditions in the market and why Ofcom believes it is important to recognise the local characteristics that are present. In addition, the cable shares are also a relevant consideration in the assessment of SMP and this is included in Chapter 3. But for the reasons set out above, this does not lead Ofcom to conclude that there are separate geographic markets.

2.127 A respondent has commented that Ofcom did not fully set out detailed demand and supply side substitution analysis and that Ofcom relies on the presence of a common pricing constraint. Moreover, it argues that if the geographic market were defined using demand and supply side analysis the conclusion would have been to identify local markets.

2.128 Ofcom agrees that the geographic market was not defined solely by reference to demand and supply side substitution. Indeed, limiting the market definition exercise to demand and supply side substitution may have the effect of

narrowing the geographic scope of the market due to the limited ability of consumers and alternative providers to demand or supply side substitute. In general, in the telecommunications sector, defining a market solely by reference to demand side and supply side substitution tends to lead to unduly narrow markets being defined.

2.129 Defining the market in the way suggested by this respondent would fail to take into account the presence of any common pricing constraint that may exist, which potentially could mean that the geographic market would be mis-specified. Ofcom believes that it is appropriate to define the geographic boundaries of the relevant markets with reference to the presence of a common pricing constraint.

2.130 In addition, the respondent has questioned the relevance of BT's national pricing policy. It argues that due to the differential geographic presence of DSL and cable, the inclusion of cable in the market constrains DSL as this is where competitive pressures are greatest. Therefore, consumers in non-cable areas may be protected to some extent by the competitive conditions where there are both DSL and cable as the DSL operator will seek to maximise profits across all consumer groups. However, the same cannot be said for consumers in cable areas where competition is greater but where the DSL operator will be pricing above the competitive level (as it maximises profits across cable and non-cable areas). Therefore, if the geographic market were defined from the cable perspective there would be separate local markets for cable areas and non-cable areas because consumers in cable areas are not protected by competitive conditions in non-cable areas.

2.131 Ofcom agrees with this respondent to the extent that where there is a common pricing constraint and a national operator offers a nationally averaged price, consumers in cable areas may not benefit to the same extent as consumers in non-cable areas. In addition, if DSL prices were de-averaged then this would be likely to affect DSL prices in cable areas which may impact on the competitive pressures that exist in cable areas. However, as set out above, Ofcom considered that local market definitions do not accurately capture the competitive constraints in the market. Given the evidence available and the existence of a common pricing constraint, Ofcom believes that it is appropriate to define a national geographic market.

2.132 The respondent further argues that Ofcom should not have referred to the Competition Commission investigation into the ntl and Cable & Wireless merger. This is because, in its view, the Competition Commission asked an incorrect question and Ofcom has repeated the Competition Commission's mistake. The Competition Commission asked and answered the question: "To what extent can pay-TV be regarded as operating in a national or local market?". The respondent states that the correct question that should have been asked was: "To what extent can *cable* providers of pay TV be regarded as operating in a national or local market?".

2.133 Ofcom disagrees and believes that the formulation of the Competition Commission's question was correct. To ask the question in the manner suggested by the respondent would mean that the analysis would rely on the method of provision (i.e. by cable) rather than the end service which is being provided (i.e. pay TV in the Competition Commission investigation, asymmetric broadband internet access in this market review).

2.134 In the Hull Area, the only provider of retail fixed broadband internet access is Kingston. Therefore, Kingston is isolated from the competitive constraint deriving from the operation of BT's geographical averaging described above because BT is not currently competing in the Hull Area.

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

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

2.137 Kingston disagrees that the Hull area constitutes a separate economic market. Kingston argues that it has to pay due regard to events in the rest of the UK, in a similar way to other operators in the asymmetric broadband internet access market. Ofcom agrees with Kingston that it needs to pay regard to events in the rest of the UK to ensure that its customers remain satisfied with its service. However, Ofcom does not believe that this is a sufficient constraint to prevent a hypothetical monopolist in the Hull area from carrying out a 10% SSNIP. In addition, neither BT nor either of the cable operators which offer common prices across the rest of the UK currently offers a broadband internet access service in the Hull area. Therefore, the Hull area is not subject to the common pricing constraint that is present throughout the rest of the UK. This indicates that there is a separate geographic market in the Hull area.

2.138 Sky believes that Ofcom has treated the Hull area and the cable areas in an inconsistent manner and that the approach adopted for the Hull area should have been applied to the areas where cable operators offer a service. Ofcom disagrees. There is no common pricing constraint between the Hull area and the rest of the UK, whereas there is between the cable areas and non-cable areas.

2.139 Therefore, Ofcom currently considers that there are two distinct geographic markets for retail asymmetric broadband internet access services, the UK excluding the Hull Area; and the Hull Area.

Summary list of retail markets

2.140 In conclusion, Ofcom has identified the following relevant retail markets in this chapter:

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

Wholesale Markets

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

Summary list of markets

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

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

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

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

ADSL and Cable Based Wholesale Services

2.145 This section considers whether ADSL and cable based wholesale services are in the same market. Ofcom recognises that cable operators do not currently offer a wholesale broadband product. Therefore, cable is unlikely to directly constrain the pricing behaviour of an ADSL provider at the wholesale level. This is because the Altnets¹³ cannot substitute from ADSL wholesale products into cable wholesale products in response to a price rise of an ADSL based wholesale broadband product. However, in defining the relevant wholesale markets for the purposes of this market review, it is appropriate (for the reasons set out at the beginning of this chapter in paragraph 2.16) to define the relevant markets, at the retail and wholesale level, in the absence of regulation.

2.146 In the absence of regulation, it is quite possible that a wholesale product would not be made available at all (although the scenarios where intermediate and wholesale products are made available are considered below). Cable companies do not currently offer a wholesale product, and it is questionable whether BT would do so. However, it is true that BT had provided a DataStream service prior to the ATM Direction that required BT to provide a new version of this product on a non-discriminatory basis. Thus, it might be argued that in the absence of regulation, a wholesale product would have been provided. However, in such a scenario, BT would have no obligation to continue to make such a product available or to ensure that it was commercially viable. Moreover, it is unclear whether BT would have made such a wholesale product available in the absence of the potential for a regulatory obligation being imposed on it. For both of these reasons, it would be inappropriate to conduct the market analysis on the assumption that BT would provide a viable wholesale product in the absence of regulation.

2.147 In the absence of wholesale products there would clearly be no direct competition between ADSL and cable at the wholesale level. However, it is still possible to consider the question of market definition at the wholesale level because competition would take place further downstream at the intermediate (e.g. IPStream + BT Central) and retail levels. The relevant question is whether a hypothetical monopolist of a wholesale service could profitably and sustainably raise prices by a small but significant amount. Retail prices can be regarded as being comprised of a number of input costs and one of these input costs can be characterised as the cost of a wholesale service. If the charge for this wholesale service were to increase, and all other elements of the retail service were priced at the competitive level, this would translate into a price increase at the retail level.

2.148 This means that, for example, a 10% price increase for the ADSL wholesale service would translate into a price increase (but of less than 10%) for the ADSL based broadband internet access product at the retail level. This retail

¹³ Alternative Network Operators

price increase would be less than 10% because the wholesale element is only part of the initial retail price. Using data available from the regulated broadband access markets, Ofcom considers that wholesale costs constitute around approximately 45% of the retail price of ADSL based broadband. Therefore, a 10% price increase of the wholesale element would translate into a 4.5% price increase at the retail level.

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

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

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

2.152 Such a price increase would lead to some ISPs switching to cable providers at the intermediate level. While this would involve end users switching their means of delivery, this might not constitute much of an obstacle to an ISP wishing to switch end users between DSL and cable (or the other way around). Ofcom is of the view that an approximate 8% increase at the intermediate level is likely to lead to sufficient numbers of ISPs switching from

ADSL to cable based intermediate products to render the wholesale price increase unprofitable. Therefore, in this unregulated situation, cable would be an indirect constraint on the behaviour of the ADSL based intermediate service provider to such an extent that the appropriate wholesale market definition would include both ADSL and cable providers.

2.153 In principle, absent regulation, cable operators could offer a wholesale broadband product as well as BT. Given that the market definition exercise assumes competitive conditions and the absence of regulation, the relevant question is whether wholesale products would be offered in these circumstances, and whether a cable wholesale product would constrain the price of the ADSL wholesale product and vice versa.

2.154 Under competitive market conditions, both cable and BT would have an incentive to offer a wholesale product. In a competitive market, cable's and BT's upstream (network) and downstream (retail) divisions would each earn a normal return. Suppose that an alternative downstream operator that is more efficient than cable's or BT's own downstream arm, or that can successfully market broadband services to a wider range of customers (perhaps through greater product differentiation or combining with its own service offering such as content) were to request a wholesale product from cable or BT. Given that such an operator would be able to offer terms that exceed cable's or BT's own return, it would be able to reach a commercial agreement for wholesale broadband access.

2.155 The cost of offering a cable wholesale broadband product would be similar to that of the ADSL alternative, and the services would have similar capabilities. A cable broadband product could be made available on similar terms as the ADSL product, and purchasers of the wholesale product might be expected to substitute between them. An increase in the price of the ADSL or cable product above the competitive level would lead to purchasers switching to the alternative product. Thus, cable wholesale access and ADSL wholesale access should be included in the same product market.

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

2.157 It is also possible to analyse this issue from a slightly different perspective, by focusing on the question of whether, absent regulation at the wholesale level, BT would be in a position of market power at the retail level because of implicit leverage from the wholesale level. As before, ADSL competes with cable in the broadband internet access market at the retail level, but the underlying assumption is that absent regulation no wholesale products would be provided. In the absence of wholesale products, it might be assumed that BT's retail

market share would correspond to its current wholesale market share. That is, the overall split between DSL and cable at the retail level would be as it is currently, but BT would capture the whole DSL market share at the retail level. The question would then be whether, on the basis of these market shares and other relevant considerations, BT would be in a position of SMP at the retail level (in a market which included both DSL and cable based retail services). The analysis that is relevant to this question has been conducted in the next chapter which attempts to assess BT's wholesale market position on the basis of retail market share data and the difficulties of replicating or acquiring the underlying wholesale service in the absence of regulation. That analysis implies that BT would have market power at the retail level in the absence of regulation.

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

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

Responses to consultation

2.160 The Commission, in its response stated that Ofcom should have given greater consideration to the technical, practical and economic feasibility for cable operators to offer wholesale broadband products. The Commission's view is that evidence of a potential direct constraint should have been provided in addition to the analysis of the indirect constraint provided by substitution at the retail level. Ofcom has now considered a scenario where direct substitution takes place at the wholesale level and this is set out above.

2.161 The Commission considered it more natural for cable to be excluded from the relevant market but for the competitive constraint from cable to be brought into the analysis during the assessment of SMP. Nevertheless, the Commission found that it was not essential to resolve the point as, in its view; it would be unlikely in the circumstances considered to affect the conclusions on SMP.

2.162 The BIG has questioned whether cable is a supply side substitute for national ISPs at the wholesale level and states that the only way to have a national presence is through offering ADSL. (BIG believes Ofcom should have asked ISPs whether they would consider participating in a national market without an ADSL offering.) The BIG has suggested that it does not believe that an increase of 8% in the price of intermediate services would lead to ISPs switching between DSL and cable. It has also been suggested that Ofcom's approach to market definition in Kingston undermines the inclusion of cable in the same market as ADSL.

2.163 Moreover, BIG suggest that Ofcom should construct a product market definition test that takes into account the fact that cable is only available in some areas. Thus, it suggests that when considering a hypothetical monopolist of DSL conducting a SSNIP above the competitive level, Ofcom should consider the switching that would be expected in cable areas and whether that would be sufficient to constrain the hypothetical monopolist of DSL. The BIG and another respondent have commented that there will not be sufficient switching at the retail level in response to a 4.5% price increase in order to constrain the hypothetical monopolist and therefore argue that cable should be excluded from the product market definition..

2.164 Further, BIG have provided a sample calculation to illustrate this. BIG has made the point that as the retail market share of DSL increases relative to cable, it will become increasingly likely that a DSL wholesale price rise will be profitable as there will be more DSL customers in non-cable areas who are unable to switch. Furthermore, even where both are offered, switching costs will prevent consumers from moving between the two. The BIG cite the fact that most cable tariffs are structured to induce customers to purchase broadband as part of a bundle including telephony and TV.

2.165 Ofcom believes that BIG has not used the appropriate analytical framework to conduct the test for product market definition. The question of whether products based on DSL are constrained by those provided over cable is dependent on whether consumers are likely to view these two services as substitutes where both are available. Given that these two methods of delivering broadband internet access provide very similar or the same services suggests that consumers are likely to view them as very close substitutes such that they fall within the same product market.

2.166 Ofcom considers that the BIG's analysis is more akin to a market power type test. It basically assesses whether cable operators exert a sufficient pricing constraint on BT within the national market, such that BT is constrained to pricing at the competitive level. The BIG's analysis suggests that because cable is only available in some areas, cable operators are unable to exert a sufficient constraint on BT which implies that BT has market power. Ofcom agrees that

cable operators are not a sufficient constraint on BT. It has therefore found BT to have SMP (see chapter 3 for a full discussion of the assessment of SMP).

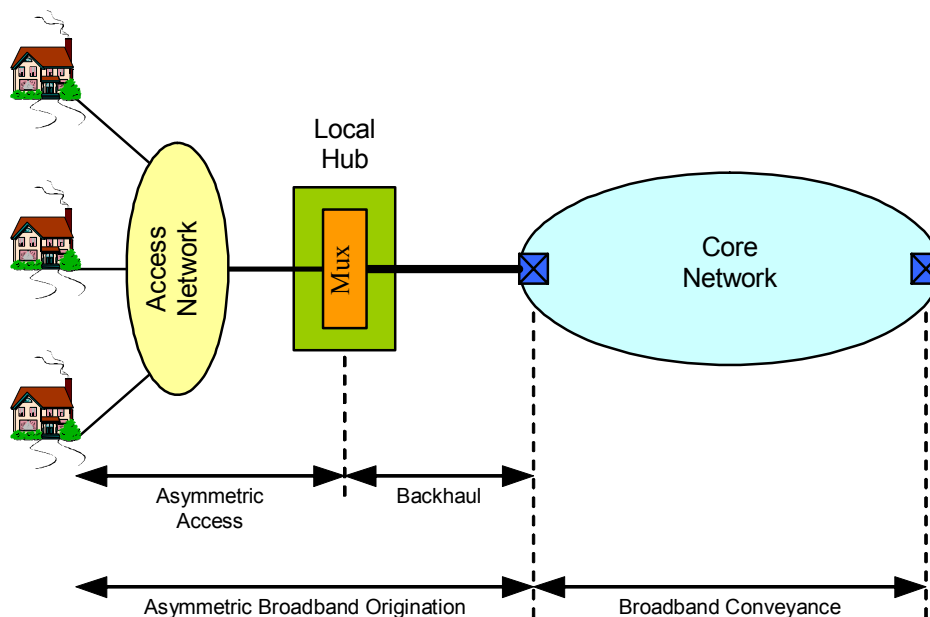
2.167 In response to the BIG’s concerns about wholesale switching between ADSL and cable, Ofcom notes that no evidence of these switching costs has been provided. Moreover this part of the argument is not key to Ofcom’s reasoning; substitution at the retail level is more relevant.

2.168 As noted above in the discussion of the retail geographic market, Ofcom does not believe that it has been inconsistent in its approach to market definition between the UK excluding the Hull area and the Hull area. This is because no common pricing constraint exists in the Hull area so it is appropriate to define the market with reference to demand side and supply side substitution. However, in the rest of the UK a common pricing constraint does exist and it would be inappropriate to exclude this from the market definition analysis. Moreover, the approach taken in defining a separate geographic market for the Hull area does not undermine the arguments for including cable within the relevant product market.

Asymmetric Broadband Origination

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

Figure 2.1



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

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

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

Responses to the consultation

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

2.174 BT argues that Ofcom’s representation of the chain of upstream market (DSL/ATM) network inputs is arbitrary. For example, where Ofcom’s chain has the DSLAM connected to the first ATM node via backhaul transmission, with

ATM transmission then leading to the broadband access service (BAS), this arrangement is not unique. In practice, in some exchanges the DSLAM is directly terminated onto the BAS. Ofcom agrees that in reality his representation of the vertical chain of upstream network inputs will not always hold and may need reconsidering in the future should a different vertical chain of upstream supply become the default. However, for the timescale of this review, Ofcom considers that the vertical chain of network inputs it outlines in this document is likely to remain in practice the way that the vast majority of DSL broadband wholesale services are configured.

2.175 Turning to the demand side analysis at the wholesale level. BT agrees with Ofcom that ATM based broadband origination services (oriented towards retail internet access) are in the same market as cable modem originated services. However, BT also argues that narrowband internet origination, PSTN “origination” and PPC services should be included in this wholesale market on the demand side. Ofcom disagrees. In defining the retail market, Ofcom took account of switching from broadband internet access to all services. This analysis led to Ofcom concluding that there is a separate market for broadband internet access at the retail level. Ofcom does not consider these alternative origination services proposed by BT to be cost effective substitutes for asymmetric broadband origination at the wholesale level.

Broadband conveyance

2.176 In deciding the scope of the broadband conveyance market Ofcom has considered recent product developments and the anticipated growth in functionality of IP networks over the next few years. Broadband conveyance is the conveyance of broadband traffic across the core network in such a way as to allow interconnecting operators to differentiate the technical characteristics of the services they offer to their ISP and other customers. DSL based broadband conveyance is the conveyance of broadband traffic beyond the parent node of the core network. On a DSL based network, there is no distinction between symmetric broadband conveyance and asymmetric broadband conveyance. This is because the symmetric or asymmetric nature of the traffic is determined at the DSLAM.¹⁴ Ofcom next considers whether broadband conveyance constitutes a separate wholesale market to asymmetric broadband origination.

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

¹⁴If the conveyance is of leased lines traffic, it is likely that the symmetric broadband conveyance will be over a different network to that of DSL traffic.

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

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

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

2.181 Ofcom thus considers that there is a single market for broadband conveyance which includes conveyance from the parent core network node to a distant node across the core network. This can be seen in Figure 2.1 above.

2.182 Given the network topology and functionality at present, broadband conveyance is a service which can primarily be delivered only via BT's ATM network. Although IP conveyance is a possible partial substitute for ATM conveyance (although currently incapable of delivering the same functionality) and the functionality deliverable by BT's IP network is likely to grow, Ofcom does not expect that the market will in practice include IP conveyance services within the lifetime of this Review. Nevertheless, if in practice IP functionality were to reach equivalent levels to ATM functionality, then IP conveyance services would logically form part of the same market.

Responses to the December Consultation

Broadband conveyance and leased lines trunk segments

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

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

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

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

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

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

2.187 However, as previously argued by Oftel in its Leased Lines Market Review, end to end SDSL (contended or uncontended) and traditional leased lines services are substitutable at the retail level, since uncontended SDSL

based leased lines offer broadly the same functionality, and these are linked to contended lines based on a chain of substitution argument.

2.188 Retail leased lines are provided using a range of wholesale inputs, in particular symmetric broadband origination and, for longer circuits, trunk segments. In essence, the technology used to deliver the retail product must be the same at both the SBO level and at the trunk level. Therefore, any switching at the trunk level between SDSL and HDSL means that the technology underpinning the SBO would also need to be switched. This means that, at the margin, changes in the price of trunk segments or broadband conveyance might influence the choice of a supplier making a decision between purchasing wholesale inputs (both core and access) that would allow it to offer contended circuits (e.g. using SDSL) vs. wholesale inputs that would enable it to offer uncontended circuits (e.g. using HDSL). Were such switching to be widespread, there would be an argument for including the two types of service in the same economic market. However, having considered this issue, Ofcom's view is that such switching is unlikely to be widespread.

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

2.190 Ofcom has additionally considered the proportion of the total cost of providing an end to end leased line that is accounted for by trunk segments. The greater this proportion is, the more likely that increases in the price of trunk segments will feed into increases in price of retail leased lines and the greater probability of switching from broadband conveyance to trunk segments. Ofcom has looked at a number of different indicators of this cost split. Any such measure is imperfect due to the extent of variety on a circuit by circuit basis, and the fact that any cost data supplied by BT will be influenced by allocation issues. Ofcom has examined information supplied by BT providing a split between, in the context of its private circuits business in 2002/03, trunk segments and symmetric broadband origination. Ofcom examined four different measures in an attempt to approximate the underlying cost split, namely revenue, total distance in km, total cost (measured as the sum of operating cost and depreciation) and mean capital employed. None of these measures is a perfect measure. Notably, the information on total cost and mean capital employed is influenced by BT's cost allocation methodologies, of which Ofcom does not have full visibility. The above caveats notwithstanding, information provided by BT suggests that, in the context of providing end-to-end leased lines, the cost of trunk segments appears to represent less than half of the total cost of providing end-to-end leased lines. Based on some measures, the proportion is significantly below one half. Given the lack of more detailed and specific information, there does not appear to be

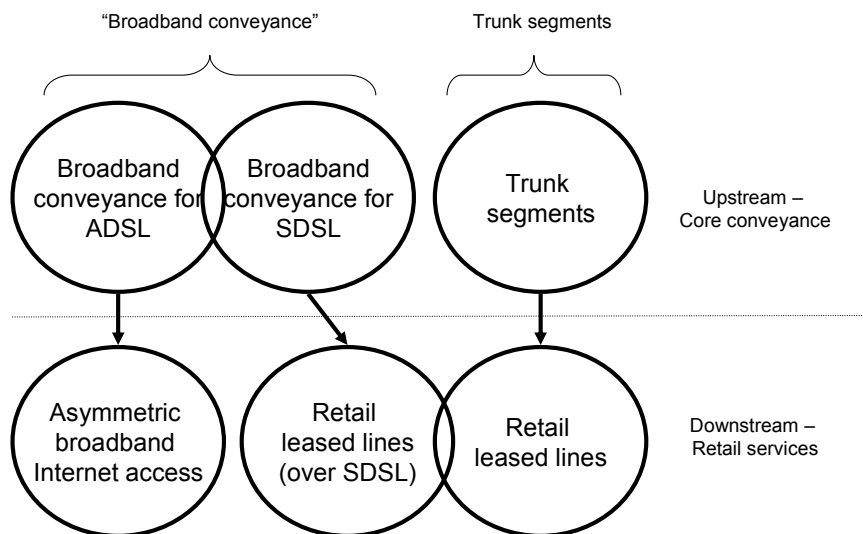
sufficient evidence on this point to be able to arrive at a single reliable estimate. It is additionally worth noting that trunk segments are typically used as an input into retail applications such as end-to-end leased lines or VPNs. Offering these types of services means that a number of (e.g. retail) costs other than those of trunk segments and symmetric broadband origination must be incurred, meaning that the proportion of *total* costs accounted for by trunk segments is likely to be low.

2.191 Increases in the price of broadband conveyance would not be constrained by trunk segments (as an input into a traditional leased lines based end-to-end solution) since the majority of broadband conveyance is used to provide asymmetric broadband Internet access. It would not be feasible for a wholesale operator providing broadband conveyance to price discriminate between sales to retail operators offering symmetric services and sales to retail operators offering asymmetric services. Trunk segments would not provide a cost effective means of providing broadband conveyance for asymmetric services. It is additionally worth pointing out that the degree of substitution would be limited further if broadband conveyance accounted for a small proportion of the total cost of providing ADSL and SDSL based services.

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

2.193 The implication of identifying distinct economic markets as has been done above is that the "core" network element of leased lines (e.g. contended leased lines offered over SDSL) that are conveyed by means of virtual paths (e.g. over ATM networks) fall within the broadband conveyance market that is analysed in this broadband market review. This is shown in the diagram below.

Figure 2.2 Core conveyance markets



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

Exclusion of intermediate services (IPStream including BT Central) from market definition.

Responses to the Consultation

2.195 UKCTA has commented that Ofcom has failed to review all the markets in the Commission's recommendations by not reviewing the market for intermediate services. Another respondent, supporting this view, has suggested that the work of the European Regulators Group (the ERG) suggests that intermediate services be included and argues that Ofcom has not explained fully why it believes these services are outside the Commission's market definition. This respondent also suggests that intermediate services are a substitute for ATM interconnection and that this will be even more relevant with the move to capacity based charging.

Ofcom's response

2.196 Ofcom made clear in the previous consultations that end-to-end resale services are not within the Commission's recommended definition. Ofcom regards the combination of IPStream and BT Central as an intermediate product which is essentially a resale product. Such products are clearly not included in the Commission's definition. This is supported by the Commission's response to Ofcom's notification:

"In line with the Recommendation, Ofcom states that the asymmetric broadband origination services include the 'wholesale services used to provide broadband internet access services to service providers (referred to as intermediate services)... Resale services such as that colloquially known as BT's IPStream (strictly BT IPStream plus BT Central) fall into the category of intermediate services".

2.197 In response to the suggestion that IPStream and DataStream are substitutes, Ofcom notes that IPStream type products cannot deliver the full functionality that is offered by DataStream. DataStream offers a significantly greater ability to control how services are dimensioned in terms of contention. It also offers the ability to vary the quality of service parameters so that the wholesale service can be used to support different end user applications. While Ofcom recognises that capacity based pricing of BT's IPStream product does offer ISPs the opportunity for some differentiation in the type of services they offer, particularly with respect to end user speeds, the product remains fundamentally unaltered and is not substitutable for DataStream. This is because capacity based charging is essentially a restructuring of the IPStream tariff structure. In the discussion of broadband conveyance above, Ofcom recognises that conveyance of broadband traffic over IP protocol could be included in the broadband conveyance market in the future (and could to a limited extent be included currently). However, it is important to note that conveyance of broadband traffic over IP is different from BT's IPStream product, which includes BT's BTCentral product and is a re-sale product to Altnets and ISPs.

Wholesale Geographic Markets

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

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

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

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

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

2.202 BT's Exchange Activate service is designed to allow local communities to obtain wholesale broadband (ADSL) services through the enabling of BT's analogue local exchanges in areas where BT has decided it is not economic to broadband enable exchanges in the absence of up-front recovery of the sunk costs involved. Exchange Activate involves the reimbursing of these investment costs to BT up front. Whilst the wholesale supply of Exchange Activate services clearly possesses a different pricing structure to the other areas of the UK where BT has decided it is commercial to roll out broadband services in the absence of up front cost recovery, Ofcom considers that this does not undermine the conclusion that the relevant geographic market is national.

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

2.204 If, absent regulation, no wholesale product is offered, the relevant geographic market definition would be that defined for the retail market, i.e. a national geographic market. If asymmetric broadband origination were offered, the only pricing information available to inform the appropriate market definition is that currently observable. BT's current uniform wholesale broadband origination pricing means that any response by BT to competitive constraints at either the retail or wholesale level in the form of lower wholesale prices would apply throughout the areas of the country where BT's access network has been broadband enabled, excluding the Hull Area. This common national pricing constraint leads Ofcom to conclude that the geographical extent of this market should be regarded as the whole of the UK excluding the Hull Area. Once more Ofcom notes that this national market exhibits local characteristics. These local

characteristics relate to the fact that BT's current two most material competitors are the cable companies whose franchise areas do not overlap, but who also set geographically uniform retail prices for asymmetric broadband internet access in their franchise areas.

Asymmetric Broadband Origination in the Hull Area

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

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

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

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

Broadband conveyance in the UK

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

2.210 As for the asymmetric broadband origination market above, if absent regulation no wholesale product is offered, the geographic market definition would be that defined for the retail market i.e. a national market. If broadband conveyance were offered, the only pricing information available to inform the

appropriate market definition is that currently observable. BT's charges for its wholesale broadband conveyance are geographically uniform. BT's decision to set national tariffs is its own commercial decision. Ntl and Telewest do not currently sell wholesale broadband conveyance services to third parties.

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

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

Summary list of markets

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

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

Forward look

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

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

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

2.216 The economic analysis carried out in this document is for the purposes of determining whether an undertaking or undertakings have SMP in the relevant market(s). It is without prejudice to any economic analysis that may be carried out in relation to any investigation pursuant to the Competition Act 1998 (relating

to the application of the Chapter I or Chapter II prohibitions or Article 81 or 82 of the EC Treaty) or the Enterprise Act 2002.

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

“...The recommendation shall identify ...markets ...the characteristics of which may be such as to justify the imposition of regulatory obligations ...without prejudice to markets that may be defined in specific cases under competition law...”

This intention is further evidenced in the European Commission’s SMP guidelines, which state:

- Paragraph 25 “... Article 15(1) of the Framework Directive makes clear that the markets to be defined by NRAs for the purpose of *ex ante* regulation are without prejudice to those defined by NCAs and by the Commission in the exercise of their respective powers under competition law in specific cases.” (This is repeated at paragraph 37.)
- Paragraph 27: “...Although NRAs and competition authorities, when examining the same issues in the same circumstances and with the same objectives, should in principle reach the same conclusions, it cannot be excluded that, given the differences outline above, and in particular the broader focus of the NRAs’ assessment, markets defined for the purposes of competition law and markets defined for the purpose of sector-specific regulation may not always be identical”.
- Paragraph 28: “...market definitions under the new regulatory framework, even in similar areas, may in some cases, be different from those markets defined by competition authorities.”

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

Chapter 3

Market Power Assessment

Market Power determinations

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

Approach used to assess Significant Market Power

3.2 Under the new Directives and section 78 of the Act, SMP has been newly defined so that it is equivalent to the competition law concept of dominance. Article 14(2) of the Framework Directive states that:

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

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

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

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

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

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

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

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

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

Summary list of SMP designations

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

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

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

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

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

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

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

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

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

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

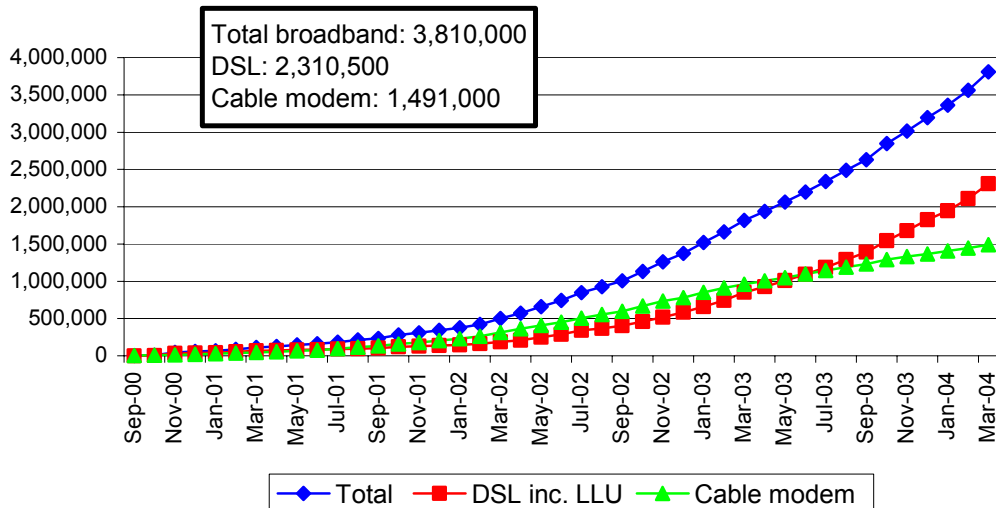
3.11 In response to the December consultation, BT comments that Ofcom has not shown that BT has SMP as it has not shown that BT is charging excessive prices or earning excessive profits. In response, Ofcom would point out that these are examples of abusive behaviour. Showing evidence of such abusive behaviour is not a necessary condition to find SMP. In other words, lack of evidence of excessive charging does not undermine the SMP finding.

3.12 The BIG commented that Ofcom has underestimated BT's SMP with the inclusion of cable in the market. Ofcom agrees that when analysing BT's market power (as opposed to defining which products should be included within a market given a hypothetical monopolist and a SSNIP) cable is not a strong constraint on BT. This is supported by Ofcom's analysis set out below which looks at a variety of indicators of market power and concludes that BT has SMP in the markets as defined..

Market Growth and Market Shares

3.13 As can be seen from Figure 3.1 steep increases in broadband take-up have been experienced in the UK during 2002/3. In March 2004 the UK had in excess of 3.5 million broadband subscribers; and the retail broadband sector was worth around £1.3bn (inc-VAT) per year.

Figure 3.1, UK Broadband end-users by volume: March 2004



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

3.14 As noted in the OFT's *Assessment of Market Power Competition Act Guidelines*

<http://www.ofcom.gov.uk/NR/rdonlyres/e7uqn7kkhubh62jlrxfhpvlhotzb5bdlmzyi6gmdxuzfgcra252mge4v5npeundb5p4ism2wfgz2rnojbmpu7lhma/oft415.pdf>, it can be informative in product markets possessing some degree of differentiation to analyse market shares both by revenue and volume. This is because revenue shares will capture the effects of any premiums above the competitive (cost-based) price level that operators are able to charge. Nevertheless, a higher share by revenue is not necessarily indicative of greater market power. For example,

the supply of more costly services than competitors would also be consistent with a higher market share by revenue than volume.

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

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

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

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

3.19 Table 3.1 and Figure 3.2 below show the current shares of UK broadband subscribers that are being supplied over BT's ADSL network, the cable

companies' modem enabled networks or via other broadband access mechanisms such as fixed wireless access and satellite services.

Table 3.1 UK Network shares of broadband end-users by volume ¹⁵

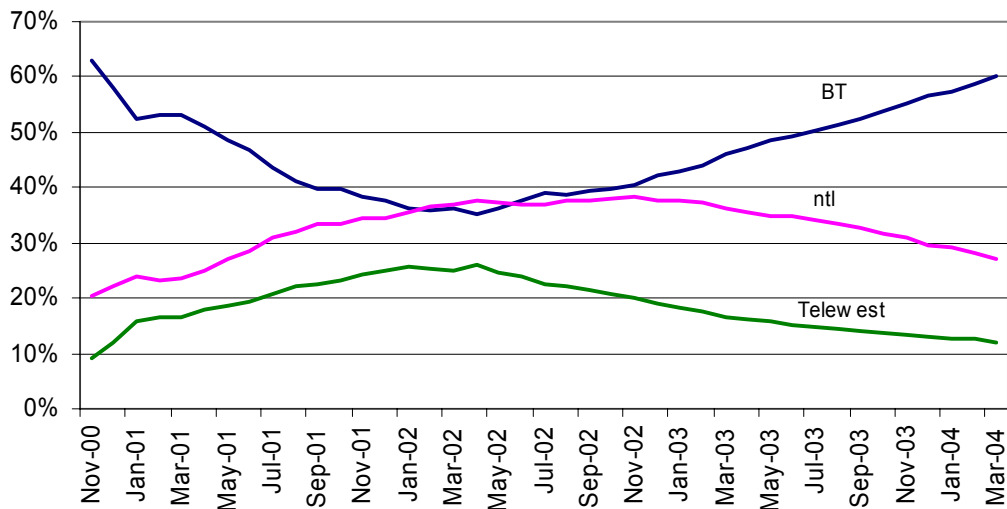
Data	BT Wholesale	NTL	Telewest	Other
November-00	62.9%	20.3%	9.2%	7.6%
December-00	57.9%	22.1%	11.9%	8.1%
March-01	53.0%	23.6%	16.7%	6.7%
June-01	46.9%	28.4%	19.3%	5.4%
September-01	39.9%	33.6%	22.5%	4.1%
December-01	37.7%	34.5%	24.9%	2.9%
March-02	36.1%	37.1%	25.1%	1.8%
June-02	37.6%	36.9%	23.8%	1.7%
September-02	39.5%	37.7%	21.4%	1.4%
December-02	42.0%	37.7%	19.1%	1.2%
March-03	46.3%	36.4%	16.5%	0.93%
June-03	49.1%	34.8%	15.2%	0.89%
September-03	52.3%	32.9%	14.0%	0.82%
December-03	56.6%	29.7%	13.0%	0.68%
March-04	60.2%	27.0%	12.1%	0.62%

Source: Asymmetric Broadband Customer Figures provided by industry

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

¹⁵ These figures are data at the end of the month. These data have been updated since December 2003 and include more accurate figures from relevant operators' annual reports and fewer Ofcom estimates.

Wider Broadband Shares: End User Volumes



Source: Asymmetric Broadband Customer Figures provided by industry operators.

3.20 The current (March 2004) shares of retail asymmetric broadband subscribers, for whom cable's and BT's wholesale asymmetric broadband origination is being used as an input to provide the retail service, show that BT currently possesses 60% of this wholesale market with ntl and Telewest having market shares around 27% and 12% respectively. These market shares include those sales that are self provisioned to the downstream business of each operator.

3.21 As explained in chapter 2, paragraphs 2.146-2.160, in the absence of regulation, it is possible that wholesale products would not exist and that competition between ADSL and cable based broadband internet access would take place at the retail level. As discussed previously, in this scenario the pricing constraint at the wholesale level would be an indirect constraint via competition at the retail level. This suggests that the constraint at the wholesale level is weaker compared to constraints at the retail level.

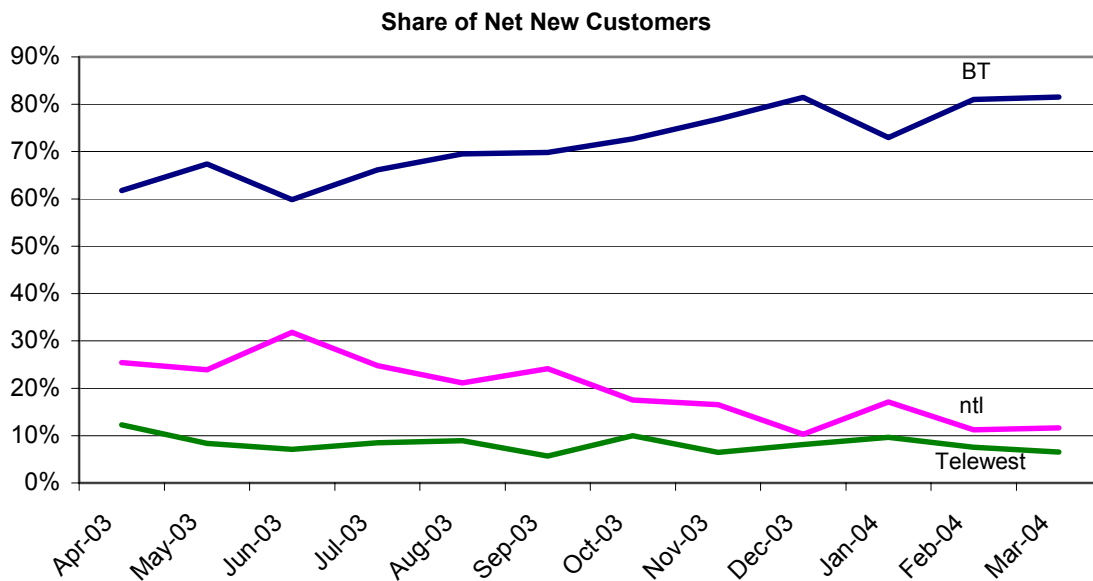
3.22 If the indirect constraint were so weak such that distinct ADSL and cable wholesale markets were identified then it would be legitimate to consider separate ADSL and cable market shares at the wholesale level. If ADSL shares were considered at a wholesale level, then BT would have around 98% share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

Therefore, consideration of shares of ADSL services leads to an exaggerated assessment of the market position of BT in the wholesale market.

3.23 BT's wholesale market share had declined from a peak of 62.9% in November 2000 very early in the development of this market. But, its share commenced growing again from a nadir of 36.1% in March 2002 to reach its current share of 60% over two years. This increase in BT's market share has been directly mirrored by a reduction in the combined share of the cable operators. The total wholesale market share accounted for by LLUOs, satellite, fixed wireless access customers and other technology operators remains less than one percent in March 2004. Suppliers using other broadband technologies (i.e. other than ADSL and cable) and LLU operators are not currently providing services on a sufficient scale to affect competition materially in the wholesale market. Nor are they likely to do so during the period covered by this market review. This is because of the significant investments that are required to establish such mass market services (discussed further in the entry barriers section below) and the lead times between undertaking these investments and achieving a mass market presence. Refer to Annex A for a fuller discussion of other technologies used to provide asymmetric broadband Internet access.

3.24 Since August 2002 BT has acquired more new broadband subscribers at the wholesale level each month than cable. Between the end of January 2003 and July 2003 BT has acquired in excess of 500,000 new (net) subscribers compared to just less than 300,000 for cable. This trend is continuing with BT's share of new asymmetric broadband origination customers now over 80% as illustrated in Figure 3.3.

Figure 3.3 – Share of new customers by operator



Source: Asymmetric Broadband Customer Figures provided by industry operators.

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

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

3.27 Ofcom agrees with Telewest that the market share data has been volatile over the last 30 months and has accordingly indicated that it does not therefore consider that BT has an entrenched market position. However, as set out in the analysis above, BT’s market share has been on an upward trend over the last two years i.e. since June 2002. In addition, as set out below, BT’s future potential market shares are significantly higher than those available to the future potential market shares of the cable companies. Therefore, Ofcom disagrees with the view that BT does not possess SMP in the market for broadband origination.

3.28 Ofcom considers that BT's market share of over 60% and its upward trend since March 2002 supports a finding that BT has SMP in the market for asymmetric broadband origination.

Broadband pricing

3.29 Ofcom considers that the substantial increase in BT's market share over the 18 months (from 39% in June 2002, to 60% in March 2004) has mainly been the result of three significant developments: BT's substantial price reductions of April 2002 for its intermediate services to ISPs and retail ADSL internet access prices; and BT's "hard-launch" of the retail BT Broadband service in the summer of 2002; and BT's decision to expand its geographic toll-out of ADSL, coupled with the fact that there was little provision of cable in those newly enabled areas.

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

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

Locally Disaggregated Customer Shares

3.32 Ofcom has previously noted that this national market possesses local characteristics where BT faces head-to-head competition with one of the cable operators in their respective franchise areas. Ofcom has been provided estimated customer volume market shares figures within the aggregate UK cable franchise area. BT believes that in cable franchise areas as a whole Rate-adaptive ADSL services account for 32% and cable modem customers for 68% of all broadband services. Telewest has provided Ofcom with market research information that it obtained in June 2003. This snapshot of Telewest's share of broadband customers shows that whilst its share has been declining since mid-2002, when it possessed an 89% share of broadband customers in aggregate over its franchise areas, it still possesses an average share of 70%, with BT possessing (almost all of) the remainder. When broken down by regional

franchise, Telewest's market research states that its broadband customer share varied from 53% in London to 81% in Birmingham. However, as explained earlier, Ofcom notes that on a national basis the cable companies currently possess a combined 39% market share compared to BT's 60% share.

Future Potential Market Shares

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

3.34 In the Market Review of the fixed narrowband wholesale exchange line, call origination, conveyance and transit markets, http://www.ofcom.org.uk/static/archive/oftel/publications/eu_directives/2003/fix_narrow0803_1.pdf Ofcom has stated that BT has SMP in the provision of wholesale narrowband analogue access where it possesses the vast majority of all PSTN access lines.

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

3.36 It should be noted that ADSL technology is reach limited and therefore a small percentage of BT's potential 27.3 million premises will be beyond the range of exchange based ADSL broadband. The exchanges that BT has so far broadband enabled serve about 80% of all UK premises (source: Oftel Internet & Broadband Brief – October 2003). This represents about 21.8 million premises in total. However, BT estimates that about 3% of these premises are beyond the range of its current service offerings. This means that BT's ADSL broadband service(s) are currently available to about 21.2million premises. In comparison 79% of ntl's cable network and 96% of Telewest's cable network is currently broadband enabled, which represents 6.6 million and 4.7 million premises respectively.

3.37 It is therefore the case that BT's network can currently serve broadband to over three times as many premises than either of the cable networks. Given that the cable networks do not overlap it is useful to compare BT's broadband

coverage with the combined broadband coverage of the cable operators, i.e. 21.2m v 11.3m. Thus, BT has the ability to provide broadband to over 85% more premises than the cable operators, given the current rollout. Or to put this another way, of all the premises that are in ADSL and/or broadband cable areas, 53% have a choice between the two whereas the remaining 47% are only supplied by BT.

3.38 However, BT has recently announced firm plans to roll out ADSL to exchanges covering over 99.5% of the population by mid-2005 (source: BT press release 27 April 2004). Achievement of this aspiration would result in approximately 26m premises being broadband addressable by BT. If cable operators were to broadband enable all the premises they currently pass this would increase their addressable premises to only 13.3m. Therefore, BT with its 99% reach would have the ability to provide broadband to 95% more premises than the cable operators, i.e. about 50% of premises will not have a choice between cable and ADSL. BT, in its response to the December consultation, refers to the fact these roll-out figures are only targets and should not be relied upon. Ofcom notes, however, that the SMP analysis is not dependent on BT meeting its roll out target.

3.39 In the cabled areas, there is also good reason to expect BT's market share to grow from current levels. In many of those areas, broadband cable service was available before broadband DSL service (or, at least, before BT sharply reduced prices and started intense national marketing) so that the cable operators would have been in a position to establish a first mover advantage. In the ntl areas, the entry level 128/150k service has also proved very popular. Most ISPs offering broadband DSL service have in practice used IPStream. This has not until now supported such an entry level service in practice but will in future do so. There is a strong expectation therefore that entry-level customers in cabled areas will be much more evenly shared between DSL and cable than has been evident in the past. The expectations about trends in cabled areas receive some support from the Telewest data recorded above.

3.40 Ofcom considers that BT's continued desire to roll-out its broadband availability when coupled with its ubiquity and dominance in the provision of wholesale narrowband analogue access services means that it has far greater ability to obtain increasing numbers of future asymmetric broadband customers and thus market share than its cable operator competitors. This future potential for gaining wholesale asymmetric broadband origination market share is an important consideration given that this market is still growing. As a result Ofcom expects BT's achieved wholesale market share to continue to increase from its present level of over 60% over the time scale of this market review. This results not only from the roll-out to areas currently not served by broadband (which are likely to exhibit above-average take-up rates as a result of previously suppressed demand) but also from trends in the cabled areas mentioned above.

3.41 Ofcom notes that this view is not affected by the existence of LLU. This is because LLU operators do not currently provide a significant competitive constraint in the provision of asymmetric broadband services.

3.42 In response to the December consultation, BT has highlighted the fact that Ofcom has not forecast any market shares. In response, Ofcom has specifically not forecast firm numbers as it believes that this would be too speculative. However, it considers it reasonable to examine the general potential for growth in market shares of different players.

Barriers to Entry and Expansion

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

3.44 The UK's cable companies (in the areas where they currently have local narrowband access networks) and BT have had to incur significant sunk investments in order to enter the wholesale asymmetric broadband origination market. But these have only related to the sunk costs associated with enabling narrowband network elements to support broadband traffic. Confidential information provided to Ofcom by asymmetric broadband operators suggest that on an aggregated annual basis in the UK numerous tens of millions of pounds have been invested in the broadband enabling of analogue access networks.

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

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

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

3.48 In response to the December consultation, BT has commented that sunk costs of themselves do not confer SMP. Further, BT states that its position in the market simply reflects its risk taking/ commercial decision to invest in an uncertain market. BT claims that just because other operators have not invested in this market does not mean that BT should be penalised for it.

3.49 Ofcom acknowledges that sunk costs in themselves are not sufficient to confer SMP – Ofcom's approach has been to examine this issue in conjunction with a variety of other indicators. Further, Ofcom believes that it is important to point out that BT's advantages from sunk costs derive from two sources – firstly, the sunk costs in relation to its local access networks and secondly, the sunk costs in relation to enabling its narrowband network to carry broadband traffic. With regards to the former, BT has clear advantages relative to other operators given its legacy network and the ubiquity of that network. With regards to sunk costs associated with upgrading the existing network to carry broadband traffic, Ofcom believes that what matters for competition is the post entry price that new entrants can expect. This is likely to be affected by BT's position and early entry into that market. Further, Ofcom considers that given the ubiquity of BT's narrowband network the risks to other operators entering the broadband origination market were higher than that for BT. This has allowed BT to take certain commercial decisions which may have been too risky for other operators to take at the time.

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

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

finding that there are significant barriers to entry and expansion in the market for asymmetric broadband origination.

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

3.53 In response to the December consultation, BT argues that there are many sources of entry into the market. BT identifies amongst other things, competition developing downstream from service providers who might integrate higher in the supply chain through commercial relationships with Altnets or by creating a new service. However, Ofcom believes that this does not show that there is competitive entry at the wholesale level. Commercial relationships with Altnets are reliant on the altnets being able to access relevant wholesale products from BT. In addition, creating a new service is reliant on the use made of existing wholesale broadband inputs. Neither of these show that competitive entry is occurring in broadband origination. In fact it seems to suggest that Altnets will be able to compete for ISP business and new products will be able to be created wholly or mainly because of the existence of wholesale broadband access products.

LLU Operators

3.54 LLU operators (LLUOs) are currently able to obtain cost-based wholesale local access and backhaul as inputs from BT which they can then enable to constitute elements of wholesale broadband asymmetric origination. Access to these upstream regulatory inputs allow LLUOs the potential to compete with BT and cable companies in the market for asymmetric broadband origination without having to incur the substantial sunk costs of network build (although they do have to bear sunk costs associated with co-location, which non-LLUOs do not). However, LLUOs are unlikely, on the basis of current price levels and structures, during the period of the current market review, to affect materially competition in the asymmetric broadband origination market. This is largely due again to the sunk investments that still need to be made, lead times and the economies of scale associated with deployment which act as significant barriers to entry and expansion. Notably, at the end of April 2004, only 11,500 loops in total had been unbundled and, of these, only 4700 were shared access and so being used to offer wholesale asymmetric broadband origination services.

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

benefit from and exploit the economies of scale available in the provision of these services. Ofcom will pay close attention to the development of LLUOs when it conducts another review of wholesale broadband access markets.

3.56 BT argues that the range of business plans currently being implemented by LLU operators shows that they are targeting distinct market segments with the most appropriate access technology. BT believes that over the lifetime of this market review, the capability of LLU operators (and other operators) to displace BT will increase markedly via the pressure which ISPs will put on alternative network operators. BT present a forecast conducted for them in November 2002 by Gartner Group. This forecast shows a total of 89,000 unbundled loops (30,000 shared access) in 2003/4 and 275,000 (115,000 shared access) in 2004/5.

3.57 In response, Ofcom notes that the current total is a small fraction of that forecast for 2003/04 and considers that the figure forecast for 2004/05 would represent an extremely challenging target even if charges were to be reduced immediately and substantially. Furthermore, even if this figure of unbundled loops were met in 2004/5, 115,000 shared access loops being used to offer wholesale asymmetric broadband origination services would represent significantly less than 5% of the relevant market, based on current size.

Alternative Broadband Technologies

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

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

Economies of scale and scope

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

3.61 As noted with reference to LLU operators, BT is able to benefit from considerable economies of scale that will not be available to many new operators. In particular, large economies of scale are present in both the DSLAM and backhaul elements of asymmetric broadband origination services. These scale economies are due to the nature of DSLAM and backhaul investments. For example, this means that the greater number of end users at the concentrator level the lower the unit costs per line. The concentrator level supports only a finite number of customers, only a proportion of whom may be broadband customers. Thus a supplier of broadband services would need to secure a significant number of the broadband customers in order to achieve low and efficient unit cost per line. This effect acts to create a further entry barrier into the market for new Altnets, e.g. LLUOs, who are likely to possess higher unit costs than incumbents as they enter the market.

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

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

3.64 In response to the December consultation, BT states that Ofcom has not shown any evidence that there are significant economies of scale and scope. Further, BT claims that Ofcom has been inconsistent in its SMP analysis as Ofcom claims there significant economies of scale and scope whilst implicitly in its market definition it has assumed few economies of scale and scope. This is because Ofcom has presented an upper bound for the price cost ratio of 0.8. This is discussed in greater detail in Chapter 2.

3.65 Ofcom believes that BT is not making the correct comparisons. The data presented by Ofcom to derive the retail market definition was about end to end retail services and this used a price cost ratio of 0.8. However, what is being discussed in the present context are wholesale markets. Ofcom reiterates that

economies of scale and scope are present and that these mainly relate to the provision of DSLAMs and backhaul facilities.

Countervailing buyer power

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

3.67 BT argues that, on the contrary, there is already vibrant countervailing buyer power. BT notes that the cable companies are active in sourcing traffic over BT's network and are also capable of using their own access and core networks to displace BT. BT further argue that the ISPs are providing significant pressure for it to reduce wholesale and intermediate prices, for example by requiring BT to tender against other network operators. BT expects this pressure to intensify during this market review's time scale. BT further comment that through the exertion of this countervailing buyer power, third party network operators winning ISP business will be in a position to achieve similar scale economies to BT.

3.68 In response, Ofcom considers that, absent regulation, BT's customers do not have the ability to construct a credible threat to take their custom away from BT and that they would not be able to develop such a credible threat over the time scale of this review. This is mainly because national ISPs wish to market a national range of products. Use of a cable-based origination product, available only in cabled areas, does not permit them to follow that path. For that reason, national ISPs tend to regard (largely hypothetical) cable-based origination products as an interesting complement to DSL-based services as they could be useful for reaching customers who are committed to supply of services via cable but could not generally replace DSL-based services. Generally, ISPs are not currently in a position to switch. This is because they require a national supplier and currently only BT offers this. In addition Altnets have complained about BT's terms and conditions and processes. However, they have been unable to switch to cable as an alternative. This suggests a lack of countervailing buyer power. Furthermore, cable companies are not generally offering a wholesale broadband origination product to third parties so BT's customers have no guaranteed alternative source of supply. Moreover, there is no indication at the moment that cable companies would be able to offer, within a reasonable timescale, a product which allowed ISPs control over technical configuration so as to differentiate their

product from that offered by the cable company, even if they wished to do so. Finally, although ISPs are requiring BT to tender against other network operators, this relates mainly to intermediate services, which are not subject to analysis in this review.

Easy or privileged access to capital markets/financial resources

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

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

3.71 In response to the December consultation, BT argues that access to capital is treated differently in this market review compared to other reviews.

3.72 Ofcom disagrees. Ofcom's view in other market reviews has been that BT may have some advantages over competitors through lower cost access to capital markets. In this review, Ofcom's view is that lower borrowing premiums could potentially, but not necessarily, provide important advantages to BT.

Consultation responses on SMP

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

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

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

3.76 In the December consultation response, BT has also commented that the inclusion of cable in the market casts doubt on the finding of SMP. It states that the market power analysis find that cable is a constraint on copper and that the conditions underpinning the Hypothetical Monopolist Test (HMT) and the SMP analysis are essentially the same therefore BT does not have SMP in a market that includes cable.

3.77 Ofcom disagrees. The HMT and the SMP analysis are different. The market is defined assuming an anonymous hypothetical monopolist is the sole provider of ADSL access and finds that cable falls within the relevant market. The SMP analysis is company specific so it is possible to have a broad market within which an individual company or group of companies hold a position of SMP. The inclusion of cable within the product market does not mean that BT does not have SMP. If BT's line of argument is accepted, the corollary is that it is not possible to have a company with SMP in a broad market which is not correct.

Decision on SMP

3.78 After considering all of the comments received in response to the finding of BT having SMP in this market, Ofcom concludes that BT possesses single firm SMP in the market for wholesale asymmetric broadband origination. This finding is based on: BT's current and growing market share of 60%; the further likelihood for this share to expand in the future given the ubiquity of its network and its continuing roll-out of broadband; the existence of extremely significant entry barriers; the existence of significant economies of scale and scope; the lack of countervailing buyer power; and BT's superior access to capital markets. While recognising the developing nature of this market Ofcom does not expect this conclusion to alter significantly in the next 18 to 24 months.

Collective dominance in the UK (excluding the Hull Area)

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

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

3.81 Ofcom received no comments in response to its conclusion of no collective dominance in the market for wholesale broadband origination.

Single Firm Significant Market Power in Kingston-upon-Hull

3.82 Ofcom concludes that Kingston Communications possesses SMP in the market for wholesale asymmetric broadband origination in the Hull Area.

Market shares

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

Other criteria

3.84 The overall size of the relevant wholesale asymmetric broadband origination market in the Hull area is much less than in the rest of the UK. (There are currently approximately 10,000 end users). The assessment of the other SMP criteria of: barriers to entry and expansion; economies of scale and scope; and countervailing buyer power as applied above to BT, Telewest and ntl in the rest of the UK, also relate to Kingston in the Hull Area. The assessment of the remaining criteria relating to single firm SMP detailed in Annex B with reference to the rest of the UK also applies to Kingston. However, Ofcom accepts that due to its smaller size Kingston does not possess the same capital market advantages as BT.

3.85 In response to the both the April and December consultations Kingston argues that Ofcom's market power analysis is flawed and its designation of SMP

to Kingston in the Hull Area unwarranted. Kingston argues that competitive pressures in the Hull Area are increasing with the threat of short term local market entry by other operators as it believes the Hull Area is not characterised by enduringly high entry barriers.

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

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

3.88 Ofcom reiterates its view that entry into the Hull Area to supply wholesale asymmetric broadband origination on a significant scale by a competing operator would involve considerable sunk costs that act as a significant entry barrier into this market. In theory if any sunk costs are required to allow entry to a market then the market cannot be deemed to be contestable. This aside, Ofcom considers that the costs that would need to be incurred by a significant new entrant into the Hull Area would be substantial in relation to the revenues achievable. This would be true for both new access technologies and LLU operators. As explained earlier, LLU operators would be required to make considerable investments in DSLAM and conveyance technologies and networks.

3.89 Kingston has also suggested that the sole rationale for regulatory intervention should be evidence that anti-competitive behaviour is prevalent and

that consumers are prevented from benefiting from the effects of competition in the longer run.

3.90 Ofcom does not agree with Kingston's views on the rationale for regulatory intervention. *Ex ante* remedies are imposed where there is SMP. It is pre-emptive rather than reactive. *Ex post* regulatory powers will be used to deal with anti-competitive behaviour which is not prevented by *ex ante* regulation.

Decision on SMP

3.91 Ofcom concludes that Kingston has SMP in the wholesale broadband origination market in the Hull Area. Further, Ofcom considers it unlikely that its conclusion will significantly alter in the next 18 to 24 months.

Broadband Conveyance

3.92 This section undertakes a single firm SMP assessment in relation to broadband conveyance in the UK. Ofcom concludes that BT possesses SMP in this market. When assessing SMP in this market Ofcom assumes that its remedy to BT's SMP in wholesale asymmetric broadband origination (being consulted on via this current document, see chapter 4), i.e. the provision of access, has been adopted. This is appropriate to ensure that all regulation imposed is proportionate. In other words, if remedies for wholesale broadband origination were sufficient to ensure effective competition in broadband conveyance then this should be taken into account in considering whether regulation of broadband conveyance was justified.

3.93 In addition, while this market includes the conveyance of SDSL originated broadband traffic, due to a lack of available data this is excluded from the SMP analysis. However, this traffic constitutes a small proportion of the relevant market. Therefore, this omission does not affect the conclusions of the analysis.

This section considers the following key indicators of SMP:

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

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

3.94 In response to the December consultation, the majority of respondents agree that BT possesses single firm SMP in this wholesale market. Only BT disagrees. These comments are discussed in the relevant sections below.

Market Growth and Market Shares (Present and Future)

3.95 As was explained in detail in the earlier single firm SMP assessment relating to wholesale asymmetric broadband origination, the current network market shares of asymmetric broadband subscribers at the retail level show that BT currently possesses around 60% with ntl and Telewest having market shares of 27% and 12% respectively, on a subscriber number basis. Furthermore, BT's share is increasing rapidly in this growing market. Ofcom's estimate of conveyance shares by capacity, rather than subscriber volumes, in July 2003 are that BT had a market share of around 55%, with ntl and Telewest having market shares of 26% and 18% respectively. Again, Ofcom expects that BT's capacity based market share is growing in this market. Ofcom is unable to estimate an equivalent figure based on current market shares by volume. However, it is probable that the conveyance shares by capacity will have grown in line if not by more than market shares by volume as Ofcom understands that BT's ADSL services are generally of a higher speed than those offered by the cable operators.

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

3.97 However, there is a caveat to this method. Following the June 2002 ATM Direction (<http://www.ofcom.org.uk/static/archive/oftel/publications/broadband/dsl/atmi0602.htm>) there currently exists two interconnection services that allow access to broadband origination traffic. 'Service A' – interconnection at the parent ATM switch – does not include BT providing any of the accompanying broadband (ATM) conveyance. 'Service B' includes both broadband origination and conveyance – interconnection at the distant ATM node. However, Ofcom understands that there are as yet very limited amounts of (excluding the cable companies) Altnet self provision of broadband conveyance services, i.e. Altnets buying ATM interconnection are currently mostly purchasing service B.

3.98 The UK's cable operators do not provide a wholesale access service that would allow other operators to self-provide broadband conveyance. The service that ntl has recently started selling to AOL is an intermediate service incorporating broadband conveyance. This suggests that network market shares at the retail level following an adjustment for Service A sales, are likely to be a reasonable indicator of market shares for wholesale broadband conveyance.

Ofcom notes that the demand for broadband conveyance will come from ISPs and Altnets without a ubiquitous core network.

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

3.100 Since BT and cable operators self provide broadband conveyance, there is a large proportion of the market that is not available to other operators to compete for. Therefore, it is important to consider the shares of different operators for the share of the broadband conveyance market that is open to competition. As noted above, most Altnets purchase Service B rather than parent node interconnection. This suggests that, at present, Altnets are greatly reliant on BT to provide their broadband conveyance. However, Ofcom notes the take up of DataStream services is still relatively new and that the take up of Service A may increase over the period of this review. Ofcom considers that regulation should incentivise efficient provision of alternative network infrastructure wherever feasible rather than long-term reliance on BT. This point is considered further later in this Statement. Nevertheless, for the present, and in particular as a result of the relativities of BT's pricing structure for conveyance (which have been within BT's discretion), Ofcom considers that take up will be insufficient to undermine BT's SMP. This is because Ofcom considers that Altnets would not in the absence of pricing changes driven by regulation, undertake sufficient roll-out to parent ATM nodes. This is discussed in the barriers to entry and expansion section below.

Barriers to Entry and Expansion

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

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

characteristics of the area served by the switch, i.e. whether there is likely to be a high demand for broadband retail services.

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

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

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

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

3.107 In response to the December consultation, BT accepts that the previous information it provided on operator's points of presence did not sufficiently inform the discussion of the likelihood of operators being able to interconnect to pick up broadband traffic since many of these points of presence were via IECs which are not suitable for picking up broadband traffic. BT has provided more detailed information, setting out where altnets have ISH presence. Further, it also argues that capability at all ATM nodes is not necessary because ISPs can acquire 'residual' services directly from BT by purchasing alternative origination and conveyance products. BT accepts that it may have SMP at 15 ATM nodes due to lack of presence of other operators at these nodes but disputes the finding that it has SMP in broadband conveyance generally.

3.108 In response, Ofcom reiterates its consideration that access to all switches is essential to achieve a viable geographically spread service. Indeed Ofcom would point to BT's own acceptance that 'residual' services would still need to be

bought from BT which suggests that operators will still be reliant on BT for provision of broadband conveyance services which may not be available in the absence of regulation. Ofcom notes that on the basis of more appropriate information, BT's figures suggest that only one company (compared to three companies on the basis of earlier information) has more than 100 points of connection which under certain conditions might be suitable for interconnecting with the ATM network. Ofcom continues to consider that the additional required network connectivity of Altnets to replicate BT's geographical footprint for broadband conveyance is prohibitively significant. Firstly, analysis undertaken by Ofcom shows that even those operators with extensive infrastructure would have to dig several tens of kilometres to obtain a presence at most of the ATM switches. Ofcom considers that this represents a substantial barrier to entry. Secondly, given the density of traffic argument set out above, it will be unattractive for operators to interconnect at all switches.

3.109 Moreover, Energis, in its response indicated that it will not be interconnecting with more ATM nodes in the broadband conveyance market given the current virtual path pricing structure (and pricing methodology). This suggests that additional connectivity with more ATM nodes by Altnets is unlikely to be cost-effective in the absence of changes to the broadband conveyance pricing structure to ensure that it reflects appropriate incentives to make the necessary build/buy decisions. Even hypothesising the necessary changes to relative prices of different distances of broadband conveyance, it would be a very significant project for Altnets to interconnect at most or all of these nodes during the lifetime of this review.

Economies of scale

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

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

3.112 One respondent argues that BT's possession of a significant share of retail customers acts to enable it to achieve significant economies of scale in broadband conveyance via its self-provision. It argues that via its position at the retail level BT has achieved a scale in the wholesale conveyance market that other operators will find difficult to match. Ofcom disagrees with this respondent's comments. BT Openworld and BT Broadband have not been found to be

dominant at the retail level and its market shares are susceptible to erosion through the competitive process. Therefore, there is no guarantee of economies of scale through self-provision.

Countervailing buyer power

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

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

Easy or privileged access to capital markets/financial resources

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

Conclusion

3.116 Ofcom concludes that BT possesses single firm SMP in the market for wholesale broadband conveyance. This finding is based on: BT's current and growing market share of 60%; its very much higher share of broadband conveyance that is open to competition (i.e. not in-house sales of BT or the cable companies); the further likelihood for this share to expand in the future; the existence of significant entry barriers; the existence of significant economies of scale; the lack of countervailing buyer power; and BT's superior access to capital markets.

Summary list of SMP designations

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

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

Forward look

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

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

Definition of the dominant provider

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

3.121 Article 16 of the Framework Directive requires that, where a national regulatory authority determines that a relevant market is not effectively competitive, it shall identify “undertakings” with significant market power on that market and shall on such “undertakings” impose appropriate specific regulatory obligations. For the purposes of EC competition law, “undertaking” includes companies within the same corporate group,¹⁶ for example, where a company within that group is not independent in its decision making.

3.122 Ofcom considers it appropriate to prevent a person to whom an SMP service condition is applied (i.e. the dominant provider) which is part of a group of companies, exploiting the principle of corporate separation. That is to say, the

¹⁶ *Viho v Commission* Case C-73/95 P [1996] ECR I-5447

dominant provider should not use another member of its group to carry out activities or to fail to comply with a condition, which would otherwise render the dominant provider in breach of its obligations.

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

3.124 Accordingly, Ofcom considers it appropriate that the obligations detailed in this consultation document and notification shall apply to:

- British Telecommunications plc, whose registered company number is 1800000, and any of its subsidiary or holding company, or any subsidiary of that holding company, all as defined by Section 736 of the Companies Act 1985 as amended by the Companies Act 1989.
- Kingston Communications (Hull) plc, whose registered company number is 2150618, and any of its subsidiary or holding company, or any subsidiary of that holding company, all as defined by Section 736 of the Companies Act 1985 as amended by the Companies Act 1989

as appropriate.

Chapter 4

Regulatory remedies – SMP services conditions

The legal framework for imposing regulatory remedies

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

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

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

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

- *the provision of network access;*
- *no undue discrimination;*
- *transparency; and*
- *cost accounting and accounting separation.*

4.5 Recital 27 of the Framework Directive provides that *ex ante* regulation should only be imposed where there is not effective competition and where competition law remedies are not sufficient to address the problem. In order to provide a full analysis, Ofcom, therefore, also considered the option of no *ex-ante* regulation, and whether it would be sufficient to rely on competition law alone, while noting the obligation referred to in paragraph 4.3 above.

4.6 Section 3 of the Act sets out Ofcom's general duties. 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. Section 3(4) (b) explains that in doing so, 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 in furthering the interests of consumers, Ofcom must have regard to choice, price, quality of service and value for money. Additionally, Section 4 of the Act sets out the Community duties on Ofcom which flow from Article 8 of the Framework Directive.

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

4.8 Also, as well as the SMP conditions imposed being appropriate (see section 87(1)), each SMP condition must also satisfy the tests set out in section 47 (2) of the Act, namely that each condition must be:

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

It is Ofcom's view that the SMP conditions imposed on BT and Kingston in this chapter satisfies the relevant requirements specified in the Act and relevant European Directives. This view is explained in detail in the following paragraphs.

Relative efficiency of competition law and complementary ex ante regulation

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

Characteristics of telecoms markets in general

4.10 Generally, the case for *ex ante* regulation in telecoms markets is based on the existence of market failures which, by themselves or in combination, mean

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

4.11 The European Commission has also stated that *ex ante* regulation is justified, “[...] where the compliance requirements of an intervention to redress a market failure are extensive (e.g. the need for detailed accounting for regulatory purposes, assessments of costs, monitoring of terms and conditions [...])” (See page 11 of the Commission’s Recommendation.) This is the case for many markets where persistent SMP leads to a risk of a firm setting excessive prices and the need for efficiency incentives, where a price control would be justified, or where there is likely to be a need for intervention to set detailed terms and conditions for access to networks.

Aims of the conditions

4.12 In Chapter 3 and Annex B of this document, Ofcom explains why it considers that BT holds a position of SMP in the wholesale broadband access markets and that Kingston holds a position of SMP in asymmetric broadband origination in the Hull area. Article 16 of the Framework Directive provides that “where an NRA determines that the relevant market is not effectively competitive; it shall identify undertakings with SMP on that market...and...shall on such undertakings impose appropriate specific regulatory obligations...”

4.13 As mentioned in paragraph 4.6, in considering its section 3 and 4 duties Ofcom considers that, in view of these findings, *ex ante* regulation of the wholesale broadband access markets is required in order to promote the development of competition in downstream broadband services. Ofcom considers that a failure to regulate BT and Kingston in these markets is likely to result in competition in downstream services (in terms of price, rapidity of rollout, service quality and product differentiation) developing significantly more slowly in the absence of regulatory intervention. Other providers would be unlikely to enter to provide intermediate or retail services as they would require access to be provided by BT and Kingston and, in the absence of regulation, BT and Kingston would have little incentive to do so given their dominance. The consequence of this would be a restriction of competition in those services. Therefore *ex ante* regulation is required to ensure that the benefits of competition in terms of price, product differentiation, choice of supplier and quality are available to retail consumers of broadband internet services.

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

4.15 The application of regulation at the wholesale level rather than at the retail level, also fits with the Community requirement that National Regulatory Authorities (NRAs) take measures which meet the objective of encouraging efficient investment in infrastructure and promoting innovation. The introduction of regulation in wholesale markets will encourage providers to purchase wholesale products and combine them with their own networks and where possible create products in competition with both BT and Kingston. These may be in competition with either intermediate services or retail services.

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

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

4.18 Ofcom has also taken full account of Oftel's guidelines, dated 13 September 2002 (the "Access Guidelines"), on the imposition of access obligations under the new EU Directives. These guidelines can be found at www.oftel.gov.uk/publications/ind_guidelines/acce0902.htm. These describe the circumstances in which 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. Finally, Ofcom has also considered the ERG paper on the approach to Appropriate Remedies in the New Regulatory Framework, in particular the statement that, "...there is a presumption that *ex ante* regulation is

appropriate on the markets in the Recommendation if a position of SMP is found”.

Remedies considered

4.19 Ofcom considered what regulation to impose on BT and Kingston in the markets for wholesale broadband access and specifically considered in the December consultation the following possible remedy options separately:

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

In response to the December consultation, BT commented that Ofcom did not undertake a full Regulatory Options Appraisal. A full regulatory option appraisal was outlined in the April consultation, and its conclusions were referred to in paragraph 4.18 of the December consultation. In the December consultation, Ofcom considered the appropriateness of each of the proposed SMP conditions as an option in turn.

Final decision

4.20 Therefore Ofcom’s decision is that for BT, options 1 and 3-11 and for Kingston, options 1, 4-7 and 10, as set out in the December consultation, are the appropriate level of regulation to meet the aims set out above. Each condition within these options is considered below in relation to BT and, where applicable, Kingston. However, overall, for the purposes of section 87(1) of the Communications Act, Ofcom considers that these options when read together are appropriate. It also considers that when read together they meet the tests set out in Section 47 (2) of the Communications Act. That is,

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

- They do not **unduly discriminate** against or between BT and Kingston. The majority of SMP conditions apply appropriately to both operators since both have been deemed to have SMP. Where obligations have been differentially applied, this is where the circumstances of BT and Kingston have differed. The objective reasons provided mean that any discrimination between BT and Kingston is not undue.
- They are **proportionate** in that they are necessary to address BT's and Kingston's market position and facilitate sustainable competition and the maximum benefit for end users. They form a coherent set. None is dispensable without undermining the effectiveness of regulation.
- They are also **transparent** as the requirements are set out clearly on an individual basis in the remainder of this chapter.

Requirement to provide Network Access on reasonable request – SMP condition EA1 & EB1

4.21 Section 87(3) of the Act authorises the setting of the SMP services conditions requiring the dominant provider to provide network access as Ofcom may, from time to time, direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions. When considering the imposition of such conditions in a particular case, Ofcom must have regard to the six factors set out in section 87(4) of the Act, including inter alia, the technical and economic viability of installing other competing facilities and the feasibility of the proposed network access.

4.22 The definition of 'access' and the way in which Ofcom might assess reasonable demands for 'access' is set out in Oftel's Access guidelines. Ofcom considers that it is appropriate to impose an access obligation in terms of a SMP Communications Provider being obliged to meet all reasonable requests for Network Access within the relevant wholesale market, in which it has been found to have SMP, irrespective of the technology required, on fair and reasonable terms, conditions and charges.

4.23 As the market analysis in the previous chapter has shown there are considerable sunk costs associated with building networks to provide broadband services. It is unlikely to be economically viable to build direct access networks in some areas or backbone networks on sufficient scale to provide a viable geographically spread service. Therefore, Ofcom is currently of the view that a requirement on BT to provide access to its network in the markets for wholesale broadband access is appropriate as it facilitates competition in downstream

markets by enabling operators to compete without the need to invest in a ubiquitous network.

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

4.25 Under this condition, Ofcom has the power to make certain directions. It is envisaged that this power will be used to deal with issues relating to specific forms of access or the particular terms, conditions and charges on which reasonable access is provided. Paragraphs 4.188-4.202 set out Ofcom's Direction which it has decided to make under this condition in relation to the provision of ATM interconnection by BT. Finally, this condition requires the Dominant Provider to comply with any such directions. Any contravention of a direction may therefore result in a contravention of the condition itself and thus subject to enforcement action under sections 94-104 of the Act.

Responses to the April consultation

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

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

Ofcom's response

4.28 Recital 6 of the AID states that in markets where there continue to be large differences in negotiating power between undertakings, and where some undertakings rely on infrastructure provided by others for delivery of their services, it is appropriate to secure adequate access and interconnection and interoperability of services in the interests of end users. Ofcom considers the markets defined in the review to be of this type, and in accordance with the AID

considers it necessary to ensure connectivity by imposing proportionate obligations on undertakings that control access to end users.

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

4.30 The scope of the general Network Access obligation is defined by reference to the scope of the wholesale broadband access markets identified in Chapter 2; asymmetric broadband origination and broadband conveyance markets. As set out in Chapter 1, this excludes intermediate services such as the bundle of IPStream and BT Central. As explained above, Ofcom agrees with the Commission that in most cases it is preferable to apply regulation upstream in order to promote competition downstream, in this case in intermediate services, rather than directly regulate the downstream services. This will address two things: SMP problems in the relevant wholesale market; and the level of competition in the downstream markets that rely on these wholesale inputs. This also fits with the Community requirement that NRAs take measures which meet the objective of encouraging efficient investment in infrastructure and promoting innovation.

4.31 One of the main purposes of the regulation of wholesale broadband access markets, in particular the requirement on BT to provide ATM interconnection, is to promote competition at the intermediate services level. A regulatory regime is imposed whose intention is to encourage operators to purchase wholesale products, combine them with their own networks and, where possible, create products in competition with both BT and Kingston; these may be intermediate services or retail services. Therefore, Ofcom considers that it would be disproportionate at the present time to regulate intermediate services such as IPStream and BT Central in addition to regulating wholesale broadband access markets. Ofcom is aware of the argument that even if the regulation of wholesale services is ultimately successful in promoting effective competition downstream, there may nevertheless be distortions of competition in the period until effective competition takes hold. In this case, Ofcom is not persuaded that such a problem is likely, given its approach to pricing of wholesale products (see below) and the requirements of competition law. However, Ofcom will be monitoring developments carefully and will consider further *ex ante* remedies if experience indicates that they are necessary.

4.32 Ofcom has the power to make directions, where necessary and it would consider in detail whether the provision of an asymmetric broadband origination access product which would allow delivery of video services is reasonable. In

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

Responses to the December Consultation

4.33 BT has commented on the scope of access covered by this condition. Specifically, BT argues that Ofcom has been inconsistent in its approach in defining the relevant markets compared to its approach to remedies; it is suggested that Ofcom has applied a narrow market analysis but broad access obligations. BT has also commented that there is a lack of clarity as to how BT's ADSL and SDSL services will respectively come under the Conditions for asymmetric broadband access and leased lines.

4.34 BT has requested that the definition of a Third Party in this Condition be revised from 'a person' to a "person providing a Public Electronic Communications Network". BT has also requested clarification that EA1 applies only to the supply of existing services and not new services requested by other Communications Providers which are covered by EA7.

4.35 Concerns have been expressed by UKCTA and other respondents about withdrawing existing regulation from IPStream. In particular, UKCTA, in its response, referenced a European Regulator's Group (ERG) document on bitstream access.

Ofcom's response

4.36 Ofcom would repeat what it said in response to the April Consultation i.e. that the scope of the general Network Access obligation is defined by reference to the scope of the wholesale broadband access markets identified in Chapter 2; asymmetric broadband origination and broadband conveyance markets.

4.37 In response to BT's point on the definition of 'third party', Ofcom has revised its definition of 'third party' from 'person' to 'person providing a Public Electronic Communications Network or Public Electronic Services'. Third Party has been defined as the provider of a public electronic communications network or public electronic communications service (i.e. electronic communications networks which are provided wholly or mainly for the purpose of making electronic communications services available to members of the public; and electronic communications services that are provided so as to be available for use by members of the public). Accordingly, providers of non-public electronic communications networks or non-public electronic communications services will

not be entitled to Network Access under the proposed condition. This maintains the status quo and reflects the wording of section 87(2) of the Act.

4.38 Ofcom confirms that EA1 applies to all services and not just to the supply of existing services. As explained in paragraph 4.171, EA7 applies to the information and publication obligations on BT where it receives a request for modifications to existing network access as well as for 'new' Network Access.

4.39 In response to UKCTA , Ofcom would like to repeat that intermediate products, such as IPStream, are not included in the relevant markets which are the subject of this review. However, as set out in the December consultation, Ofcom believes that regulating intermediate services would be disproportionate at the present time but that it would consider whether further *ex ante* remedies were required if experience indicated that they were necessary. In its response, Ofcom would further argue that the Commission states that Ofcom's position is not inconsistent with the Commission's regulatory approach to broadband markets. In addition, it is Ofcom's view that its proposed approach to remedies in the wholesale broadband access market is consistent with the ERG paper ¹⁷. This paper states that:

"As bitstream access can be granted at various points of the network hierarchy (points of handover of traffic), the points in the network at which the wholesale broadband access will need to be supplied will depend on national circumstances such as the network topology and the state of broadband competition,...the NRA [...] has to assess the reasonableness of the requested points of handover asked for by the new entrants and weigh them in relation to the possibilities of the network hierarchy. Furthermore, the state of competition, i.e., the number of market players, the existence of alternative networks and infrastructure and .the long run benefit for the consumer of having more choice have to be taken into account."

4.40 Moreover, in the earlier paper as referenced by UKCTA ¹⁸, the conclusion states:

"Where the provision of bitstream access is essential to the development of competition in the wholesale broadband access market, NRAs should mandate a bitstream access product according to national needs. The point in the network at which the wholesale broadband access will need to be supplied will depend on the market analysis and in particular on the network topology and the state of broadband competition. When defining the appropriate point of access, NRAs should take the perspective of market parties."

¹⁷ ERG common position on the approach to appropriate remedies in the new regulatory framework". http://erg.eu.int/doc/whatsnew/erg_0330rev1_remedies_common_position.pdf

¹⁸ http://www.erg.eu.int/doc/whatsnew/erg%20_03_%2033_bitstream_access_interim_paper_f_or_publication.pdf

4.41 After consideration of the circumstances in the UK, including the network topology and the state of broadband competition and following the market analysis set out in Chapter 3, Ofcom continues to believe that intermediate products such as IPStream are not included within the relevant market and it is not currently appropriate to impose ex ante regulatory obligations in respect of the provision of such services.

Ofcom's decision

4.42 Under Section 3 of the Act, and as set out in Section 4 of the Act, Ofcom's principal duty is to further the interests of consumers in relevant markets, where appropriate by promoting effective competition. Ofcom has considered all of the Community requirements detailed in Sections 3 and 4 of the Communications Act. In particular, the condition satisfies the Community requirements, set out in Sections 4 (3), (7) and (8) of the Communications Act. That is, it promotes competition in relation to the provision of electronic communications networks and encourages the provision of Network Access for the purpose of securing efficiency and sustainable competition in the downstream markets for electronic communications networks and services, resulting in the maximum benefit for retail consumers of broadband internet access services.

4.43 With regard to the tests in section 47 (2) of the Communications Act, an obligation to provide Network Access is objectively justifiable in that it will encourage greater access to BT's and Kingston's networks and will therefore foster competition. Furthermore, it does not unduly discriminate between providers. That is, these obligations are imposed on BT and Kingston as the dominant providers in the respective markets and both are subject to such a condition. It is also proportionate in what it is trying to achieve since it is directly targeted at addressing the market power which BT and Kingston hold in these markets and it does not require an SMP provider to provide access where it is not technically feasible or reasonable. The condition also passes the requirement of transparency since it is clear that the condition is designed to achieve access to BT's and Kingston's networks in order to facilitate competition.

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

Migration

4.45 Under the SMP access obligation Ofcom is introducing, it has the power to make directions. It is envisaged that this power will be used to deal with issues

relating to specific forms of access or the particular terms, conditions and charges on which reasonable access is provided. For example, in the previous consultations Ofcom highlighted the fact that there was considerable concern amongst market players about the arrangements and terms for migration of customers between wholesale and intermediate products and between different operators and service providers. Ofcom published its proposals on the migration issue in the form of a draft direction last month.

http://www.ofcom.org.uk/consultations/current/broadband_access/?a=87101

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

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

4.47 In the April and December consultations Ofcom proposed to set charges in the markets for wholesale broadband access on a retail minus basis; these proposals were in line with Oftel's Access Guidelines. Ofcom is still of the view that retail minus is the most appropriate pricing rule for the wholesale products covered by this review. Ofcom considers that, even though these markets are not effectively competitive at the moment, there is uncertainty as to future market developments, i.e. beyond the period of time considered in the review. In a situation where market power is not entrenched, cost based regulation appears disproportionate and may even deter the development of greater competition.

4.48 Ofcom believes that, since these are still immature markets, setting cost-based charges would be a risky exercise which may lead to charges that do not provide the correct economic signal to entrants. In immature markets there is a high degree of uncertainty with regards to costs, and issues such as the timing of cost recovery and the appropriate rate of return on the capital employed are more complicated than in established markets. The downsides of setting incorrect charges, particularly if they are set too low, are significant. It would deter investment in broadband access technologies by the existing operators i.e. BT and the cable companies who are still rolling out their networks, and it may also act as a disincentive to investment in alternative access technologies. This would, in the long term, affect the development of competition. Accordingly, Ofcom considers that regulating charges on a cost-plus (i.e. LRIC plus¹⁹) basis would be premature and potentially harmful to investment decisions and that, given the specific nature of the markets, retail minus appears to be the most appropriate pricing rule.

4.49 Such a pricing rule does not set the absolute level of the charges, but requires that a margin exists between the wholesale charges and the relevant

¹⁹ i.e. greater than Long Run Incremental Cost.

downstream prices (i.e. the prices of retail and intermediate products) which covers the necessary additional costs of providing the downstream products. This allows other providers to purchase access services and compete effectively against the regulated firms' downstream arm by ensuring that no margin squeeze takes place. Retail minus, hence, should in principle guarantee that no discrimination takes place between independent service providers and the service providers of the operators with market power, while allowing for the regulated firms to set charges according to their commercial judgment.

4.50 In the April consultation, Ofcom set out its belief that it was not necessary to include a specific condition to implement its proposed pricing approach in addition to the general Network Access condition which requires charges for Network Access to be fair and reasonable. This is because for a Network Access charge to be fair and reasonable it must not result in a margin squeeze. Ofcom does, however, consider that where specific forms of access are required, such as ATM interconnection, it may be necessary to set more detailed rules to implement the pricing approach. In the December consultation Ofcom set out its proposals to set the margin between ATM interconnection and BT's downstream intermediate services. The detail of this rule will be the subject of a separate consultation exercise.

Responses to the April consultation

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

4.52 In general the Altnets have expressed a preference for cost based pricing over retail minus pricing. In addition, many of the respondents who were in favour of cost plus pricing commented that if Ofcom were to continue with its proposals to have retail minus pricing, then it should operate any margin squeeze test on the basis of entrants' costs.

4.53 The key points that have been made are that:

- a) Ofcom has overstated the case for competition in the future;
- b) Setting retail minus is as problematic as setting cost-plus pricing;
- c) Retail minus would result in excessively high charges;
- d) The proposed option is not consistent with regulation of other access mechanisms;

a) Ofcom has overstated the case for competition in the future.

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

Ofcom's response

4.55 In the absence of "hard" evidence about future development of the markets for broadband access and conveyance, Ofcom's assessment of the prospect for competition in the markets is necessarily based substantially on a prospective analysis. However, Ofcom considers that the fact that both BT and the cable operators are still rolling out their networks and that alternative forms of access are also being introduced shows that these are fast changing markets, where market power is not entrenched as in some narrowband markets (see Chapter 3). In addition, the high rate of growth (60% between December 2002-June 2003²⁰) of the retail market for asymmetric broadband services and the still low level of take-up, in absolute terms, are a further sign that these markets will continue growing at a fast pace in the near future. Given that there is a reasonable possibility of development of effective wholesale competition, it is necessary to avoid imposing regulation which might risk deterring this.

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

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

4.57 While it is possible to derive answers to all three, this would only be possible with a relatively high risk of error, so that cost plus charges might be set too high or too low. If the charge were to be set too low, for example, there is a risk it will discourage investment by current incumbents such as BT and the cable companies in product development and upgrades to incorporate the latest

²⁰ Table 5.3 of Oftel's International Benchmarking Study of Internet Access (dial-up and broadband) October 2003

technical advances as well as rollout more generally; and potential entrants, such as operators using LLU or alternative technologies such as fixed wireless, powerline, 3G or satellite.

4.58 The second outcome would have an adverse effect on the development of competition in wholesale broadband access. Ofcom does not know precisely the extent of future competition but the key issue is to avoid, through regulation, the elimination of that competition. By contrast, if the charge is set too high there is a risk it will discourage take up of the service and, therefore, investment in downstream services by competing providers. It would also be likely to raise the overall level of broadband internet access prices at the retail level.

4.59 In these circumstances, Ofcom prefers to rely on a methodology that protects downstream competitors, while leaving the regulated firms to set the charges according to their commercial judgement. In addition, Ofcom does not agree that a policy that tries to ensure the development of infrastructure competition contradicts Ofcom's technology neutral stance. It believes that it is more likely to indicate the opposite as it guarantees that the correct price signal is given to all those who enter the markets for wholesale broadband access.

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

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

Ofcom's response

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

4.62 In response to the view that setting a margin would be as difficult as setting cost based pricing, Ofcom would reiterate that it is not simply a question of complexity. There are other important considerations such as the risks of regulatory failure and the consequences of this for future competition as set out above.

c) Retail minus would result in excessively high charges

4.63 Energis has suggested that retail minus pricing will result in prices being kept artificially high. Another respondent has alluded to the potential risk of BT, in the absence of cost plus pricing, charging excessive prices. C&W suggest that

Ofcom should accept that LRIC+ might lead to higher prices in the short run but recognise that it would result in more competition and therefore lower prices in the medium to long term. C&W also suggest that retail minus pricing reduces incentives to reduce retail prices to reflect any efficiencies or cost reductions and therefore that only BT benefits.

Ofcom's response

4.64 In certain markets in which LRIC plus prices have been set the issue of excessive prices was a key consideration. However, these markets were relatively mature compared with the wholesale broadband access markets. The issue of what constitutes excessive profitability in immature markets such as wholesale broadband access markets is a difficult question to answer with any degree of certainty for the reasons explained above in relation to the difficulties of setting a cost based charge. Respondents have not provided any information to substantiate their views that excessive profitability is a problem in the current circumstances. Given the difficulties in establishing costs and profitability in wholesale broadband access markets and the adverse consequences of setting too low a price, as discussed in paragraphs 4.48-4.49, Ofcom believes that in the current circumstances the focus of its intervention should be more on leverage into downstream markets than the potential risk of excessive pricing. It should also be noted that Network Access in the markets identified in this market review should be provided on fair and reasonable terms, charges and conditions.

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

4.65 C&W has argued that ADSL is an access mechanism in the same way as PPCs are and therefore should be price controlled in the same way.

Ofcom's response

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

Responses to the December consultation

4.67 Many of the respondents to the December consultation referred to the same issues raised last time. Overall, the Altnets supported cost plus pricing although, in the absence of such pricing, setting a specific margin was welcomed. Those supporting this proposal, however, raised a variety of issues for Ofcom to consider in setting this margin. Furthermore, many put forward views on the margin setting exercise Ofcom is currently undertaking. The points raised will be considered as part of that exercise and respondents will have another

opportunity to comment on the subject when a draft Direction is published for consultation later this month.

4.68 Despite their support for the margin setting proposal, both UKCTA and the BIG have suggested on behalf of their members that Ofcom should nonetheless keep open the prospect of introducing cost based pricing at some point in the future. Specifically, BIG has asked that Ofcom look at introducing cost based pricing in 12 months' time when it will be in a better position to assess the efficacy of its chosen remedy.

Ofcom's response

4.69 Ofcom has clearly explained its decision for imposing retail minus pricing as opposed to cost plus pricing during the lifetime of this review. In the current environment it would not be appropriate to impose cost based pricing. Nonetheless, as explained previously Ofcom will carry out reviews of these markets in the future. If it emerges in 18-24 months time that the remedies implemented by this Review have not addressed the issue of BT's SMP then Ofcom will consider whether alternative remedies are required.

4.70 Ofcom will address respondents' responses on the issue of margin setting and whether to use BT's or entrants' costs in that consultation exercise.

Ofcom's conclusions on pricing approach

4.71 Ofcom considers that retail minus is the most appropriate pricing approach. Ofcom fully recognises that many respondents would prefer that LRIC-plus was used to set the charges in the markets covered by this review. It is clear that respondents think it will provide them with greater transparency, stability and certainty. There is also the perception that it may, in some cases, lead to lower prices. Ofcom believes that, given the nature of the market, a correct and reliable assessment of the cost and of the rate of return would be difficult and that there is too high a risk of incorrectly determining a charge so as to be materially damaging to the prospects for competition in the market. Ofcom's view is that the main concern is that, since BT is vertically integrated, it could squeeze the margin between the wholesale products, in whose provision it has market power, and the downstream ones, thus preventing other operators from competing in downstream markets. Hence Ofcom believes that retail minus is the most appropriate pricing approach since it addresses the primary concern about the margins between the relevant products rather than absolute level of charges. In addition, retail minus avoids the risk of adversely affecting investment in wholesale broadband access markets.

4.72 However, Ofcom recognises the concerns raised by respondents relating to firstly, the certainty and predictability of the test to all players and secondly, whether economies of scale might predetermine the outcome of the competitive

process. Accordingly, Ofcom is taking account of these under its proposals to set the margin between IPStream and Datastream charges. This approach will ensure that the margin between ATM interconnection charges and IPStream prices is not subject to adverse unpredictable changes, thereby fundamentally altering the basis of competition in the Wholesale Broadband Access market. This should provide the market with the certainty necessary to plan future investments and will be the subject of a separate consultation later this month.

4.73 Ofcom considers that the decision to adopt a retail minus approach meets the requirements of Section 88 of the Act. From the market analysis it appears to Ofcom that there is a relevant risk of adverse effects arising from pricing distortions. In particular, the market analysis has shown that BT or Kingston might be in a position to impose a price squeeze so as to have adverse effects for end users by reducing the choice available to them downstream. In the light of this analysis, Ofcom is of the view that such an approach is appropriate. In particular, such an approach ensures little risk of any adverse effects on the market arising from price distortion. The pricing approach is also appropriate for the purposes of promoting efficiency, sustainable competition and conferring the greatest possible benefits on the end users of public electronic communications services. Ofcom has also taken into account the extent of the investment required to meet this condition and has concluded that it does not impose an undue burden on BT. The pricing approach addresses the risk that BT will impose a price squeeze which might have adverse consequences for end-users of public electronic communications services.

Communications Act tests

4.74 Ofcom considers that this pricing approach meets the tests set out in the Act. In imposing retail minus Ofcom has considered all the Community requirements set out in Section 4 of the Communications Act. In particular, the condition is aimed at promoting competition and securing efficient and sustainable competition by ensuring that charging for wholesale services enables operators to compete downstream. Ofcom considers that this approach is objectively justifiable and a proportionate response to the extent of competition in the markets analysed, as it ensures that BT and Kingston are unable to exploit their market power and enables competitors to develop competing services to those of BT and Kingston in downstream markets to the benefit of consumers, whilst at the same time ensuring incentives to invest on BT, Kingston and alternative suppliers are not adversely affected. It does not unduly discriminate, as it is proposed for both BT and Kingston and no other operator has SMP in these markets. Finally, it is transparent in that it is clear in its intention to ensure that BT and Kingston sets charges on a retail minus basis.

Requirement not to discriminate unduly – SMP condition EA2 and EB2

4.75 Section 87(6)(a) of the Act authorises the setting of an SMP services condition requiring the dominant provider not to unduly discriminate against particular persons, or against a particular description of persons, in relation to matters connected with the provision of network access.

4.76 The requirement not to unduly discriminate is intended, principally, to prevent dominant providers from discriminating in favour of their own retail activities and to ensure that competing providers purchasing wholesale products from the dominant provider are placed in an equivalent position to the dominant provider's retail arm.

4.77 Where dominant providers are vertically integrated, like BT and Kingston, they may have an incentive to provide wholesale services on terms and conditions that favour their own retail activities, in a way that would have a material adverse effect on competition. In particular, they may charge competing providers more than the amount charged (through transfer charging) to their own retail activities for wholesale services, thereby increasing the costs of competing providers and giving themselves an unfair competitive advantage. They might also provide services on different terms and conditions, for example with different delivery timescales, which would disadvantage their retail competitors and in turn consumers.

4.78 In the absence of a non discrimination condition, Ofcom could be called upon to investigate alleged breaches of the Competition Act/ EC Competition Law prohibition on anti-competitive agreements and abuse of a dominant position, and might be required to resolve successive complaints. Imposing an *ex ante* condition in this instance will reduce the potential regulatory costs emanating from multiple or successive complaints related to discrimination.

4.79 It could be argued that the Competition Act/ EC Competition Law might provide adequate provision to address allegations or evidence of discriminatory behaviour. However, Ofcom considers that at the wholesale level sectoral regulation provides a faster and more secure means of giving effect to decisions and determinations. In addition, it allows Ofcom to place a greater emphasis on promoting competition (for example by restricting the ability of an SMP operator to target segments of the retail market).

4.80 Ofcom therefore considers that it is necessary to apply a non discrimination obligation in this market. This accords with Recital 17 of the Access Directive, which states that non discrimination obligations ensure that undertakings with market power do not distort competition, in particular where they are vertically integrated undertakings that supply services to undertakings with whom they compete on downstream markets. This is clearly the case with respect to the wholesale broadband access markets.

4.81 A prohibition of discrimination might have disadvantages if it prevented discrimination that was economically efficient or justified. However, the condition provides that there should be no *undue* discrimination. Oftel considered how it might treat undue discrimination in its Access Guidelines. Oftel's Access Guidelines note that the application of a condition prohibiting undue discrimination does not mean that there should not be any differences in treatment between undertakings, rather that any differences should be objectively justifiable, for example, by differences in underlying costs of supplying different undertakings. The statement also notes that in Ofcom's view, there is a rebuttable presumption that a vertically integrated SMP operator discriminating in favour of its own retail activities or between others of its own activities would have a material adverse effect on competition. This view would also apply to discrimination in relation to the underlying components of services. Proposals for setting margins between ATM Interconnection and IPStream will also limit this problem and should help in assessing any allegation of non-discrimination. It should be noted that Ofcom intends to consult on non-discrimination guidelines later on in 2004.

Responses to the April consultation

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

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

4.84 The response of the Altnets was generally supportive of a condition preventing BT and Kingston from discriminating. There was some concern amongst respondents that the burden of proof in showing that discrimination was 'undue' was too high and similar to that required by *ex post* regulation. Many respondents therefore supported the idea that there should be a rebuttable

presumption that any discrimination by a vertically integrated SMP operator in favour of its own retail activities would have a material effect on competition. C&W suggested that structural separation would address the potential for discrimination. A respondent also argued that LRIC plus pricing would remove the potential for discrimination.

Ofcom's response

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

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

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

Responses to the December consultation

4.87 BT is concerned that no Communications Provider will be in a position to gain a first mover advantage from their innovation over the BT network if these proposals are implemented whereby the requirement to not discriminate, combined with the three month notification period, enables all third parties to replicate a new service at time of launch. This is because it cannot offer different terms to any one provider.

4.88 BT has commented that the inclusion of Condition EA2.2 seems to be superfluous in that the operative part of this clause is already contained in Condition EA2.1. BT has proposed that the issue of materiality is contained in the latter and therefore that there is no need for the former. BT has also commented that there is a discrepancy in the way the condition is worded for Kingston and for BT.

4.89 BT also raised concerns that the term ‘matters connected with Network Access’ is vague and undefined in scope. Furthermore, BT considers that it should have full freedom to innovate and provide services as it chooses outside specific rules on discrimination where the provision of access services as inputs into downstream services which form no basis of the regulatory regime is concerned.

4.90 In its response to the December consultation, the BIG has cited some examples of activities, associated with the provision of inputs to intermediate services used by ISPs generally and wholesale products, used by operators, about which it has requested that Ofcom be clear that these are likely to constitute ‘undue discrimination’.

Ofcom’s response

4.91 Ofcom does not agree with BT’s concern that no operator will be able to gain from a first mover advantage from their innovation over the BT network. The aims of *ex ante* regulation in this market are to promote wholesale competition and facilitate direct competition downstream with BT. Ofcom believes that operators, by interconnecting with BT, will be able to offer differentiated products and not be as reliant on BT for product specifications as they are currently.

4.92 In response to BT’s comment that the reference to materiality in EA2.2 is superfluous, Ofcom considers it is necessary to retain this reference for the purposes of clarification. Ofcom acknowledges that there is a discrepancy in the drafting between BT and Kingston which was not intentional. The two obligations have been brought into alignment.

4.93 Ofcom does not accept BT’s comment that the obligation is ‘vague and undefined’; the scope of regulation is clearly defined with reference to the relevant markets which are clearly set out in Chapter 2

4.94 In response to the request from the BIG to be clear in relation to particular activities it has set out in its response, Ofcom does not believe this would be appropriate in this Statement. However, Ofcom is due to publish guidance on what it considers to be ‘undue discrimination’ later this year.

Ofcom’s conclusions

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

Communications Act tests

4.96 Ofcom has considered its duties under Section 3 of the Act and all the Community requirements set out in section 4. In particular, because BT and Kingston are required to provide the necessary access products, the condition encourages the provision of network access and service interoperability for the purpose of efficiency and sustainable competition in the downstream markets by ensuring that those communications providers with SMP do not unduly discriminate. This is necessary to ensure that there is a competitive 'level playing field'. As BT and Kingston both have market power in the provision of wholesale asymmetric broadband origination, it controls a key input into a range of downstream services – principally asymmetric broadband internet access. In requiring this condition, Ofcom is promoting competition and the interests of consumers and maximising choice in the markets for those downstream services.

4.97 Section 47(2) requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. Ofcom considers that this condition is objectively justifiable, in that it provides safeguards to ensure that competitors, and hence consumers, are not disadvantaged by BT and Kingston discriminating in favour of their own retail activities or between their own different activities. It does not unduly discriminate, as it is imposed on BT and Kingston and no other operator has SMP in these markets. It is proportionate since it only prevents behaviour which is unduly discriminatory. Finally, it is transparent in that it is clear in its intention to ensure that BT and Kingston do not unduly discriminate. In addition, Ofcom has given guidance as to how it might treat undue discrimination in its Access Guidelines.

4.98 Further Ofcom considers that imposition of this condition satisfies the conditions set out in Section 87 of the Communications Act. In particular, that it is fair and reasonable to impose this condition in the interests of effective competition, as it will ensure that other operators are able to make effective use of wholesale inputs and offer products based on these wholesale inputs in competition with BT and Kingston. In addition it will address the goal of ensuring that services based on wholesale broadband access are provided throughout the UK.

Transparency

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

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

Requirement to publish a reference offer – SMP condition EA 3 and EB3

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

4.101 The published RO must include, amongst other things:

- a clear description of the services on offer;
- terms and conditions including charges and ordering, provisioning, billing and dispute resolution procedures . The RO should provide sufficient information to enable providers to make technical and commercial judgements such that there is no material adverse effect on competition;

- information relating to technical interfaces and points of interconnection. Such information should ensure that providers are able to make full and effective use of all the services provided;
- conditions relating to maintenance and quality (service level agreements and guarantees). The inclusion of service levels, as part of the contractual terms of the RO, that provides for a minimum acceptable level of service, will ensure that services are provided in a fair, reasonable, timely and non-discriminatory fashion; and
- terms and conditions that are fair and reasonable. This will ensure that products are offered on terms and conditions as they would in a competitive market and that they are sensible, practical, and do not impose a margin squeeze on competitors.

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

Responses to the April consultation

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

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

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

Ofcom's response

4.106 Ofcom recognises that it is in BT and Kingston's interests to ensure that its customers have sufficient information to make full and effective use of its service. However, it also believes that industry needs the certainty that an *ex ante* regulation requiring the publication of a reference offer will support. Ofcom does not accept that *ex post* regulation would be suitable here.

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

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

Responses to the December consultation

4.109 BT has stated that it is inappropriate for internal transfer charges to be published as part of the reference offer since Ofcom, it argues, can investigate any suspected breach of treatment under the Competition Act/ EC Competition Law and regulatory dispute procedures. Additionally, the existence of accounting separation obligations provides sufficient financial information and therefore this condition is an unnecessary administrative burden and should be dropped.

4.110 BT has also commented that there will be circumstances where a third party reasonably seeks a contract which has some variations from the basic terms and conditions and BT would like some flexibility in this eventuality.

4.111 BT considers that EA3.6(a), which states that publication is effected by placing a copy on a relevant website, is sufficient to cover the requirement to publish a reference offer and therefore that Condition EA3.7, which states that the Dominant Provider shall send a copy of the current version of the RO in response to a written request, is an onerous administrative burden. BT suggests

a reasonable compromise would be to allow the relevant document to be downloaded from the web.

Ofcom's response

4.112 Ofcom considers that this SMP condition is necessary to ensure that BT's competitors have visibility of the prices BT Retail is paying for the services it receives on an ongoing basis, in order to ensure that the condition preventing undue discrimination is being adhered to. Retrospective publication in BT's statement of regulatory accounts would be insufficient in this context. The publication of transfer charges in BT's reference offer will impose little if any additional burden on BT, since the charges would otherwise have needed to be prepared (albeit at a later date) for publication in its regulatory accounts.

4.113 Ofcom added additional wording to EA3.3 and EB3.3 (for Kingston) to make clearer the obligation which requires the Dominant Provider to publish a reference offer in relation to the network access that it provides to itself, where the manner of provision differs from that detailed in its reference offer for other communications providers. Ofcom would expect the former to contain, amongst other things, full details of the service provided, together with details of network components and usage factors, in equivalent language to that used in its reference offer to other communications providers, in order that proper comparisons can be made.

4.114 Ofcom acknowledges that there is a case for some flexibility in circumstances where a third party reasonably requests some variations from basic terms and conditions. However, BT should bear in mind that the fundamental aim of this obligation to ensure transparency. BT should not depart from the requirement to provide a minimum set of terms.

4.115 Ofcom does not agree with BT that Condition EA3.7 is an onerous administrative burden. This Condition is there to ensure maximum transparency for Communications Providers.

Ofcom's conclusions

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

Communications Act tests

4.117 Ofcom has considered all the European Community requirements set out in Sections 3 and 4. In particular, the condition encourages compliance with the

requirement not to discriminate unduly, for the purpose of facilitating service interoperability and securing freedom of choice for the customers of communications providers. It promotes the interests of purchasers of wholesale asymmetric broadband origination services by enabling them to adjust their downstream offerings in competition with BT, in response to changes in BT's terms and conditions. Finally, it will allow Ofcom to monitor discrimination, more easily, so ensuring competition in the downstream markets.

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

4.119 Ofcom considers that the condition satisfies the tests set out in section 47 (2) of the Act. It is objectively justifiable, in that it relates to the need to ensure that competition develops to the benefit of consumers. It does not discriminate unduly between different operators since it applies to both BT and Kingston, who, Ofcom has concluded, both have SMP. It is proportionate in that only information that is necessary to ensure that there is no material adverse effect on competition is required to be provided. The condition meets the test of transparency set out in the Communications Act since it is clear that the condition is designed to ensure that potential competitors have sufficient information to make investment decisions about entry into this market.

Requirement to notify charges, terms and conditions – SMP condition EA 4 and EB4

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

4.121 BT and Kingston are currently required to give advance notification of price changes for certain products as part of its Standard Interconnect agreement (one day for competitive products, 28 days for prospectively competitive products and 90 days for non competitive products). This obligation would create a requirement for advance notification of changes to prices, terms and conditions of wholesale asymmetric broadband origination services.

4.122 Both BT and Kingston have been identified as having SMP in these markets. Advance notification will give communications providers the opportunity to respond to prices, creating a 'ripple effect' that passes price reductions down to end users. Customers may take the opportunity to consider changing suppliers.

4.123 It might be argued that an obligation to provide advance notification of prices could lead to a 'chilling' effect where other communications providers follow BT's prices rather than act dynamically to set competitive prices in the wholesale broadband access market. However, given that Ofcom's primary aim is to address the consequences for downstream markets of BT's market power in this market, it does not believe that this consideration will undermine imposition of this obligation.

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

4.125 As noted above, Ofcom considers that transparency obligations, which include notification of prices, accord with Recital 16 of the Access Directive, which states that transparency of terms and conditions for access and interconnection, including prices, serves to speed up negotiation, avoid complaints and give confidence to market players that a service is not being provided on discriminatory terms.

Responses to the April consultation

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

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

Ofcom's response

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

4.129 In response to Altnets' concern Ofcom has added additional wording in EA4.5 and EB4.5 (for Kingston) to make clearer the obligation on BT to notify terms and conditions in relation to the provision of products by BT Wholesale to BT's retail businesses. Ofcom would expect the former to contain, amongst other things, full details of the service provided, together with details of network components and usage factors, in equivalent language to that used in its reference offer to other communications providers, in order that proper comparisons can be made.

Responses to the December Consultation

4.130 A respondent has commented that the Access Contract is not defined.

Ofcoms' response

4.131 Access Contract is defined in the Communications Act at section 87 (12)

Ofcom's conclusions

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

Communications Act tests

4.133 Ofcom considers that the condition meets the tests set out in Section 47 (2) of the Act. The objective justification for imposing the condition is that general and reliable visibility of a dominant operator's prices is needed to enable Ofcom and competitors to monitor BT's prices for possible anti competitive behaviour. Imposition of this condition does not discriminate unduly against BT as it is the only operator in the market with SMP; the behaviour of other operators is not capable of having a materially adverse effect on competition as these operators do not have market power. The remedy is proportionate, as 28 days is considered the minimum period necessary to allow competing providers to plan for changes to terms, conditions and charges, and the requirement is made fully transparent in Annex E.

4.134 Ofcom has considered its duties under section 3 of the Act and all the Community requirements set out in section 4. In particular, the condition

encourages compliance with transparency, for the purpose of facilitating service interoperability and securing freedom of choice for the customers of communications providers. It promotes the interests of purchasers of wholesale asymmetric broadband origination services by enabling them to adjust their downstream offerings in competition with BT, in response to changes in BT's terms and conditions. It also promotes competition in the asymmetric broadband origination market by allowing BT's competitors in the provision of asymmetric broadband origination services to make appropriate changes to their products. Finally, it will allow Ofcom more easily to monitor discrimination, thereby ensuring competition in the downstream markets.

4.135 Ofcom considers that imposing this obligation satisfies the conditions set out in section 87 of the Act. Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition in the long term, by ensuring communications providers have access to transparent information that enables them to make effective use of wholesale inputs and offer products based on these wholesale inputs in competition with BT. In addition it will address the goal of ensuring that services based on wholesale broadband access are provided throughout the UK.

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

4.136 Section 87(6)(b) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information for the purpose of securing transparency. The condition imposed by Ofcom in Annex E (EA5) requires BT to publish such information in the manner and form required by Ofcom. This obligation requires BT to publish certain information relating to the quality of the service it delivers in providing services falling within the wholesale broadband access markets.

4.137 Where BT has significant market power in a specific wholesale market, it has the potential to leverage this into downstream retail markets, by providing a different Quality of Service to different wholesale customers. This could have a material impact on competition in retail markets, ultimately to the detriment of retail customers.

4.138 Whilst it may be possible to address these concerns by requiring BT to provide wholesale services to other communications providers using the same operational processes and interfaces it uses to supply itself, the high cost of replacing legacy systems means that this will not always be practical. Instead, Ofcom considers that the most objectively justifiable and proportionate means of meeting this condition is to require BT to publish a set of Key Performance Indicators (KPIs) for key wholesale products. By providing transparency, BT's competitors will be able to identify where potential discrimination exists.

4.139 In its Explanatory Memorandum and draft Directions, Proposed Requirement on British Telecommunications to publish Key Performance Indicators, published in May 2004, Ofcom sets out its detailed proposals for the format and frequency of a set of KPIs, including proposals in relation to wholesale broadband access market. The scope of the proposed publication takes account of the potential conflict between any obligation to publish performance data, in order to provide transparency, and the need to maintain commercial confidentiality.

4.140 The requirement to publish a set of KPIs does not apply to Kingston Communications as the Quality of Service condition applies only where there is sufficient demand for the wholesale service in question such that the data provided will be statistically meaningful. Kingston does not currently supply wholesale asymmetric broadband origination services at the moment but Ofcom would expect Kingston to consider the issue of KPIs if and when it engages in commercial negotiations to offer such services.

4.141 Ofcom considers that the Quality of Service Condition imposed by Condition EA5 and the ensuing draft Directions for a proposed set of KPIs, meet the tests set out in the Act. Ofcom has considered its duties under section 3 of the Act and all the Community requirements set out in section 4. In particular, the Condition encourages the provision of network access and service interoperability for the purpose of securing the maximum benefit for the persons who are customers of communications providers and of persons who make such facilities available. It promotes competition and thereby the interests of end users in downstream markets, by denying BT as the dominant provider in this market the opportunity to discriminate in the quality of service it provides to customers.

Responses to the December consultation

4.142 Responses to the previous consultations have been dealt with in the context of the separate consultation exercise Ofcom is undertaking on KPIs. In response to the December consultation, BT has commented on Ofcom's decision not to impose a similar obligation on Kingston, suggesting that such transparency would be useful for Kingston's retail customers even if there were currently no wholesale customers. Ofcom does not believe this is the purpose of publishing KPIs and in any case would argue that such an obligation on retail services would be outside the scope of the market review.

Communications Act tests

4.143 It is Ofcom's current view that the quality of service condition set out in this consultation satisfies the relevant requirements specified in section 47 (2) of the Act. In particular, Ofcom has considered the duty to promote competition. In addition, Ofcom considers that :

- The condition is objectively justifiable because it is the only means of ensuring that a dominant operator provides an equivalent quality of service to other operators as it provides to itself. This is necessary in order to prevent a vertically integrated operator, with market power in a particular wholesale market, leveraging this into a downstream market.
- The condition does not unduly discriminate against a particular person because it applies to the dominant provider in circumstances where there has been an SMP determination. In the case of the dominant provider, the supply of wholesale services must be in sufficient volume for the publication of KPI data to be statistically meaningful. Ofcom considers that this is not the case in relation to Kingston.
- The condition is proportionate to what it is intended to achieve because the dominant provider will only be required to publish data on a small number of KPIs representative of key business processes, rather than a complete set of KPIs, covering all aspects of operational performance.
- The condition provides transparency in relation to what it is intended to achieve because the objective of the condition relates to the problem identified in the market, and inter alia it is aimed at ensuring non-discrimination specifically in relation to the quality of service provided by the dominant provider in respect of its key business processes.

4.144 In addition, Ofcom considers that imposition of this condition satisfies the conditions set out in Section 87(4) of the Communications Act. In particular, given the potential for the development of alternative facilities in the current market, Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition in the long term, as it will ensure that communications providers are able to make effective use of wholesale inputs and offer products based on wholesale broadband access

Requirement to notify technical information – SMP condition EA 6 and EB5

4.145 Section 87(6)(c) of the Act authorises the setting of SMP services conditions requiring the dominant provider to publish, in such manner as Ofcom may direct, the terms and conditions on which it is willing to enter into an access contract. Section 87(6)(b) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information for the purpose of securing transparency.

4.146 Under the Condition 'Requirement to publish a reference offer', BT will be obliged to publish a Reference Offer for Network Access, which amongst other things, contains a description of the Network Access to be provided, including technical characteristics; the location of the points of Network Access; and technical standards for Network Access. The Condition sets out the number of

days within which a reference offer, or amendments to that reference offer, must be published. For example where BT amends its Reference Offer in respect of high bandwidth asymmetric broadband origination services it must publish an amended version 28 days before the amendment comes into effect. However, the Condition 'Requirement to publish technical information' sets out additional obligations to publish new technical information at least 90 days in advance of entering into a contract to provide the new Network Access, or amendments to existing technical terms and conditions at least 90 days before those amended terms and conditions come into effect.

4.147 As set out above, the information to be published under this Condition comprises new or amended technical characteristics (including information on network configuration where necessary to make effective use of the Network Access), locations of the points of Network Access and technical standards (including any usage restrictions and other security issues). Relevant information about network configuration is likely to include information about the function and connectivity of points of access, for example the connectivity of exchanges to end users and other exchanges.

4.148 The proposals in this Condition are important to ensure that communication providers to whom Network Access is being provided by BT are able to make effective use of that Network Access. Changes to technical information must be published in advance so that communications providers have sufficient time to prepare. For example, a competing provider may have to introduce new equipment or modify existing equipment to support a new or changed technical interface. Similarly, a competing provider may need to make changes to their network in order to support changes in the points of network access or configuration.

4.149 Ofcom's view is that 90 days is the minimum time that competing providers will need to modify their network to support a new or changed technical interfaces or support a new point of access or network configuration. Therefore, Ofcom has concluded that in the market for wholesale asymmetric broadband origination services, BT must publish any new or modified technical characteristics, points of network access and technical standards at least 90 days in advance of either BT entering into a contract to provide new Network Access or making technical changes to existing Network Access, unless Ofcom consents otherwise.

Responses to the April consultation

4.150 Again, as in relation to the previous obligation to publish a reference offer, BT has commented that it is in its own commercial interests to publish the technical interface information relating to its services and that *ex ante* regulation is unnecessary. BT recognises that 90 days is consistent with BT licence condition 15 on interface notification periods but suggests that this should only apply where

the equipment is non-standard and that for equipment that meets international or industry standards 28 days would be sufficient. BT requests that the condition is specifically reworded to reflect this rather than rely on Ofcom's discretion as proposed in the Condition in the April consultation. Furthermore, BT argues that the UK has excessive notification periods compared to the rest of Europe and that the UK should be more aligned to other NRAs.

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

Ofcom's response

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

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

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

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

Responses to the December consultation

4.156 BT has commented that a large number of the developments being made by BT for wholesale broadband services are to meet the requests of other operators and the implications of a long technical notification period are that no contracting party can gain any downstream advantage from the results of their own innovative ideas.

4.157 BT is disappointed that Ofcom concluded that there was no difference between interface notification and technical notification of the features of the products. BT considers that it is unreasonable to provide 90 day notification periods for interfaces widely standardised through bodies such as ETSI and widely available in the market place.

4.158 BT has also commented that it makes technical notifications freely available on its website and that a new requirement to provide technical updates is onerous.

Ofcom's response

4.159 In response to BT's point about the inability of any of BT's contracting parties to gain a downstream advantage, Ofcom would again point to the fact that as competition develops at the wholesale level communications providers will not need to rely on BT specified products to offer differentiated services downstream.

4.160 Given its willingness to reduce the standard period of notice, Ofcom stands by its decision to impose at least a 90 day standard notification period for both technical and interface changes. Ofcom does not agree that a requirement to provide technical updates is onerous given that the provision of such updates is subject to a reasonable charge.

Ofcom's conclusion

4.161 Having considered the consultation responses and noted BT's concerns about excessive notification periods, Ofcom has decided to impose condition EA6 and EB5 on BT and Kingston respectively, which requires a minimum of 90 days for provision of technical information. Whereas the draft of Condition EA6.1 in the Second Consultation Document required the notification of new technical information a minimum of 90 days in advance of providing new wholesale services or amending existing technical terms and conditions. Ofcom considers that there may be instances where BT or Kingston, to meet its obligations under their obligations to provide Network Access on reasonable request, should provide a period of longer than 90 days. For example, if BT or Kingston were to make a major change to their technical terms and conditions, a period of more than the 90 day minimum notification period may be necessary. Therefore, Ofcom has amended EA6 to include a reference to publishing a notice

“within a reasonable time period but not less than 90 days” before providing the new wholesale services or amending existing technical terms and conditions. Ofcom believes that 90 days is a practical standard period and notes that it is able and willing to consent to a shorter period in justified circumstances. Equally, where longer notice is reasonably required, it must be given.

Communications Act tests

4.162 Ofcom considers that the Condition meets the tests set out in the Act. Ofcom in proposing the Condition has considered all the Community requirements in section 4 and in particular the requirement to promote competition and to encourage service interoperability for the purpose of securing efficient and sustainable competition and the maximum benefits for consumers by ensuring that providers have sufficient notification of technical changes to BT’s network to enable them compete.

4.163 Section 47 (2) requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The condition is objectively justifiable in that it enables competing operators to make full and effective use of Network Access. It does not unduly discriminate in that it is imposed on both BT and Kingston and no other operator has SMP in these markets. It is proportionate in that in most circumstances 90 days is the minimum necessary to allow competing providers to modify their networks and any extension would be required only where it was reasonable to do so. It is transparent in that it is clear in its intention that BT and Kingston notify technical information as set out above.

4.164 Ofcom considers that imposing this obligation satisfies the conditions set out in Section 87 of the Act. In particular, Ofcom considers that it is fair and reasonable to impose this condition in the interests of effective competition in the long term, by ensuring communications providers can make effective use of wholesale inputs and offer products based on these wholesale inputs in competition with BT. In addition it will address the goal of ensuring that services based on wholesale broadband access are provided throughout the UK.

Consultation on interfaces

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

4.166 However, Ofcom recognises that Communications Providers are constrained in their choice of interface by the standardised nature of most communications equipment. In addition, Ofcom believes that the scope for further modifications to traditional PSTN equipment, where BT was most likely to be able

exert control over interface specifications, is likely to be limited in the future, as operators and equipment manufacturers increasingly look to other technologies.

4.167 Therefore, Ofcom now considers it unlikely that BT would be able to exert control over interfaces in a way that could have an adverse effect on competition. Consequently, Ofcom does not believe that imposing a condition requiring consultation on interfaces would be proportionate.

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

4.167 The draft notification summarised Ofcom's proposals for regulation of the statement of requirements ("SOR") process, following consultation with industry. The SOR process forms part of BT's obligation to provide Network Access in all markets in which it has SMP. The SOR process and associated timescales are the same in all of these markets.

4.168 Ofcom considered that there was evidence in the markets in this review that BT's current SOR process was not working sufficiently well and that there was a need to improve BT's response to requests for network access. There was evidence from disputes referred to Ofcom since April 2002 of instances where the introduction of new products and services had been delayed by the unavailability of feasibility studies and other information which Ofcom would normally expect to be collected during the SOR process. These disputes included, for example, *Software rearrangement - Energis Determination request*, Ofcom case CW/00542/08/02; *Indirect access dispute between BT and Cable & Wireless*, CW/00590/01/03; *PPCs - request for Determination from Cable and Wireless*, CW/00514/04/02, *Dispute between THUS plc and BT about the IN dip retention charge for NTS and SurfTime calls to numbers on 1k blocks*, CW/00661/07/03.

4.169 Other communications providers need clarity and certainty about the SOR process. Clear guidelines from BT and the provision of necessary information for the purposes of making a request for Network Access should speed up the SOR process to the benefit of communications providers that require wholesale inputs from BT. An improved process will also enable BT to set a reasonable standard for requests and reject inadequate requests. It should also assist with the timely resolution of disputes, since the nature of the dispute should be clearer and it should be able to be brought in a more timely manner than at present. Accordingly, Ofcom considers that *ex ante* regulation of BT's SOR process is appropriate.

4.170 Ofcom considers that the process should apply to modifications to existing Network Access as well as to completely new forms of Network Access. Ofcom would not however expect the process to apply to requests for standard Network Access products offered by BT where the requesting electronic communications provider does not already have the product. Ofcom also notes that requests for

modifications on existing Network Access are likely to be less complex and should be able to be dealt with relatively quickly.

4.171 The regulated process set out is designed to accompany the obligation for BT to meet all reasonable requests for access in specific markets in EA1. Ofcom acknowledges that a request for a wholesale product could take the form of a request for a new pricing structure or amount to the provision of certain billing information. Therefore, for the avoidance of doubt, Ofcom considers that the regulated SOR process does apply to modifications of this type where BT has an obligation to meet all reasonable requests. The process does not cover general requests, not associated with specific requests for access, such as requests to modify general contractual terms.

Responses to the draft notification – SORs

4.172 BT suggested that where concurrent SORs were received for substantially the same product there would be major resource implications for BT. BT advised that in such circumstances it would seek to work with individual communications providers to negotiate a phased approach to the assessment of the SORs.

4.173 Ofcom acknowledges BT's comments on this issue and would be prepared to facilitate discussions between BT and other communications providers where appropriate.

Communications Act tests

4.174 Ofcom has decided to impose this condition pursuant to section 87 (3) and 87(5) of the Act. Specifically, under section 87(5)(a) Ofcom considers that the provisions of this condition will help to secure fairness and reasonableness in the way in which requests for Network Access are made and responded to, by adding clarity and robustness to the process. In addition, under section 87(5)(b) it considers that the provisions will help to secure that the obligations contained within the condition are complied with, within the reasonable periods and at the times set out in the propose condition.

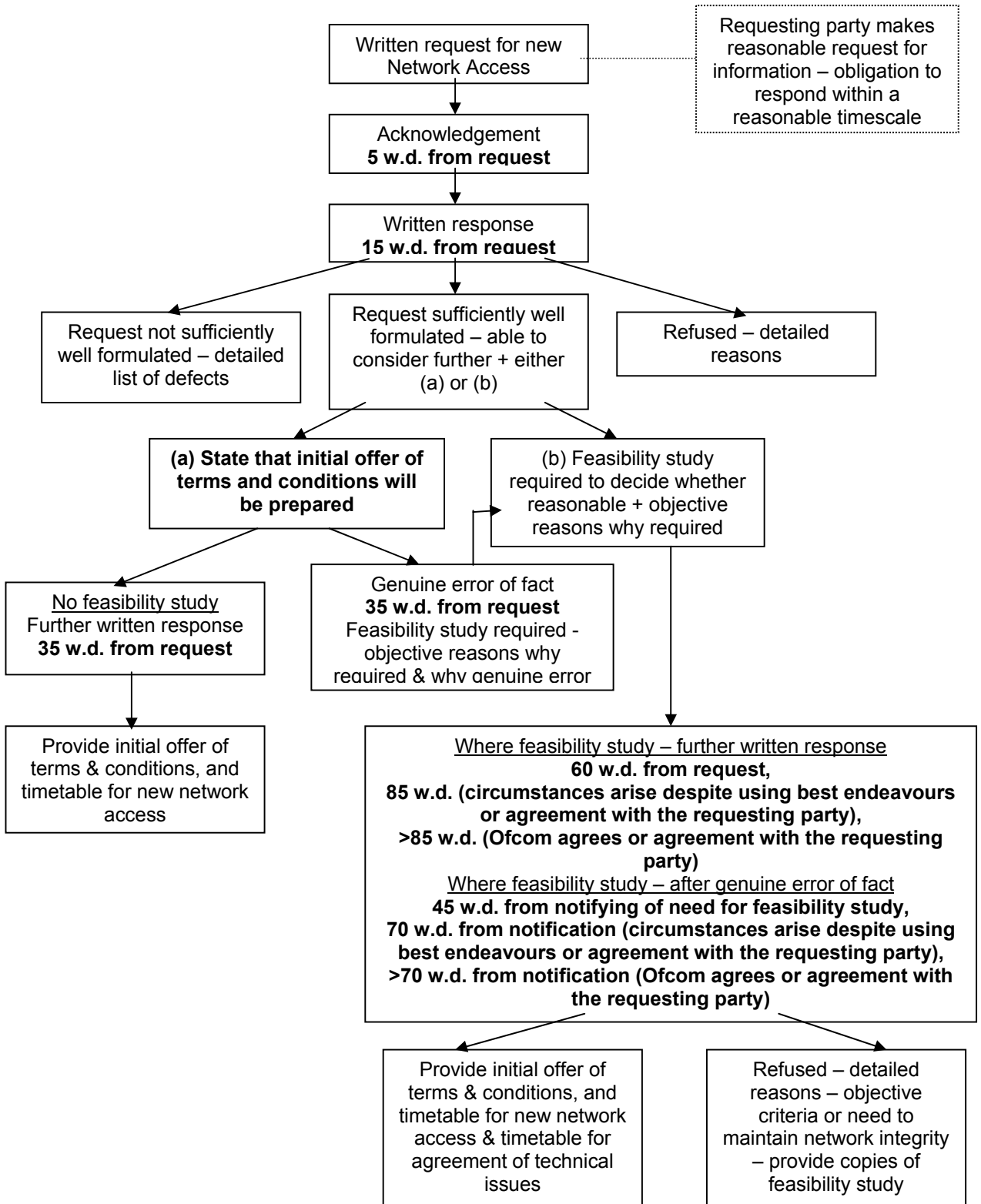
4.175 Ofcom has considered the matters set out in section 87(4). In particular, under section 87(4)(d) it considers that it is fair and reasonable to impose this condition in the interests of effective competition in the long term, as reductions in delays in provision of new products will ensure that communications providers are able to make effective use of BT's network in competition with BT.

4.176 Ofcom has also considered the test for setting conditions set out in section 47 (2) of the Act, namely that this condition is objectively justifiable, does not unduly discriminate, is proportionate and transparent. Ofcom considers that its condition meets these tests. In particular, it is objectively justifiable in the light of the deficiencies in the current process which lead to the delays and lack of clarity discussed above. It would not discriminate unduly against BT because BT has

been found to have a position of SMP in this market and is therefore able to exploit this position to the potential detriment of its competitors both in this market and in downstream markets. Ofcom does not consider that the obligation should be imposed on Kingston since there is not the same level of demand for Network Access in the Hull Area. The condition is proportionate since without it being put in place, BT's competitors would continue to experience problems of the nature already described. Furthermore, it is transparent in its intention to ensure that BT has a reasonable process for dealing with requests for new Network Access.

4.177 Finally, Ofcom, in imposing this condition, has considered all the Community requirements set out in Sections 3 and 4 of the Communications Act. In particular, under section 4(8) Ofcom considers that the provisions help secure efficiency and sustainable competition in the markets in this review. They help to ensure efficiency and sustainable competition by enabling other communications providers to make effective use of BT's network in order to offer their own products.

A flowchart of the conditions is set out below:



Imposition of Accounting separation - SMP condition 10

4.178 Under sections 87(7) and 87(8) of the Communications Act, appropriate accounting separation obligations may be imposed on the Dominant Provider in respect of the provision of network access, the use of the relevant network and the availability of relevant facilities. That is to say, the Dominant Provider may be required to maintain a separation for accounting purposes between such different matters relating to network access or the availability of relevant facilities.

4.179 In paragraph 4.95, Ofcom is imposing an obligation to not unduly discriminate in certain markets on BT and Kingston. This is because where a Dominant Provider is vertically integrated it has an incentive to provide wholesale services on terms and conditions that discriminate in favour of its own retail activities in such a way that may have a material effect on competition.

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

4.181 In relation to BT, these are: asymmetric broadband origination in the UK excluding the Hull area; and broadband conveyance in the UK. In relation to Kingston, the accounting separation obligations will apply to the market for asymmetric broadband origination in the Hull area.

4.182 No responses were received from stakeholders on the issue of accounting separation being imposed in these markets following the publication of the December consultation.

Implementation of regulatory financial reporting conditions

4.183 On 22 May 2003, Oftel published a consultation document on regulatory financial reporting: *Financial reporting obligations in SMP markets: A Consultation on accounting separation and cost accounting systems*. The scope of this consultation was to address the how cost accounting and accounting separation should be implemented. It also addressed the level of granularity required for such obligations to be imposed in a proportionate and appropriate manner. The document proposed conditions for wholesale cost accounting, retail cost accounting and accounting separation.

4.184 Ofcom published a final notification and explanatory statement – *The regulatory financial reporting obligations on BT and Kingston in markets where*

SMP has been demonstrated, 8 April 2004. This document addressed responses made to the consultation and set out Ofcom's amended SMP conditions and directions for regulatory financial reporting. In particular, Ofcom proposed:

- SMP services conditions for regulatory financial reporting on BT (Conditions OA1 to OA34) and Kingston Communications (Conditions OB1 to OB33) covering all forms of regulatory reporting; and
- draft directions under those conditions setting out:
 - the network components to be reported on (draft direction 1);
 - the transparency of the systems (draft direction 2);
 - the financial statements to be prepared and published and the appropriate audit levels (draft direction 3);
 - the form and content of these financial statements (draft direction 4);
 - the fairly presents in accordance with (FPIA) audit opinion (draft direction 5); and
 - the properly prepared in accordance with (PPIA) audit opinion (draft direction 6).

Ofcom expects to implement these conditions and directions after taking into account responses to the 8 April 2004 document (the consultation for which ended on 10 May 2004).

Communications Act tests

4.185 Sections 3 and 4 of the Communications Act sets out the Community requirements for regulation. Ofcom has considered all of the criteria in Section 4 of the Communications Act. In particular, the imposition of an accounting separation obligation would specifically be justifiable and proportionate to promote competition in relation to the provision of electronic communications networks and services; to ensure the provision of network access and service interoperability for the purpose of securing efficient and sustainable competition and the maximum benefit for the persons who are customers of communications providers. This is because the imposition of an accounting separation obligation will ensure that obligations designed to curb potentially damaging market power can be effectively monitored and enforced.

4.186 Section 47 (2) of the Communications Act requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. Ofcom believes that given the importance of non-discrimination in these markets (as described in paragraphs 4.73-4.79) the imposition of an accounting separation obligation is objectively justifiable. That is, in order to ensure that the obligation to not unduly discriminate is met and the benefits are realised, it is essential that Ofcom is able to monitor the obligations via an accounting separation obligation. Furthermore, the accounting separation obligation does not discriminate between

operators of the same class. That is, BT and Kingston are the only Dominant Providers identified by this market review and are the only providers with obligations to not unduly discriminate in their relevant markets.

4.187 In addition, Ofcom consulted on the regulatory financial reporting conditions in the documents *Financial reporting obligations in SMP markets: A consultation on accounting separation and cost accounting systems* (published 22 May 2003) and *The regulatory financial reporting obligations on BT and Kingston in markets where SMP has been demonstrated* (published 8 April 2004). In these documents, Ofcom proposed the processes needed to ensure that the information is fit for purpose, relevant and reliable.

A direction to provide ATM interconnection

4.188 The Network Access SMP condition gives Ofcom the power to make certain directions. The Network Access obligation is framed in technology neutral terms and is defined by the scope of the relevant markets. Under that SMP condition Ofcom requires BT to provide ATM interconnection.

4.189 In the previous Consultation Documents Ofcom proposed that BT should provide ATM interconnection services on a retail minus basis. This builds on the provisions of the *Direction to resolve a dispute between BT, Energis and Thus concerning xDSL interconnection at the ATM switch*, published by Oftel in June 2002. This specified in detail (i.e technology specific terms) the type of interconnection that BT should provide in order to allow operators to compete with it the provision of intermediate services. As a result, since August 2002, BT has been offering ATM interconnection to Communications Providers in general as well as the two parties to the original dispute. Ofcom believes that it is important and appropriate that BT continues to have a specific obligation to provide ATM interconnection on the terms set out in the Direction. The major provisions of this direction include:

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

Product specification

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

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

4.192 This additional functionality consists of the following:

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

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

4.194 An obligation to provide ATM interconnection will provide more certainty than just a more general obligation to provide Network Access, as BT will be required to continue to provide products to a detailed specification agreed by providers. Putting this *ex ante* obligation in place, therefore, avoids the possibility of Ofcom being required to resolve multiple and successive complaints, the resolution of which would duplicate work already undertaken for the ATM Interconnection Direction. To date, there has been no subsequent material change in market conditions to suggest that the requirement should not exist. Carrying forward this recently introduced regulation, therefore, will add to the certainty in this market provided by continuity of the market conditions under which BT and other providers operate. This will help to encourage appropriate investment decisions which will maximise the level of competition in downstream markets.

4.195 This Direction is being made under the Network Access obligation for the wholesale broadband access markets. The Network Access obligation requires BT to provide interconnection upon reasonable request and on fair and reasonable terms, conditions and charges. Because the obligation is defined in relation to the relevant markets, it is technology-neutral. The Direction is, however, technology specific since it requires BT to supply a particular type of interconnection i.e. ATM interconnection. It specifies obligations, which carry forward the existing requirements to provide ATM interconnection brought into force by the original ATM interconnection Direction, as explained in the paragraphs that follow.

4.196 However, as set out in Chapter 2, it is possible that BT's wholesale broadband access network will develop in such a way that IP becomes, at some

point in the future, a substitute for ATM. This would occur if the functionality currently provided by ATM could also be provided by BT's IP network. As stated previously, however, Ofcom believes this is unlikely within the lifetime of this market review and therefore believes that only ATM interconnection needs to be specified. As noted above, any future forms of interconnection which may be the subject of a reasonable request are covered by the Network Access obligation.

Responses to the December Consultation

4.197 BT has perceived that there is a conflict between Annexes 1 and 2 concerning 'VP sharing limits'. In practice, BT has implemented the requirement in Annex 2 which means that it is no longer possible to comply with the text in Annex 1 which, BT believes, is now is redundant.

Ofcom response

4.198 Ofcom agrees with BT since BT has implemented the requirement in Annex 2 (as a result of the existing ATM Direction) the requirement in Annex 1 no longer serves a useful purpose.

Pricing Rule

4.199 In the December consultation, Ofcom proposed to specify the level of the margin such that there was no price squeeze between BT's ATM interconnection charges and its prices for the relevant downstream services (i.e. to set the minus). Ofcom considered that this revised approach should provide greater certainty and transparency to both the operators and BT on the conditions that ATM interconnection charges should satisfy, so as to allow operators to compete effectively in the provision of intermediate and retail broadband services. Ofcom will consider the issues raised by respondents to the December Consultation in the separate consultation it is undertaking specifically on the subject of setting the margin due to be published later in May 2004.

Communications Acts tests

4.200 Ofcom considers the ATM interconnection Direction meets the tests set out in the Act. In carrying forward this Direction Ofcom has considered all the Community requirements set out in Section 4 of the Communications Act. In particular, it has considered the requirements to promote competition and secure the maximum benefits for end users in encouraging the provision of network access and service interoperability. Ofcom considers that it is reasonable to carry forward the obligation on BT to provide ATM interconnection because the provision of network access on this basis will secure efficiency and sustainable competition by enabling communications providers to compete effectively with BT by utilising more of their own networks. Although Ofcom is considering whether

to revise its approach to the margin squeeze test, Ofcom is carrying forward the existing arrangements for ensuring no margin squeeze in relation to the pricing of ATM interconnection until a Direction is published on setting the margin, which is due later this year.

4.201 In implementing a Direction that affects the operation of a condition imposed under Section 49 of the Act, Ofcom must first be satisfied that to do so is objectively justifiable, does not discriminate unduly and is proportionate and transparent. Ofcom considers that this Requirement is objectively justifiable since it is designed to promote greater competition in downstream markets and prevent leveraging of SMP from the markets for wholesale broadband access. The obligation does not unduly discriminate between different operators. The Direction only applies to BT. However; Ofcom does not think it is necessary for Kingston to be subject to the same obligations as BT in relation to this specific type of interconnection. This is because, as far as Ofcom is aware, there is no demand for such a product in the Hull area and to impose any such obligations would be disproportionate. The obligation on BT is, however, proportionate in relation to the objective it is intended to achieve since it is focused on promoting competition in downstream markets. The Direction sets out, amongst other things, details of the product and how it should be priced and therefore meets the test of transparency since it is clear that the obligations are intended to remove entry barriers and encourage alternative communications providers. However, this will be further considered in Ofcom's consultation on setting the margin.

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

The Access Guidelines

4.203 The Access Guidelines state that obligations relating to the supply of wholesale products must be based on the nature of the problem identified, proportionate and justified in the light of the objectives in Article 8 of the Framework Directive. The Direction has been formulated in accordance with the

nature of the problem identified which is BT's SMP in the provision of wholesale broadband access. Section 4 of the Communications Act gives effect to Article 8 of the Framework Directive. As section 4 of the Act has been considered above, further analysis of the objectives of Article 8 is not required. Furthermore, it has already been stated why the ATM Interconnection Direction is proportionate.

Conclusion

4.204 As previously highlighted it is Ofcom's intention to review this market in at least 18 months' time. As well as keeping market conditions under review, as mentioned in Chapter 2, Ofcom will also consider the effectiveness of the remedies set out in this chapter. This will allow Ofcom, for example, to assess whether or not its decision to mandate ATM interconnection on a retail minus basis has been effective in addressing BT's SMP in the wholesale broadband access markets in the UK. As indicated in paragraph 4.65, if this remedy has not been sufficiently effective, and BT's SMP continues, Ofcom may consider that cost-plus pricing may be necessary. Conversely, if the market does develop more competitively, for example, if local loop unbundling does emerge as an effective constraint on BT's SMP then Ofcom will need to consider the value of continuing to regulate the markets for wholesale broadband access.

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

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

Chapter 5

Discontinuation of current regulation

Introduction

5.1 The new Directives allow Member States to carry forward some existing regulation until the market reviews have been completed. The power for Ofcom (previously the Director General of Telecommunications (the “Director”)) to do this is contained in paragraphs 9 and 22 of Schedule 18 to the Communications Act 2003 (the 'Act'). As national regulatory authorities ('NRAs') were not able to notify draft proposals to the European Commission before 25 July 2003, the Director issued continuation notices to relevant communications providers to maintain some of the regulatory regime that existed before that date.

Continued Licence Conditions

5.2 For the markets that are the subject of this market review, specified licence conditions were made to continue in force by a continuation notice given to BT ('BT's Continuation Notice') (http://www.ofcom.org.uk/static/archive/oftel/publications/eu_directives/cont_notices/bt.pdf) and Kingston ('Kingston's Continuation Notice') (http://www.ofcom.org.uk/static/archive/oftel/publications/eu_directives/cont_notices/kingston.pdf) on 23 July 2003.

5.3 Those Continuation Notices came into effect on 25 July 2003. Further details are contained in the Director's consultation document (<http://www.ofcom.org.uk/static/archive/oftel/publications/licensing/2003/cont0703.htm>) ('Continuation Consultation') and statement (http://www.ofcom.org.uk/static/archive/oftel/publications/eu_directives/cont_notices/cont0903.pdf) ('Continuation Statement') on the continuation process.

5.4 Paragraph 9 (11) of Schedule 18 to the Act imposes a duty on Ofcom, as soon as reasonably practicable after giving such a Continuation Notice, to take the necessary steps to enable it to decide whether or not to set a condition (including a SMP condition) for the purpose of replacing the continued obligation. When it has done so, paragraph 9 (12) of Schedule 18 to the Act requires Ofcom to give a notice that the continuation notice ceases to have effect, and that Ofcom must do this as soon as reasonably practicable after taking a decision to impose (or not to impose) conditions under the new regime.

As mentioned in paragraph 1.25 of this Statement, the regulation applying to BT in the asymmetric broadband origination market in the UK (excluding the Hull area) and broadband conveyance market in the UK and Kingston in the asymmetric broadband origination market in the Hull area is:

- Condition 43 – requirement to provide telecommunications services other than voice telephony services on request;
- Condition 45 – SMP obligations to Interconnect;
- Condition 46 – Requirement to publish reference interconnection offer;
- Condition 47 – requirement relating to Interconnect Agreements;
- Condition 49 – Requirement to send individual agreements to [OFCOM] and to publish them; and
- Condition 69 – Charge Control for Standard Services.

5.5 On the 14th January 2004, Ofcom consulted (http://www.ofcom.org.uk/consultations/past/condition_43/condition_43_condoc/proposalpdf?a=87101) on discontinuing continued provision Condition 43 for all services except in the markets set out in that Consultation Document, including the market for:

- wholesale asymmetric broadband origination and broadband conveyance markets.

The consultation period ended on 11 February 2004 and responses were received from the UK Competitive Telecommunications Association (“UKCTA”) and British Telecommunication plc (“BT”), and from one other respondent which made a confidential submission. A statement setting out Ofcom’s decision was published on 8 April 2004 (http://www.ofcom.org.uk/consultations/past/condition_43/con_43).

5.6 Ofcom decided, after having considered the responses to the consultation exercise, not to discontinue continued provision Condition 43 in respect of IPStream services until it had completed its evaluation of responses to the wholesale asymmetric broadband origination and broadband conveyance markets which refer to regulation of this service.

5.7 As Ofcom has concluded that the SMP conditions set out in Chapter 4 of this explanatory statement should apply in the markets covered in this review, the present regulatory requirements on BT and Kingston set out in their Continuation Notices in respect of the market defined in this document will now be discontinued. This will require Ofcom to give a notice (the 'Notice') to discontinue the relevant provisions that were continued on 25 July. The discontinuation Notices for BT and Kingston are included at Annexes G & H of this explanatory statement.

5.8 The effect of the discontinuation Notice will be to discontinue, among others, the continued Condition 43, in so far as it applies to the markets identified in this document and also to the IP Stream service which does not fall within the markets identified in this document but which was left in place until Ofcom had reached its final decision in this market review statement.

Continued Interconnection Directions

5.9 Further, Interconnection Directions 11 and 42, as identified in the Discontinuation Consultation and Statement documents (see paragraph 5.12), and set out below, were continued in relation to the asymmetric broadband origination market and broadband conveyance market for BT on 25 July 2003.

Interconnection Direction 11 – xDSL interconnection – 2 March 2001 (the First Direction) - This Direction was made by the Director under Condition 9.2 of the Public Telecommunications Licence granted to BT regarding xDSL Interconnection and under Regulation 6(3) and 6(4) of the Telecommunications (Interconnection) Regulations 1997.

Interconnection Direction 42 – xDSL interconnection – 14 June 2002 (the Second Direction) - This Direction was made to resolve a dispute between BT, Energis and Thus concerning xDSL interconnection at the ATM switch under Condition 9 & Regulation 6(6) of the Telecommunications (Interconnection) Regulations 1997.

For both Direction references, see

<http://www.ofcom.org.uk/static/archive/oftel/publications/broadband/dsl/atmi0602.pdf>). (The Second Direction arose out of the requirement placed on BT in the First Direction to enter into negotiations with the Operators to secure adequate interconnection with BT's xDSL products at the ATM level of BT's network. It required BT to conclude negotiations with the Operators for ATM level interconnection within six weeks of the date on which it was issued but they were unable to reach such an agreement and a dispute was brought to the Director to resolve. Also, those continued Interconnection Directions cover in part the regulation of Symmetric Digital Subscriber Line services, which falls outside the scope of this Market Review Statement.)

5.10 Paragraph 22 (9) of Schedule 18 to the Act imposes a duty on Ofcom, as soon as reasonably practicable after continuing an Interconnection Direction, to take the necessary steps to enable it to decide whether or not to set a condition (including a SMP condition) for the purpose of replacing the continued obligation. When it has done so, paragraph 22 (10) of Schedule 18 to the Act requires Ofcom to revoke the Interconnection Direction, and Ofcom must do this as soon as reasonably practicable after taking a decision to impose (or not to impose) conditions under the new regime.

5.11 While Ofcom is making a direction in this Market Review Statement to impose an obligation on BT under SMP services condition EA1 to provide ATM Interconnection (see paragraphs 4.188-196), and therefore the part of the xDSL Interconnection Directions concerning the provision of ATM Interconnection has been replaced, Ofcom has yet to put in place the specific charge for the provision of ATM Interconnection that is also addressed by the continued Interconnection Directions. Therefore, Ofcom does not intend to discontinue continued Interconnection Directions 11 and 42, where appropriate, until after the

conclusion of Ofcom's consideration of setting the margin. If there is conflict between the continued provisions and those SMP conditions and Direction imposed by this market review statement, Ofcom considers that the latter takes precedence.

The process for discontinuing continued provisions in Continuation Notices

5.12 The Director issued a consultation document "Discontinuing licence conditions after 25th July 2003" on 2 October 2003 (available at http://www.ofcom.org.uk/static/archive/oftel/publications/eu_directives/2003/discontin1003.pdf) (the "Discontinuation Consultation"), which consulted on the model discontinuation notice, the process for discontinuation and the appropriateness of discontinuing particular obligations including in respect of this particular market review.

5.13 At paragraph 13 of the Discontinuation Consultation, the Director explained that Condition 43, which is a continued provision contained in Schedule 1 of BT's and Kingston's Continuation Notice, has been continued in respect of BT and Kingston. He stated that Condition 43 will be discontinued on a market by market basis.

5.14 In so far as Conditions 57 and 58 are concerned, the Director set out at paragraph 11 of the October consultation document his view that that obligation only applies where certain obligations are in place, for example Condition 43 or Condition 45. He therefore did not consider it necessary to discontinue Conditions 57 and 58 on a market-by-market basis since they will cease to apply when other obligations, such as Condition 43 or Condition 45, are discontinued, which will be on market by market basis. He proposed that Conditions 57 and 58 are discontinued formally once the whole market review process has been completed. The Director received no responses to the October consultation document which led him to change that view.

5.15 Some continued provisions in BT's and Kingston's Continuation Notice relate to other market reviews. As market reviews are likely to be completed at different times, this raises an issue about when to give notice that a Continuation Notice ceases to have effect. Therefore, the Director has decided to discontinue continued licence conditions for the purposes of a particular market at the time when that market review is completed and any new obligations in that market are imposed. The other licence conditions in BT's and Kingston's Continuation Notice will, however, continue to have effect through the Continuation Notice in relation to other markets where the relevant review has not been completed because the notice would only have ceased the Continuation Notices in part.

5.16 As stated in paragraph 3 of the Statement "Discontinuing Licence Conditions" published on 13 November 2003

(<http://www.ofcom.org.uk/static/archive/oftel/publications/licensing/2003/discontinue1103.pdf>) ('Discontinuation Statement'), the Director received three responses to that consultation, but none of the points raised were specific to the process of discontinuation of regulations relating to this market. The regulations to be discontinued in this market therefore remain as set out in the November Discontinuation statement.

The Discontinuation Notices

5.17 The Notices given under paragraph 9 (9) of Schedule 18 to the Act to discontinue continued provisions Conditions 43, 45, 46, 47, 49 and 68 are included at Annexes G & H to this explanatory statement. The effect of those discontinuation Notices will be to discontinue the continued Conditions 43, 45, 46, 47, 49 and 68, in so far as it applies to the markets covered by this review.

Service of the Notices

5.18 The Notices are deemed to be effected a day after publication and posting of the Notice. This is because paragraph 9 (12) (b) of Schedule 18 to the Act states that where the Director has decided to set a condition, a Notice under paragraph 9 (9) of Schedule 18 to the Act cannot be given until that condition is in force. Therefore, the discontinuation Notice cannot be given until the new SMP conditions are made. In addition, in accordance with section 7 of the Interpretation Act 1978 and section 394 (7) of the Act, as the discontinuation Notices are being served by post, they will be deemed to be effected a working day after posting, which is 14 May 2004.

Chapter 6

Forward look

6.1 Ofcom recognises that the Wholesale Broadband Access markets are likely to be amongst the fastest changing of those currently regulated. These changes will be driven by:

- increasing take-up of broadband services;
- product innovation;
- technological changes;
- the potential for significant competition in the supply of the upstream input products based on LLU or other access technologies;
- the need for the regulatory regime to encourage and reward efficient and sustainable investment in LLU as well as DataStream by operators (including BT).

6.2 Accordingly, Ofcom proposes to prioritise this area in the next round of EU Market Reviews, and will undertake another review in 2005.

6.3 It is not appropriate at this stage to express firm views on the regulatory regime which Ofcom will find suitable at that stage. Nevertheless, without fettering its discretion, Ofcom believes it will be helpful to market players to set out its aspirations for the evolution of the market and of appropriate regulation to provide some certainty around possible future developments.

6.4 Ofcom's intention is that the regulation it is putting in place as a result of this review (in conjunction with the forthcoming consultation on the appropriate price regulation of broadband interconnection – Datastream being the current relevant product family) will permit and reward investment by efficient scale operators (including BT) to develop offerings to ISPs.

6.5 Ofcom has also noted that Altnets are not currently incentivised by the broadband conveyance tariff structure to interconnect at more than a very small number of points. A cost reflective tariff structure for broadband interconnection may be important in encouraging Altnets with scale and reach to invest to interconnect efficiently at more points and make it more economically viable for them to use their own core networks to supply broadband conveyance. If this build out happens and if effective and sustainable competition in the provision of broadband conveyance develops, it may be appropriate to deregulate, to some extent, the broadband conveyance and, implicitly, the provision of Service B (i.e. distant switch ATM Interconnection – see paragraph 4.190).

6.6 Ofcom also expects that changes in the regulation of broadband origination (ie the provision of parent switch ATM interconnection - Service A – see para 4.190) will be needed as the market develops. Without discounting the possible

impact of other access technologies, Ofcom considers that the most likely counterweight to BT's SMP in broadband origination may emerge at a time when a substantial proportion of broadband connections is supplied by unbundled loops. This may take some time to develop depending on the price levels and pricing structures of local loop unbundling products. If at some stage in the future, local loop unbundling were to provide fully effective competition in broadband origination then Ofcom considers that it may be appropriate to relax, to some extent, the regulation of Service A. However, the growth of unbundling is unlikely to be uniform. It might be expected that it would be more effective in some areas (e.g in exchange areas with a large number of end-users which are most likely to be in more densely populated urban areas) whilst less effective in others. In such a scenario it may be appropriate for Ofcom to consider some form of deregulation of Service A only in areas where LLU has become effective. Ofcom considers, however, that the regulation of Service A may continue to be important in areas where LLU-based competition has not emerged to ensure that operators are able to achieve national coverage for retail services. It is possible that this would be the case in the scenario described above where LLU were effective in some areas since operators could buy a combination of Service A, Service B (where appropriate – see above) and unbundled local loops from BT in order to achieve national coverage.

6.7 Technology could also have an impact on future regulation and the configuration of an interconnection product may change (although Ofcom's ability to predict the configuration of networks in, say, 5 years time is very limited). In particular, Ofcom notes that the functionality of IP networks is growing. One possibility is that, at some point, it may be appropriate for BT to withdraw ATM interconnection in favour of interconnection based on IP technology or another protocol. In present day terms, this would amount to replacing broadband origination and conveyance based on ATM protocol with broadband origination and conveyance based on IP protocol such that altnets were able to differentiate their product offerings to ISPs and corporates in a way that is not possible via interconnection at the IP layer today. At that point, whilst the overall approach to regulation of broadband interconnection may continue to be relevant, the more detailed approach for setting the price or margin between DataStream and IPStream is likely to require change. Nevertheless, if a regulated interconnection product remains necessary for effective competition downstream, Ofcom will put in place an appropriate method for implementing a regulatory regime at that time which creates the appropriate incentives to encourage and reward efficient investment and innovation, both by BT and others. To that end, although Ofcom does not expect that this point of technology inflexion will occur within the lifetime of the current Review, it has taken care to define markets in a way which is generic and not tied to the existing use of the ATM protocol. This means that even in the face of such technological developments, the existing regulatory requirement for a suitable interconnection product will remain and suitable products can be requested under the general access obligation for as long as this remains in force.

6.8 While pricing and other remedies such as a requirement to supply are important, they are not sufficient to guarantee that a regulated product will play an effective part in promotion of competition. If the systems and processes of the incumbent are inefficient or the non-price terms less attractive than those that would be expected in a competitive market, competitors will tend to struggle to make an impact. For that reason, Ofcom attaches considerable importance to these “attendant issues” being rapidly resolved. The detail is best resolved by the market players rather than determined by the regulator and Ofcom expects that arrangements will be put in place to facilitate speedy resolution of such issues. Ofcom’s dispute-resolution powers will of course remain available as a backstop and Ofcom recognises the importance that market players attach to speed in its own processes. Should it be necessary for Ofcom to resolve disputes in this area, it will give them high priority.

Annex A

Supplementary Market Analysis

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

Part 1: Critical Loss Derivation

Outline of methodology

The critical loss is the percentage reduction in demand for which the SSNIP leaves profits unaffected. So a larger loss of demand than the critical loss makes the SSNIP unprofitable.

The change in profit equals the change in revenue less the marginal costs saved (assuming constant marginal cost, c):-

$$(1) \quad R_1 - R_0 = p_1q_1 - p_0q_0 - c(q_1 - q_0)$$

where R is profit, c is marginal cost

$$p_1 \equiv p_0(1 + s) \quad \text{where } s \text{ is the size of the SSNIP}$$

$$q_1 \equiv q_0(1 + L) \quad \text{where } L < 0 \text{ is the percentage loss of demand}$$

$$c \equiv \alpha p_0 \quad \text{i.e. } \alpha \text{ is the ratio of marginal cost to the initial price}$$

Substituting these definitions in (1), specifying $R_1 - R_0 < 0$ and rearranging gives the critical loss:-

$$(2) \quad \tilde{L} < -\frac{s}{1 + s - \alpha}$$

Examples

Assume $s = 10\%$

$$(i) \quad c = 0\% \times p_0 \\ \text{implies } \tilde{L} = -9.1\%$$

(ii) $c = 50\% \times p_o$
implies $\tilde{L} = -16.7\%$

(iii) $c = 60\% \times p_o$
implies $\tilde{L} = -20\%$

(iv) $c = 70\% \times p_o$
implies $\tilde{L} = -25\%$

Conclusions of analysis

In Ofcom's previous consultation on the 'Review of the Wholesale Broadband Access Market' of the 28 April 2003, it estimated that a 10% SSNIP would give rise to a critical loss in the range 14% to 19%. At this time Ofcom assumed a weighted average retail price, before the SSNIP, of £26 pcm (inc VAT) and estimated the marginal cost of supplying broadband Internet access services to be in the range £10 to £15 pcm.

Ofcom has reconsidered his estimation of the critical loss in light of:

- Further cost information gained since the previous consultation.
- The revised definition of broadband Internet access services which now includes all Internet access services that are always on, allow simultaneous voice use and provide faster access than dial-up.

Ofcom has also reconsidered whether or not it is appropriate to consider LLU shared access charges when calculating critical loss values. Ofcom believes that a case can be made for including LLU shared access charges or for using only the marginal costs associated with a vertically integrated provider. The reasoning for this is set out below.

A purist approach to market definition might suggest that markets should be defined in the abstract and in this case should just consider whether broadband is constrained by narrowband. This would suggest that the true underlying costs should be reflected when calculating marginal cost i.e. absent any regulation. On this basis, there would be a case for using only the marginal costs associated with a vertically integrated provider.

However, it might also be argued that market definitions should reflect the conditions that firms face in reality. This would suggest that markets should be defined assuming that LLU regulation exists. In the context of market definition, it is assumed that a hypothetical monopolist raises prices by a significant, non-transitory amount. If an LLU operator were the hypothetical monopolist then the

marginal costs incurred would be based on the LLU shared access charges. However, if a vertically integrated provider were the hypothetical monopolist then the marginal costs incurred would be those based on its actual costs. The hypothetical monopolist test is constructed as an anonymous test such that no assumption is made regarding the identity of the hypothetical monopolist. Therefore, in this scenario, there would be a case for using LLU shared access charges. However, the use of LLU shared access charges would represent the upper bound of the marginal cost of supplying broadband Internet access, as they are higher than a vertically integrated provider's own marginal costs.

In calculating the critical loss values, Ofcom has taken a conservative approach. By using his estimate of a vertically integrated provider's own marginal costs, Ofcom has adopted an approach that would be more likely to result in a broader market definition (because this approach results in lower critical values than if LLU shared access charges had been used as the basis for the marginal cost).

Ofcom currently estimates that the marginal cost of supplying retail broadband Internet access services is in the range £14 to £19 pcm (inc VAT), whereas the current weighted average retail price, before the SSNIP, is £25 pcm (inc VAT). Given these latest estimates, a 10% SSNIP would give rise to a critical loss in the range 18.5% to 29.4%.

Part 2: The Provision of Wholesale Broadband Services Using Non-ADSL and Cable Modem Technologies

There are a number of alternative technologies that can provide broadband Internet access, in particular:

- broadband fixed wireless access (BFWA);
- broadband satellite access (BSA);
- fibre to the home (FTTH);
- mobile higher bandwidth access (3G); and
- other technologies such as powerline and free space optics.

Of these alternative technologies, BFWA and broadband satellite access are the two that are most widely available and actively being consumed in the UK. However, even these two technologies are very much in their infancy in the UK with very few subscribers actually using them. BFWA and BSA are discussed in more detail below along with the other alternative technologies noted above.

The total number of UK end user subscribers to the broadband services described in this Annex continue to represent less than one percent of the wholesale asymmetric broadband origination market. It is thus the case that Ofcom considers that even in aggregate, these alternative technologies are not yet providing a mass-market service in the UK nor are they likely to do so for the duration of this market review.

Broadband Fixed Wireless Access (BFWA)

Broadband fixed wireless access (BFWA) allows high-speed data connections using radio links between an aerial located on the user's premises and a base station, rather than using a telephone line or a cable television network.

BFWA services are provided in urban areas where they seek to compete with ADSL/cable modem services. However, the full extent to which BFWA can mirror the urban coverage of the ADSL and cable modem technologies is limited to the extent that this technology requires "line of sight" which can be disrupted by high-rise buildings.

BFWA services can also be used to extend broadband services offered over ADSL and cable modem technologies by providing the "in-fill" of gaps in urban broadband coverage (e.g. beyond cable and copper reach), and to provide broadband access to town-edge and rural communities. Indeed, BT has expressed interest in providing BFWA service in order to extend the availability of broadband services.

While most of the BFWA currently available is "point to multi-point", an alternative system is "mesh radio". This has the potential to provide community networks in rural areas and works on the principle that a small radio antenna installed at each household or business, transmits on to neighbouring users to form a network or "mesh", doing away with the need for large antennae or mast used to transmit to each individual customer in traditional point to multi-point wireless solutions. Mesh radio is being trialled by BT in the UK at the moment.

Liberty Broadband and Your Communication are offering BFWA services in the UK, although Your Communication specialises in offering symmetric as opposed to asymmetric services.

Liberty Broadband's coverage extends over approximately 12% of the UK population, mainly in urban areas. It has aspirations to cover all 40 major urban areas in the UK (65% of the UK population) by 2003. The services it offers range from 512/256 to a symmetric 1Mbit/s Service - though customers can choose from a range of options to increase speeds and/or ensure a given service level. The monthly charge for the most basic single retail user service (residential only) is £39.99 with £150 one off charge. This makes the service somewhat more expensive than the cheapest available retail ADSL/cable modem.

Whilst the broadband fixed wireless access technology may possess the potential to provide an increasing competitive constraint on the technologies of cable modems and ADSL in the long term in the provision of wholesale asymmetric broadband origination, there are currently only 2,500 end user customers obtaining their broadband services via this technology in the UK. Ofcom considers that this technology is not yet providing a mass-market service, and is not likely to do so for the duration of this market review. 2,500 customers equate to less than a half of one percent of the wholesale market.

Broadband Satellite Access

Some satellites in orbit around the earth can offer broadband services. Data transfer has traditionally been in one direction only ('one-way' satellite providing a broadband link downstream from the network to the end user, with the upstream link provided over a fixed PSTN/ISDN line), however new developments have enabled a satellite return path to be used ('two-way' satellite).

There are a number of UK ISPs offering 2-way services including: Bridge Broadband, Beam Solutions, BT Openworld, Crystal Data, I-sat, Isonetric and Space IP. Downstream speeds vary from 400 to 2000 kbit./s and retail prices start from £60 a month. These prices are three times as large as those of the lowest ADSL and cable modem retail prices currently available in the UK.

UK ISPs offering one-way satellite services include SatDrive, IpviaSat, and Xantic Broadband. Downstream capacities vary between 200 and 4000 kbit/s and by adding together the relevant service elements required to provide an

equivalent asymmetric broadband retail service as offered using ADSL/cable, the current prices of the one-way satellite service are generally more expensive than those provide via ADSL/cable. Indeed, given the requirement for a customer to use its fixed PSTN line to dial-up to obtain the upstream link part of this service, two of the functional elements of broadband as defined in Chapter 2 are missing from one-way satellite services. These being the always on and the ability to make simultaneous voice calls together with internet access. However, as there are currently less than 10,000, one-way satellite customers in the UK (less than a half of one percent of the broadband customer base) Ofcom does not consider it appropriate to analyse whether this class of broadband customers constitute a separate market of their own. It considers that this technology is not yet providing a mass-market service, and is not likely to do so for the duration of this market review. As such it currently considers it appropriate to include one-way satellite customers in the broadband market at both the retail and wholesale levels. As noted in Chapter 2 on a forward looking basis Ofcom may consider it appropriate to revisit his market definitions as internet access speeds, functionalities and consumer behaviour develop.

Where satellite services are provided, coverage will in principle be national or wider, e.g. Europe wide. However, consumers again require "line of sight", which will limit availability in some cases (e.g. in dense urban areas behind high-rise buildings or in deep sided valleys). This is not expected to be a significant problem, though determining the exact coverage possible in the UK is likely to be difficult.

Whilst the broadband satellite access technology may possess the potential to provide an increasing competitive constraint on the technologies of cable modems and ADSL in the long term in the provision of wholesale asymmetric broadband origination, there are currently less than 10,000 end user customers obtaining their broadband services via this technology in the UK.

Fibre To The Home (FTTH)

FTTH provides broadband services over an optical fibre link to the consumers' home (replacing the conventional copper pair or coaxial cable). This potentially allows services with higher bandwidth than those offered over ADSL and cable modems. However, this technology is not currently being offered to broadband end users in the UK.

Mobile Higher Bandwidth Access (3G)

As was discussed in Chapter 2, Ofcom currently considers that mobile internet access is in a separate market from fixed broadband internet access. The reason for this being that internet access over mobile networks is not an effective demand side substitute for broadband Internet access on fixed networks. However, as also noted in Chapter 2, the extent of this substitutability might need

to be reviewed in future following the take-up of new mobile technologies offering packet switched services, such as General Packet Radio Service (GPRS) and Universal Mobile Telecommunications System (3G).

Once more, the potential for this alternative technology to provide an additional competitive constraint in the wholesale asymmetric broadband origination market is a longer term possibility in the UK as services using this technology are not yet available to the mass-market.

Other broadband technologies

Examples of further alternative technologies which may in the future provide wholesale asymmetric broadband origination services in the UK include powerline and free space optics.

Powerline technology uses the electricity supply network to provide two-way broadband and phone connections by using filters that can separate the power supply flowing along the cable from communications signals. Trials are currently being run in Scotland (Scottish Hydro-Electric). Previous trials by NorWeb in the UK did not progress to a commercial product.

Free space optics ('FSO', or wireless optics) uses laser guided beams of light to transmit advanced services. FSO transmits light pulses through the air to receivers that are less than 1km away and within line of sight of a base terminal, which is connected to fibre optic cable. These services do not require spectrum or installation of wire or cable. Products are available in the UK, but on a limited basis.

As with the FTTH and 3G technologies, the potential for these alternative technologies to provide an additional competitive constraint in the wholesale asymmetric broadband origination market is a longer term possibility in the UK and beyond the time frame for the current market review. Services using these technologies are either not yet available or have not yet attained a mass-market presence.

Annex B**Additional criteria to assess single firm Significant Market Power**

Table B provides an application of the remaining single firm dominance criteria not discussed in Chapter 3 to the wholesale asymmetric broadband origination market.

Table B: Wholesale asymmetric broadband origination – single firm SMP	
Further Criteria:	Assessment
Vertical integration	The fact that the three material competitors in this wholesale market are also active at the retail level does not influence the wholesale SMP assessment.
Control of infrastructure not easily duplicated	The extent to which BT's narrowband analogue access network, characterised by ubiquity, provides it with an infrastructure advantage in the supply of broadband services is already captured in the analysis of operators' potential broadband market shares.
Pricing and profitability	Ofcom does not believe that there exists any evidence of excessive pricing of wholesale asymmetric broadband services, whether these prices are explicit or implicit within retail service prices.
Technological advantage or superiority	Ofcom considers that neither the ADSL or cable modem technology possesses a significant advantage over the other in the provision of wholesale asymmetric broadband origination services.
Products/services diversification (e.g. bundled products or services)	The three material competitors in this wholesale market are each able to offer diversified and differentiated wholesale services such that this criterion does not particularly inform the wholesale SMP assessment.
A highly developed distribution and sales network	This criterion does not particularly inform the wholesale SMP assessment. It is more relevant for retail market considerations.

Criteria to assess collective dominance

Table C provides an application of the collective dominance criteria to the wholesale asymmetric broadband origination market. As the majority of these criteria, including those most salient, indicate that this wholesale market is not characterised by collective dominance Ofcom concludes similarly.

Table C: wholesale asymmetric broadband origination – collective dominance	
Criterion:	Implication for assessment of collective dominance:
Market concentration:	99% of this market is shared between three companies who possess current shares of: 60%; 27% and 12%. However, there is no evidence in this market that these companies are co-ordinating their activities either explicitly or tacitly. There is thus no necessary indication of collective dominance from this criterion.
Transparency:	The pricing transparency that exists in this wholesale market is due to regulation as the ADSL services are provided as a result of regulation. The Cable companies do not currently offer a wholesale service.
Mature market:	The market is new and experiencing rapid growth in customer take-up. The industry growth forecasts for the time period of this review show continued rapid expansion. As explained in the single firm SMP assessment, BT is the operator best situated to take advantage of this growth in terms of winning new customers. Thus this criterion does not indicate collective dominance.
Stagnant or moderate growth on the demand side:	See the criterion above.
Low elasticity of demand:	Ofcom considers that the own and cross price elasticities of the three material competitors in this market are likely to be large enough such that they are not conducive to a finding of collective dominance.
Homogenous product:	The wholesale services offered in this market are differentiated in terms of speeds and contentions to the extent that they do not resemble a commodity product. This in turn removes one of the potential incentives to

	collude to avoid price competition in markets. This criterion does not indicate collective dominance in this market.
Similar cost structures:	As the three material competitors in this market are using two very distinct technologies it is unlikely to be the case that the two technologies possess such similar cost structures that would act to disincentivise price competition. Whilst Ofcom has previously analysed the costs of ADSL provision in detail it has not done so for cable modems to the extent that it can comment in detail about the technologies' relative cost structures.
Similar market shares:	As noted earlier, in excess of 99% of this market is shared between three companies with current shares of: 60%; 27% and 12% (39% combined) - these shares have changed substantially over the last 12 months. With BT's share increasing from 42% in February 2002 and the combined cable share falling from 58%. This growing imbalance in market shares between BT and the cable operators indicates that collective dominance is unlikely.
Lack of technical innovation, mature technology:	This market is currently characterised by significant technological progress. This is inconsistent with collective dominance.
Absence of excess capacity:	Both BT and the cable companies possess considerable existing capacity to grow this market. This makes it more difficult to maintain anti-competitive agreements and is thus inconsistent with collective dominance.
High barriers to entry:	This market is characterised by high barriers to entry as is explained in the single firm SMP assessment. This is consistent with collective dominance.
Lack of countervailing buying power:	The existence of customers with a strong negotiating position, which is exercised to produce a significant impact on competition, will tend to restrict the ability of providers to act independently of their customers. Such power is more likely where a customer accounts for a large proportion of the producer's total output, is well-informed about alternative sources of supply, is able to switch to other suppliers readily at little cost to itself, and where

	<p>it may even be able to begin producing the relevant product itself.</p> <p>Each of the three material wholesale competitors in this market are likely to remain by far the largest customer of their own wholesale broadband origination services in the short to medium term. Potential customers of these wholesale services are thus unlikely to possess significant countervailing buyer power which could act to undermine the potential existence of collective dominance.</p> <p>Whilst not indicating the existence of collective dominance nor does this criterion negate its potential.</p>
Lack of potential competition:	<p>LLU, and new broadband access network operators are unlikely to pose a significant competitive constraint on the three existing material competitors in this market for the duration of this market review. This fact would be supportive of findings of either single firm or collective dominance.</p>
Various kind of informal or other links between the undertakings concerned:	<p>There is no evidence of any links, be they formal or informal, connecting the UK's cable companies and BT. This criterion does not indicate collective dominance.</p>
Retaliatory mechanisms:	<p>Such mechanisms can deter action that might break collective agreements. An example of such a mechanism would be a credible threat of stronger price competition that would impact unequally upon providers. In this example, a provider that would be likely to suffer more than at least some competitors were an agreement to be broken and retaliatory price competition ensued would be less likely to try to break that agreement.</p> <p>It is possible that such a mechanism could be developed in this market, but there currently exists no clear collective agreement whose mechanism is "on view". This criterion does not indicate collective dominance.</p>
Lack of or reduced scope for price competition:	<p>This market has seen non-parallel price movements during 2002 as explained in the</p>

	single firm SMP assessment. This criterion does not indicate collective dominance.
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Annex C

List of representations received in response to the Review of the Wholesale Broadband Access Market

AOL

British Telecom

Broadband Industry Group (BIG)

Bulldog Communications

Easynet

Energis

European commission

Kingston Communications

Ntl

Sky

Telefónica

Thus

Tiscali

UK Competitive Telecommunications Association (UKCTA)

Annex D

Glossary

ADSL (Asymmetric Digital Subscriber Line): a digital technology that allows the use of a copper line to send a large quantity of data in one direction and a lesser quantity in the other.

Analogue: the direct representation of a waveform, as opposed to digital, which is a binary coded representation.

ATM Service: data services using Asynchronous Transfer Mode technology such as BT's DataStream family of products

Barriers to entry: an additional cost which must be borne by entrants but not by firms already in the industry; or other factors, which enable an incumbent to maintain prices above the competitive level without inducing entry.

Broadband: a service or connection allowing a considerable amount of information to be conveyed.

BT: British Telecommunications plc.

Cable modem: a cable modem is a device that enables a consumer to access the Internet via a cable line

Communications provider: a person who provides an Electronic Communications Network or provides an Electronic Communications Service.

Dial-up Internet access: Internet access that uses a dial-up connection over an analogue or ISDN telephone line.

Digital: the binary coded representation of a waveform, as opposed to analogue, which is the direct representation of a waveform.

Digital Local Exchange (DLE) and Local exchange: the telephone exchange to which customers are directly connected, often via a remote concentrator unit.

Direct Access: the situation where a customer is directly connected to a telecommunications operator's network by a fixed link.

DMSU (Digital Main Switching Unit): a tandem exchange primarily used for connecting calls between DLEs.

DSL (Digital Subscriber Line): a family of technologies generically referred to as DSL, or xDSL, capable of transforming ordinary phone lines (also known as "twisted copper pairs") into high-speed digital lines, capable of supporting advanced services such as fast Internet access and video-on-demand. ADSL (Asymmetric Digital Subscriber Line), HDSL (High bit rate Digital Subscriber Line) and VDSL (Very high data rate Digital Subscriber Line) are all variants of xDSL.

DSLAM (Digital Subscriber Loop Access Multiplexer): apparatus sited in the same exchange building as is used to terminate DSL enabled copper loops, which comprises a bank of DSL modems and a multiplexer which combines many customer lines into one data path.

Exchange line: the telephone line that connects the customers' network terminating point to the local serving exchange.

FRIACO (Flat Rate Internet Access Call Origination): the provision of Flat Rate Internet Access Call Origination via a wholesale unmetered Internet access product from BT.

HDSL (High bit rate Digital Subscriber Line): one of the earliest forms of DSL services to be widely used. It is symmetrical, offering the same data rates upstream and downstream. The maximum data rate is however lower than that for ADSL.

Hull Area: the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc.

Integrated Services Digital Network (ISDN): a network evolved from the digital PSTN which provides digital exchange lines to customers and 64kbps end to end digital connectivity between them. Two or more 64kbps connections can be combined to provide a higher speed connection, e.g. 128kbps.

Interconnection: the linking (whether directly or indirectly by physical or logical means, or by a combination of physical or logical means) of one Public Electronic Communications Network to another for the purpose of enabling the persons using one of them to be able:

- (a) to communicate with users of the other one; or
- (b) to make use of services provided by means of the other one (whether by the provider of that Network or by another person);

Internet connectivity: the ability to access any destination on the Internet from a point of interconnection with an Internet backbone.

IP (Internet Protocol): the packet data protocol used for routing and carriage of messages across the Internet and similar networks.

IP network: a network that uses IP; for example the Internet is a public IP network.

Internet Service Provider (ISP): a company that provides individuals and other companies access to the Internet and other related services.

Kbps (Kilo (thousand) bits per second): a measure of the speed of transfer of digital information.

Kingston: Kingston Communications (Hull) PLC – telephone company which operates in the Hull area.

Leased lines (also known as private circuits): a permanently connected communications link between two premises dedicated to the customers' exclusive use.

Local loop: the access network connection between the customer's premises and the local serving exchange, usually comprised of two copper wires twisted together.

Local loop unbundling (LLU): a process by which an incumbent's exchange lines (local loops) are physically disconnected from its network and connected to other operators' networks. This enables operators other than the incumbent to use the local loop to provide services directly to customers.

Long Run Incremental Costs (LRIC): The costs caused by the provision of a defined increment of output, taking a long run perspective, assuming that some output is already produced. The 'long run' means the time horizon over which all costs (including capital investment) are variable.

Metered service: a service that is charged according to usage, usually on a pence per minute basis.

Modem: abbreviation of modulate-demodulate, a device that converts a digital signal into analogue for transmission purposes. It also receives analogue transmissions and converts them back to digital.

Narrowband: a service or connection allowing only a limited amount of information to be conveyed, such as for telephony. This compares with broadband which allows a considerable amount of information to be conveyed.

NRAs (National Regulatory Authorities): the body or bodies, legally distinct and functionally independent of the telecommunications organisations, charged

by a Member State with the elaboration of, and supervision of compliance with, telecoms authorisations.

PPCs (Partial Private Circuits): a generic term used to describe a category of private circuits that terminate at a point of connection between two operators' networks. It is therefore the provision of transparent transmission capacity between a customer's premises and a point of connection between the two operators' networks. It may also be termed a part leased line. It includes terminating segments.

PSTN: Public Switched Telephone Network

Return on Capital Employed (ROCE): the ratio of accounting profit to capital employed. The measure of capital employed can be either Historic Cost Accounting (HCA) or Current Cost Accounting (CCA).

Schedule 2 Public Operator: those operators who have rights and obligations to interconnect with each other under Article 4(1) of the Interconnection Directive 97/33EC for the purpose of providing publicly available telecommunication services.

Shared port: a connection, typically on a Network Access Server or telephone exchange, which is shared between a number of wholesale customers (ISPs).

Select Services: a set of supplementary services (including call waiting, call barring, ringback etc.) provided by BT as set out in the BT retail price list.

Service provider: a provider of electronic communications services to third parties whether over its own network or otherwise.

SME: Small and Medium Enterprise.

SMP: The Significant Market Power test is set out in European Directives. It is used by the National Regulatory Authorities (NRA) such as Oftel to identify those operators who must meet additional obligations under the relevant Directive.

Standard service: an interconnection service which BT is required to provide under the current regime.

Substitutability: whether an increase in the price of one product would lead consumers to switch to other competing products or services (demand-side substitutability) or lead producers to switch rapidly into the supply of the good in question (supply-side substitutability).

Synchronous Digital Hierarchy (SDH) – a method of digital transmission where the data is packed in containers which are synchronised in time enabling

relatively simple multiplexing and de-multiplexing at the transmitting and receiving ends.

Terminating segment: is the capacity between a customer's premises, and a point of connection between BT's network and a communication provider's network, which may be located at Tier 1 of BT's SDH network (where an alternative BT network is used then the terminating segment extends up to the nearest node located at the same site as an SDH node).

Unmetered service: a service that is provided on a flat-rate basis, where charges do not vary according to usage, in contrast to metered services

Annex E

Notification

NOTIFICATION UNDER SECTIONS 48 (1) AND 79 (4) OF THE COMMUNICATIONS ACT 2003

The identification of markets, the making of market power determinations in relation to those markets and the setting of SMP services conditions in relation to BT and Kingston under section 45 of the Communications Act 2003

WHEREAS

(A) The Office of Communications (“Ofcom”) issued a notification pursuant to section 48(2) and section 80 of the Communications Act 2003 (the “Act”) setting out their proposals for the identification of markets, the making of market power determinations and the setting of SMP services conditions on 16th December 2003 (the ‘First Notification’);

(B) A copy of the First Notification was sent to the Secretary of State in accordance with section 50(1)(a) of the Act, and to the European Commission and to the regulatory authorities of every other member state in accordance with sections 50(3) and 81 of the Act;

(C) In the First Notification and the accompanying explanatory statement, Ofcom invited representations about any of the proposals set out therein by 6th February 2004;

(D) By virtue of section 80(6) of the Act, Ofcom may give effect to any proposals to identify a market for the purposes of making a market power determination or any proposals for making a market power determination set out in the First Notification, with or without modification, where-

- (i) they have considered every representation about the proposals made to them within the period specified in the First Notification; and
- (ii) they have had regard to every international obligation of the United Kingdom (if any) which has been notified to them for this purpose by the Secretary of State; but
- (iii) Ofcom’s power to give effect to such proposals is subject to sections 82 and 83 of the Act;

(E) By virtue of section 48(5) of the Act, Ofcom may give effect to any proposals to set SMP services conditions set out in the First Notification, with or without modification, where-

- (i) they have considered every representation about the proposals made to them within the period specified in the First Notification; and
- (ii) they have had regard to every international obligation of the United Kingdom (if any) which has been notified to them for this purpose by the Secretary of State;

(F) Ofcom received responses to the First Notification and have considered every such representation made to them in respect of the proposals set out in the First Notification and the accompanying explanatory statement; and the Secretary of State has not notified Ofcom of any international obligation of the United Kingdom for this purpose;

(G) The European Commission has not made a notification for the purposes of Article 7(4) of the Framework Directive as referred to in section 82 of the Act and the proposals do not relate to a transnational market as referred to in section 83 of the Act;

THEREFORE

1. Ofcom in accordance with section 79 of the Act identify the following markets for the purposes of making a market power determination:

- (a) asymmetric broadband origination in the United Kingdom, (excluding the Hull area);
- (b) broadband conveyance in the United Kingdom; and
- (c) asymmetric broadband origination in the Hull area.

2. Ofcom in accordance with section 79 of the Act make the following market power determinations in relation to the markets referred to in paragraph 1 above-

- (a) in relation to the markets set out in paragraphs 2(a) and 2(b) above, BT; and
- (b) in relation to the market set out in paragraph 2(c) above, Kingston.

3. Ofcom in accordance with section 48(1) of the Act and section 79 of the Act hereby set pursuant to section 45 of the Act the SMP services conditions on the persons referred in paragraph 2 above as set out in Schedules 1 and 2

respectively to this Notification to take effect, unless otherwise is stated in those Schedules on the date of publication of this Notification.

4. The effect of and Ofcom's reasons for the decisions referred to in paragraphs 1 to 3 above are contained in the Explanatory Statement accompanying this Notification.
5. In making the decisions referred to in paragraphs 1 and 2 above, Ofcom have taken due account of all applicable guidelines and recommendations which have been issued or made by the European Commission in pursuance of a Community instrument, and relate to market identification or analysis, as required by section 79 of the Act.
6. In making the decisions referred to in paragraphs 1 to 3 above, Ofcom have considered and acted in accordance with the six Community requirements set out in section 4 of the Act and their duties in section 3 of the Act.
7. Ofcom consider that the SMP services conditions referred to in paragraph 3 above comply with the requirements of sections 45 to 50 and sections 78 to 92 of the Act, as appropriate and relevant to each such SMP services condition.
8. Copies of this Notification and the accompanying explanatory statement have been sent to the Secretary of State in accordance with section 50(1)(a) and section 81(1) of the Act and to the European Commission in accordance with sections 50(2) and 81(2) of the Act.
9. Save for the purposes of paragraph 1 of this Notification and except as otherwise defined in this Notification, words or expressions used shall have the same meaning as in the Act.
10. In this Notification:
 - a. "**BT**" means British Telecommunications plc whose registered company number 1800000, and including any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 736 of the Companies Act 1985, as amended by the Companies Act 1989;
 - b. "**Hull area**" means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;
 - c. "**Kingston**" means Kingston Communications (Hull) plc whose registered company number 2150618, and including

any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 736 of the Companies Act 1985, as amended by the Companies Act 1989; and

- d. **“United Kingdom”** has the meaning given to it in the Interpretation Act 1978.

Sean Williams

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002

13 May 2004

Schedule 1

The conditions imposed on BT under sections 45, 87 and 88 of the Communications Act 2003 as a result of the analysis of the asymmetric broadband origination and broadband conveyance markets in which BT has been found to have significant market power (“SMP condition”)

Part 1: Application, definitions and interpretation of these conditions

1. These conditions shall apply to the markets for asymmetric broadband origination in the United Kingdom excluding the Hull Area and broadband conveyance in the United Kingdom by the Dominant Provider (“the Markets”).
2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the Markets, the following definitions shall apply:

“Act” means the Communications Act 2003;

“Access Charge Change Notice” has the meaning given to it in Condition EA4.2;

“BT” 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;

“Director” means Director General of Telecommunications as appointed under section 1 of the Telecommunications Act 1984;

“Dominant Provider” means British Telecommunications plc whose registered company number is 1800000, and any British Telecommunications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by Section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

“Hull Area” means the area defined as the “Licensed Area” in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;

“Ofcom” means the Office of Communications;

“Reference Offer” means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract;

“Third Party” means either:

- a. a person providing a Public Electronic Communications Network; or
 - b. a person providing a Public Electronic Communications Service.
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 Act.
 4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.
 5. Headings and titles shall be disregarded.

Part 2: The conditions

Condition EA1 – Requirement to provide Network Access on reasonable request

EA1.1 Where a Third Party reasonably requests in writing Network Access, the Dominant Provider shall provide that Network Access. The Dominant Provider shall also provide such Network Access as Ofcom may from time to time direct.

EA1.2 The provision of Network Access in accordance with Condition EA1.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms, conditions and charges and on such terms, conditions and charges as Ofcom may from time to time direct.

EA1.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition EA2 – Requirement not to unduly discriminate

EA2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with Network Access.

EA2.2 In this Condition the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

Condition EA3 – Requirement to publish a reference offer

EA3.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

EA3.2 Subject to Condition EA3.8 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of Network Access includes at least the following:

- (a) a description of the Network Access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of the network);
- (b) the locations of the points of Network Access;
- (c) the technical standards for Network Access (including any usage restrictions and other security issues);
- (d) the conditions for access to ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing);
- (e) any ordering and provisioning procedures;
- (f) relevant charges, terms of payment and billing procedures;
- (g) details of interoperability tests;
- (h) details of maintenance and quality as follows:

- (i) specific time scales for the acceptance or refusal of a request for supply and for completion, testing and hand-over or delivery of services and facilities, for provision of support services (such as fault handling and repair);
 - (ii) service level commitments, namely the quality standards that each party must meet when performing its contractual obligations;
 - (iii) the amount of compensation payable by one party to another for failure to perform contractual commitments;
 - (iv) a definition and limitation of liability and indemnity; and
 - (v) procedures in the event of alterations being proposed to the service offerings, for example, launch of new services, changes to existing services or change to prices;
- (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); and
- (n) the standard terms and conditions for the provision of Network Access.

EA3.3 To the extent that the Dominant Provider provides to itself Network Access that:

- (i) is the same, similar or equivalent to that provided to any other Third Party; or
- (ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other Third Party,

in a manner that differs from that detailed in a Reference Offer in relation to Network Access provided to any other Third Party, the Dominant Provider shall ensure that it publishes a Reference Offer in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in Condition EA3.2 (a)-(n)

EA3.4 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to any Network Access that it is providing as at the date this Condition enters into force.

EA3.5 The Dominant Provider shall update and publish in relation to any amendments or in relation to any further Network Access provided after the date this Condition enters into force.

EA3.6 Publication referred to above shall be effected by:

- (a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and
- (b) sending a copy of the Reference Offer to Ofcom.

EA3.7 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person's written request (or such parts which have been requested).

EA3.8 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

EA3.9 The Dominant Provider shall provide Network Access at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly.

EA3.10 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition EA4 – Requirement to notify charges terms and conditions

EA4.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish charges, terms and conditions and act in the manner set out below.

EA4.2 Save where otherwise provided in Condition EA6, the Dominant Provider shall send to Ofcom and to every Third Party with which it has entered into an Access Contract covered by Condition EA1 a written notice of any amendment to the charges, terms and conditions on which it provides Network Access or in relation to any charges, terms and conditions for new Network Access (an “Access Charge Change Notice”) not less than 28 days before any such amendment comes into effect.

EA4.3 The Dominant Provider shall ensure that an Access Charge Change Notice includes:

- (a) a description of the Network Access in question;
- (b) a reference to the location in the Dominant Provider’s current Reference Offer of the charges, terms and conditions associated with the provision of that Network Access; and
- (c) the date on which or the period for which any amendments to charges, terms and conditions will take effect (the “effective date”).

EA4.4 The Dominant Provider shall not apply any new charge, term or condition identified in an Access Charge Change Notice before the effective date.

EA4.5 To the extent that the Dominant Provider provides to itself Network Access that:

- (i) is the same, similar or equivalent to that provided to any other person; or
- (ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in an Access Charge Change Notice in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it sends to 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 EA4.3(a)-(c).

Condition EA5 – Transparency as to quality of service

EA5.1 The Dominant Provider shall publish all such information for the purposes of securing transparency as to the quality of service in relation to Network Access provided by the Dominant Provider, in such manner and form as Ofcom may from time to time direct.

EA5.2 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition EA5.

Condition EA6 – Requirement to notify technical information

EA6.1 Save where Ofcom consents otherwise, where the Dominant Provider:

(a) proposes to provide Network Access covered by Condition EA1, the terms and conditions for which comprise new:

(i) technical characteristics (including information on network configuration where necessary to make effective use of the Network Access);

(ii) locations of the points of Network Access; or

(iii) technical standards (including any usage restrictions and other security issues),

or

(b) proposes to amend an existing Access Contract covered by Condition EA1 by modifying the terms and conditions listed in Condition EA6.1(a)(i) to (iii) on which the Network Access is provided,

the Dominant Provider shall publish a written notice (the 'Notice') of the new or amended terms and conditions 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.

EA6.2 The Dominant Provider shall ensure that the Notice includes:

(a) a description of the Network Access in question;

(b) a reference to the location in the Dominant Provider's Reference Offer of the relevant terms and conditions; and

(c) the date on which or the period for which the Dominant Provider may enter into an Access Contract to provide the new Network Access or any amendments to the relevant terms and conditions will take effect (the “effective date”).

EA6.3 The Dominant Provider shall not enter into an Access Contract containing the terms and conditions identified in the Notice or apply any new relevant terms and conditions identified in the Notice before the effective date.

EA6.4 Publication referred to in paragraph EA6.1 shall be effected by:

- (a) placing a copy of the Notice on any relevant website operated or controlled by the Dominant Provider;
- (b) sending a copy of the Notice to Ofcom; and
- (c) sending a copy of the Notice to any Third Party at that Third Party’s written request, and where the Notice identifies a modification to existing relevant terms and conditions, to every Third Party with which the Dominant Provider has entered into an Access Contract covered by Condition EA1. The provision of such a copy of Notice may be subject to a reasonable charge.

EA7 - Requests for new Network Access

EA7.1 The Dominant Provider shall, for the purposes of transparency, publish reasonable guidelines, in relation to requests for new Network Access made to it. Such guidelines shall detail:

- (a) the form in which such a request should be made;
- (b) the information that the Dominant Provider requires in order to consider a request for new Network Access; and
- (c) the time scales in which such requests will be handled by the Dominant Provider in accordance with this Condition.

EA7.2 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.

EA7.3 The Dominant Provider shall, upon a reasonable request from a Third Party considering making a request for new Network Access, provide that Third Party with information so as to enable that Third Party to make a request for new Network Access. Such information shall be provided within a reasonable period.

EA7.4 On receipt of a written request for new Network Access the Dominant Provider shall ensure that the requirements of this Condition are met. A modification of a request for new Network Access which has previously been submitted to the Dominant Provider, and rejected by the Dominant Provider, shall be considered as a new request.

EA7.5 Within five working days of receipt of a request under paragraph EA7.4, the Dominant Provider shall acknowledge that request in writing.

EA7.6 Within fifteen working days of receipt of a request under paragraph EA7.4 the Dominant Provider shall respond in writing to the requesting Third Party in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall confirm that the following will be prepared:

(i) the timetable for the provision of the new Network Access;

(ii) an initial offer of terms and conditions for the provision of the new Network Access; and

(iii) the timetable for the agreement of technical issues.

(b) the Dominant Provider shall confirm that a feasibility study is reasonably required in order to determine whether the request made is reasonable and the Dominant Provider shall set out its objective reasons for the need for such a study;

(c) the Dominant Provider shall confirm that the request is not sufficiently well formulated and, where it does so, the Dominant Provider shall detail all of the defects in the request which has been made; or

(d) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal.

EA7.7 Where the Dominant Provider responds to a request under paragraph EA7.4 in accordance with paragraph EA7.6(a) it shall, within thirty-five working days of receipt of a request under paragraph EA7.4, respond further to the requesting Third Party in writing and:

- (i) confirm the timetable for the provision of the new Network Access;
- (ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and
- (iii) confirm the timetable for the agreement of technical issues.

EA7.8 Where the Dominant Provider responds to a request under paragraph EA7.4 in accordance with paragraph EA7.6 (a) and determines, due to a genuine error of fact, that it reasonably needs to complete a feasibility study, it may, as soon as practicable and in any event, within thirty five working days of receipt of a request under paragraph EA7.4, inform the requesting Third Party that a feasibility study is reasonably required and set out its objective reasons for such a study.

EA7.9 Where EA7.8 applies the Dominant Provider shall, within forty five working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required, respond further to the requesting Third party, in writing, in one of the following ways:

- (a) the Dominant Provider shall confirm that the request will be met and shall:
 - (i) confirm the timetable for the provision of the new Network Access;

(ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and

(iii) confirm the timetable for the agreement of technical issues; or

(b) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal. The Dominant Provider shall provide to Ofcom a copy of the feasibility study and shall provide to the requesting Third Party a non-confidential copy of the feasibility study.

EA7.10 The time limit set out in paragraph EA7.9 above shall be extended up to seventy working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required pursuant to paragraph EA7.8, if:

(a) circumstances have arisen which, despite the Dominant Provider using its best endeavours, prevent it from completing the feasibility study within forty five working days of the date that the requesting Third Party was informed of the need for a feasibility study pursuant to paragraph EA7.8; or

(b) the Third Party and the Dominant Provider agree to extend the time limit up to seventy working days.

EA7.11 The time limit set out in paragraph EA7.9 above shall be extended beyond seventy working days from the date that the Dominant Provider informs the requesting Third Party that a feasibility study is reasonably required pursuant to paragraph EA7.8, if:

- (a) Ofcom agrees; or
- (b) the Third Party and the Dominant Provider agree to extend the time limit beyond seventy working days.

EA7.12 Where the Dominant Provider responds to a request under paragraph EA7.4 in accordance with paragraph EA7.6 (b) the Dominant Provider shall, within sixty working days of receipt of a request under paragraph EA7.4, respond further to the requesting Third Party, in writing, in one of the following ways:

(a) the Dominant Provider shall confirm that the request will be met and shall:

(i) confirm the timetable for the provision of the new Network Access;

(ii) provide an initial offer of terms and conditions for the provision of the new Network Access; and

(iii) confirm the timetable for the agreement of technical issues; or

(b) the Dominant Provider shall confirm that the request is refused on the basis that it is not reasonable and, where it does so, the Dominant Provider shall detail its reasons for refusal. The Dominant Provider shall provide to Ofcom a copy of the feasibility study and shall provide to the requesting Third Party a non-confidential copy of the feasibility study.

EA7.13 The time limit set out in paragraph EA.12 above shall be extended up to eighty-five working days of receipt of a request under paragraph EA.7.4, if:

- (a) circumstances have arisen which, despite the Dominant Provider using its best endeavours, prevent it from completing the feasibility study within sixty working days of receipt of a request under paragraph EA7.4; or
- (b) the Third Party and the Dominant Provider agree to extend the time limit up to eighty-five working days.

EA7.14 The time limit set out in paragraph EA.12 above shall be extended beyond eighty five working days of receipt of a request under paragraph EA7.4, if:

- (a) Ofcom agrees; or
- (b) the Third Party and the Dominant Provider agree to extend the time limit beyond eighty-five working days.

EA7.15 Within two months of the date that this Condition 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.

EA7.16 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Schedule 2

The conditions imposed on Kingston under sections 45, 87 and 88 of the Communications Act 2003 as a result of the analysis of the asymmetric broadband origination and broadband conveyance markets in which Kingston has been found to have significant market power (“SMP condition”)

Part 1: Application, definitions and Interpretation of these conditions

1. These conditions shall apply to the market for asymmetric broadband origination in the Hull Area by the Dominant Provider (“the Market”).
2. For the purpose of interpreting the conditions imposed on the Dominant Provider following a review of the Market the following definitions shall apply:

“Act” means the Communications Act 2003;

“Access Charge Change Notice” has the meaning given to it in Condition EB4.2;

“Director” means Director General of Telecommunications as appointed under section 1 of the Telecommunications Act 1984;

“Dominant Provider” means Kingston Communications plc whose registered company number is 2150618 and any Kingston Communications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by Section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

“Kingston” means Kingston Communications plc whose registered company number is 2150618 and any Kingston Communications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by Section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

“Hull Area” means the area defined as the “Licensed Area” in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;

“Ofcom” means the Office of Communications;

“Reference Offer” means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract;

- “Third Party” means either:
- a. a person providing a Public Electronic Communications Network; or
 - b. a person providing a Public Electronic Communications Service.
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 Act.
 4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.
 5. Headings and titles shall be disregarded.

Part 2: The conditions

Condition EB1 – Requirement to provide Network Access on reasonable request

EB1.1 Where a Third Party reasonably requests in writing Network Access, the Dominant Provider shall provide that Network Access. The Dominant Provider shall also provide such Network Access as Ofcom may from time to time direct.

EB1.2 The provision of Network Access in accordance with Condition EB1.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms, conditions and charges and on such terms, conditions and charges as Ofcom may from time to time direct.

EB1.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition EB2 – Requirement not to unduly discriminate

EB2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with Network Access.

EB2.2 In this Condition the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

Condition EB3 – Requirement to publish a reference offer

EB3.1 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.

EB3.2 Subject to Condition EB3.8 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of Network Access includes at least the following:

- (a) a description of the Network Access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of the network);
- (b) the locations of the points of Network Access;
- (c) the technical standards for Network Access (including any usage restrictions and other security issues);
- (d) the conditions for access to ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing);
- (e) any ordering and provisioning procedures;
- (f) relevant charges, terms of payment and billing procedures;
- (g) details of interoperability tests;
- (h) details of 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); and
 - (n) the standard terms and conditions for the provision of Network Access.

EB3.3 To the extent that the Dominant Provider provides to itself Network Access that:

- (i) is the same, similar or equivalent to that provided to any other Third Party; or
- (ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other Third Party,

in a manner that differs from that detailed in a Reference Offer in relation to Network Access provided to any other Third Party, the Dominant Provider shall ensure that it publishes a Reference Offer in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in Condition EA3.2 (a)-(n)

EB3.4 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to any Network Access that it is providing as at the date this Condition enters into force.

EB3.5 The Dominant Provider shall update and publish in relation to any amendments or in relation to any further Network Access provided after the date this Condition enters into force.

EB3.6 Publication referred to above shall be effected by:

- (a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and
- (b) sending a copy of the Reference Offer to Ofcom.

EB3.7 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person's written request (or such parts which have been requested).

EB3.8 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

EB3.9 The Dominant Provider shall provide Network Access at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly.

EB3.10 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition EB4 – Requirement to notify charges, terms and conditions

EB4.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish charges, terms and conditions and act in the manner set out below.

EB4.2 Save where otherwise provided in Condition EB5, the Dominant Provider shall send to Ofcom and to every Third Party with which it has entered into an Access Contract covered by Condition EB1 a written notice of any amendment to the charges, terms and conditions on which it provides Network Access or in relation to any charges, terms and conditions for new Network Access (an “Access Charge Change Notice”) not less than 28 days before any such amendment comes into effect.

EB4.3 The Dominant Provider shall ensure that an Access Charge Change Notice includes:

- (a) a description of the Network Access in question;
- (b) a reference to the location in the Dominant Provider’s current Reference Offer of the charges, terms and conditions associated with the provision of that Network Access; and
- (c) the date on which or the period for which any amendments to charges, terms and conditions will take effect (the “effective date”).

EB4.4 The Dominant Provider shall not apply any new charge, term or condition identified in an Access Charge Change Notice before the effective date.

EB4.5 To the extent that the Dominant Provider provides to itself Network Access that:

- (i) is the same, similar or equivalent to that provided to any other person; or
- (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 EB4.3(a)-(c).

Condition EB5 – Requirement to notify technical information

EB5.1 Save where Ofcom consents otherwise, where the Dominant Provider:

(a) proposes to provide Network Access covered by Condition EB1, the terms and conditions for which comprise new:

(i) technical characteristics (including information on network configuration where necessary to make effective use of the Network Access);

(ii) locations of the points of Network Access; or

(iii) technical standards (including any usage restrictions and other security issues),

or

(b) proposes to amend an existing Access Contract covered by Condition EB1 by modifying the terms and conditions listed in Condition EB5.1(a)(i) to (iii) on which the Network Access is provided,

the Dominant Provider shall publish a written notice (the 'Notice') of the new or amended terms and conditions 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.

EB5.2 The Dominant Provider shall ensure that the Notice includes:

(a) a description of the Network Access in question;

- (b) a reference to the location in the Dominant Provider's Reference Offer of the relevant terms and conditions; and
- (c) the date on which or the period for which the Dominant Provider may enter into an Access Contract to provide the new Network Access or any amendments to the relevant terms and conditions will take effect (the "effective date").

EB5.3 The Dominant Provider shall not enter into an Access Contract containing the terms and conditions identified in the Notice or apply any new relevant terms and conditions identified in the Notice before the effective date.

EB5.4 Publication referred to in paragraph EB5.1 shall be effected by:

- (a) placing a copy of the Notice on any relevant website operated or controlled by the Dominant Provider;
- (b) sending a copy of the Notice to Ofcom; and
- (c) sending a copy of the Notice to any Third Party at that Third Party's written request, and where the Notice identifies a modification to existing relevant terms and conditions, to every Third Party with which the Dominant Provider has entered into an Access Contract covered by Condition EB1. The provision of such a copy of Notice may be subject to a reasonable charge.

Annex F

Direction under section 49 of the Communications Act 2003 and Condition EA1 imposed on British Telecommunications plc ('BT') as a result of the market power determinations made by Ofcom that BT has significant market power in the asymmetric broadband origination in the United Kingdom (excluding the Hull Area) and broadband conveyance markets in the United Kingdom

WHEREAS:

- (A) as a result of a market analysis carried out by Ofcom, they proposed on 16 December 2003 (the "First Notification") in accordance with sections 48(2) and 80 of the Act that British Telecommunications plc ('BT') has significant market power in the asymmetric broadband origination (excluding the Hull Area) and broadband conveyance markets in the United Kingdom;
- (B) Ofcom having considered every representation duly made, and thereafter on 13 May 2004 pursuant to sections 48(1) and 79 of the Act by way of publication of a Notification identified the relevant services markets, made market power determinations to the effect referred to in recital (A) above and set certain SMP conditions on British Telecommunications plc to take effect 13 May 2004, such as Condition EA1, imposing obligations concerning the provision of Network Access;
- (C) this Direction concerns matters to which Condition EA1.1 and EA1.2 relates;
- (D) for the reasons set out in Chapter 4 of the explanatory statement accompanying this Direction, and in Chapter 4 of the accompanying explanatory statement to the First Notification, Ofcom is satisfied that, in accordance with section 49(2) of the Act, this Direction is:
 - (i) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;
 - (ii) not such as to discriminate unduly against particular persons or against a particular description of persons;
 - (iii) proportionate to what it is intended to achieve; and
 - (iv) in relation to what it is intended to achieve, transparent.
- (E) for the reasons set out in Chapter 4 of the explanatory statement accompanying this Direction, and in Chapter 4 of the accompanying explanatory statement to the First Notification, Ofcom have considered and acted in accordance with the six Community requirements set out in section 4 of the Act and their duties in section 3 of the Act.

(F) on 16 December 2003 Ofcom published a notification of the proposed Direction in accordance with section 49 of the Act;

(G) Ofcom has considered every representation about the proposed Direction duly made to them; and

Therefore, pursuant to section 49 of the Act and Condition EA1 in Schedule 1 to the Notification, Ofcom gives the following Direction:

1. The Dominant Provider shall provide Basic Services as specified in Annex 1 to this Direction to every Third Party who reasonably requests in writing such Basic Services.
2. The Dominant Provider shall provide Additional Functionality as specified in Annex 2 to this Direction to every Third Party who reasonably requests in writing such Additional Functionality.
3. The provision of Basic Services and Additional Functionality covered by paragraphs 1 and 2 above shall occur as soon as reasonably practicable and shall be provided on fair and reasonable charges, terms and conditions.
4. The Annexes to this Direction form part of the Direction.
5. For the purpose of interpreting this Direction the following definitions shall apply:

“Act” means the Communications Act 2003;

“Additional Functionality” means Scaleable VPs, VP Sharing Limits, Alternative ATM Service Catalogues (VBR-rt, CBR) or any of them;

“ADSL Enabled EUDP” means an EUDP which uses asymmetric DSL, where the bit rate of transmission differs for traffic sent from the End User (upstream) and for traffic sent to the End User (downstream);

“ATM Backhaul” means that part of the Virtual Path between the DSLAM and the first ATM Switch to which that DSLAM is connected within the network;

“ATM Conveyance” means that part of the Virtual Path between two or more ATM switches;

“Basic Services” means an ADSL Enabled EUDP and ATM Backhaul (Service A); and/or an ADSL Enabled EUDP, ATM Backhaul and ATM Conveyance (Service B) as required by a Third Party;

“BT” 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;

“CBR” means Constant Bit Rate;

“Director” means Director General of Telecommunications as appointed under section 1 of the Telecommunications Act 1984;

“Dominant Provider” means British Telecommunications plc, whose registered company number is 1800000, and any British Telecommunications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined by Section 736 of the Companies Act 1985 as amended by the Companies Act 1989;

“DSL” means Digital Subscriber Line;

“DSLAM” means Digital Subscriber Line Access Multiplexer;

“EUDP” means End User Data Path – that part of the network which is the DSL connection between the End User and the DSLAM. This includes the situation: where the Dominant Provider supplies and installs the End User modem; and where the supply and installation of the End User modem is not carried out by the Dominant Provider;

“Hull Area” means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;

“Notification” means the notification of confirmation of proposals under sections 49 (2) and 80 of the Communications Act 2003 for identifying inter alia the markets for asymmetric broadband origination in the United Kingdom (except the Hull Area) and broadband conveyance in the United Kingdom for the purpose of making proposed market power determinations that the Dominant Provider has significant market power in relation to those markets as annexed to the consultation document accompanying this Direction;

“Scaleable VP” means a Virtual Path whose capacity can be changed upon request without the need for the agreement to provide that Virtual Path to be terminated. The minimum capacity available shall be 1 Mbit/s and the unit of change shall be 1 Mbit/s or multiples thereof;

“Third Party” means either:

- a. a person providing a Public Electronic Communications Network; or
- b. a person providing a Public Electronic Communications Service.

“VBR-nrt” means Variable Bite Rate – non-real time;

“VBR-rt” means Variable Bite Rate – real time;

“Virtual Channel, VC” means an established data channel from the End User to the point of Network Access with a Communications Provider’s network;

“Virtual Path, VP” means an established path from the DSLAM through the network to the point of Network Access with a Communications Provider’s network;

“VP Sharing Limit” means a specification of the maximum number of EUDPs that can share a given VP. This is likely to be a function of the capacity of the VP;

6. Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them in paragraph 5 above and otherwise any word or expression shall have the same meaning as it has in the Notification (including in the Annexes) and otherwise any word or expression shall have the same meaning as it has in the Act.
7. 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.
8. This Direction shall take effect on the day it is published.

Sean Williams

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002

13 May 2004

Annex 1

Basic Services

Basic Services shall be composed of

- An ADSL Enabled EUDP and ATM Backhaul (Service A); and/or
- An ADSL Enabled EUDP, ATM Backhaul and ATM Conveyance (Service B),

as required by the Third Party.

ADSL Enabled EUDP

ADSL Enabled EUDPs shall be available with the data rates identified in Table 1. The data rates listed in Table 1 are the ATM cell rate, including headers.

Table 1: ADSL Enabled EUDP data rate options

EUDP Option	Upstream speed (kbit/s)	Downstream speed (kbit/s)
Home 500	64-288 (rate adaptive)	576
Office 500	64-288 (rate adaptive)	576
Office 1000	288	1152
Office 2000	288	2272

ATM Backhaul

ATM Backhaul shall be available with a capacity of 4 Mbit/s and a VBR-nrt class of service

ATM Conveyance

ATM Conveyance shall be available with a capacity of 4 Mbit/s and a VBR-nrt class of service

Annex 2

Additional Functionality

Scalable VPs

The capacity of the VP shall be changeable upon request without the need for an agreement to provide that VP to be terminated. The minimum capacity available shall be 1 Mbit/s and the unit of change shall be 1 Mbit/s or multiples thereof.

VP Sharing Limits

In addition to, or as a replacement of, the previous VP sharing limits (i.e. those operating prior to 21 June 2002 when the ATM Direction was made) more flexible VP sharing limits shall be made available. This sharing limit may be a function of the VP capacity and may include provisions for pre-commitments.

Alternative ATM Service Categories

In addition to the ATM service category provided with the basic services (VBR-rt), VBR-rt and CBR service categories shall also be made available. The ATM service categories are applicable to both the virtual channel (VC) and virtual path (VP).

Annex G

Discontinuation notices – licence conditions

NOTICE TO BRITISH TELECOMMUNICATIONS PLC UNDER PARAGRAPH 9 OF SCHEDULE 18 TO THE COMMUNICATIONS ACT 2003

Notice that certain continued provisions set out in the Continuation Notice given to British Telecommunications plc on 23 July 2003 will cease to have effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Communications Act 2003

1. The Office of Communications (“Ofcom”) in accordance with paragraph 9(9) of Schedule 18 to the Communications Act 2003 (the “**Act**”) hereby gives notice to British Telecommunications plc (“**BT**”) that certain continued provisions contained in Schedule 1 to the continuation notice given to BT on 23 July 2003, which had effect from 25 July 2003 (the “**Continuation Notice**”), will cease to have effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Act, to the extent set out in Schedule 1 to this notice (the “**Discontinued Provisions**”).

2. In giving this notice, Ofcom have, in accordance with paragraph 9(11) of Schedule 18 to the Act, taken all steps necessary for enabling it to decide whether or not to set a condition under Chapter 1 of Part 2 of the Act for the purpose of replacing the continued provisions and whether or not to exercise its power to set a condition under that Chapter for that purpose.

3. All directions, determinations, consents and other provisions which were continued under the Continuation Notice by virtue of paragraph 9(8) of Schedule 18 to the Act will also cease to have effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Act, to the extent that they were given or made for the purposes of the Discontinued Provisions.

4. To the extent that the Continuation Notice does not cease to have effect under paragraph 1 of this notice, the Continuation Notice shall continue to have effect until Ofcom have given a further notice to BT in accordance with paragraph 9(9) of Schedule 18 to the Act that it shall cease to have effect.

5. The Director General of Telecommunications issued a consultation as to his proposals to discontinue the Discontinued Provisions on 2 October 2003 and requested comments by 9.00 a.m. on 16 October 2003. Ofcom have taken into account the comments he received during that consultation.

6. In this notice, except as otherwise provided or unless the context otherwise requires, words or expressions shall have the meaning assigned to them in Part

1 of Schedule 1 of the Notification and otherwise any word or expression shall have the same meaning as it has in the Act. For the purposes of interpreting this notice, headings and titles shall be disregarded.

Sean Williams

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002

13 May 2004

Schedule 1

The following continued provisions which were contained in Schedule 1 to the Continuation Notice will cease to have effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Act, to the extent set out below.

Conditions 43, 45, 46, 47, 49, 69 in so far as those conditions relate to:

- the markets which have been reviewed in the wholesale asymmetric broadband origination in the UK (excluding the Hull Area) and broadband conveyance market review ('the Market Review'), and which will be replaced by SMP Conditions imposed on BT by way of the Notification set out in Annex E of the Market Review published by Ofcom on 13 May 2004; and,
- the provision of IP Stream.

Annex H

Discontinuation notices – licence conditions

NOTICE TO KINGSTON COMMUNICATIONS (HULL) PLC UNDER PARAGRAPH 9 OF SCHEDULE 18 TO THE COMMUNICATIONS ACT 2003

Notice that certain continued provisions set out in the Continuation Notices given to Kingston Communications (Hull) Plc on 23 July 2003 will cease to have effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Communications Act 2003

1. The Office of Communications (“**Ofcom**”), in accordance with paragraph 9(9) of Schedule 18 to the Communications Act 2003 (the “**Act**”) hereby give notice to Kingston Communications (Hull) Plc (“**Kingston**”) that certain continued provisions contained in Schedule 1 to the continuation notice given to Kingston on 23 July 2003, which had effect from 25 July 2003 (the “**Continuation Notice**”), will cease to have effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Act, to the extent set out in Schedule 1 to this notice (the “**Discontinued Provisions**”).
2. In giving this notice, Ofcom have, in accordance with paragraph 9(11) of Schedule 18 to the Act, taken all steps necessary for enabling it to decide whether or not to set a condition under Chapter 1 of Part 2 of the Act for the purpose of replacing the continued provisions and whether or not to exercise its power to set a condition under that Chapter for that purpose.
3. All directions, determinations, consents and other provisions which were continued under the Continuation Notice by virtue of paragraph 9(8) of Schedule 18 to the Act will also cease to have effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Act, to the extent that they were given or made for the purposes of the Discontinued Provisions.
4. To the extent that the Continuation Notice does not cease to have effect under paragraph 1 of this notice, the Continuation Notice shall continue to have effect until Ofcom have given a further notice to Kingston in accordance with paragraph 9(9) of Schedule 18 to the Act that it shall cease to have effect.
5. The Director General of Telecommunications issued a consultation as to his proposals to discontinue the Discontinued Provisions on 2 October 2003 and requested comments by 9.00 a.m. on 16 October 2003. Ofcom have taken into account the comments he received during that consultation.

6. In this notice, except as otherwise provided or unless the context otherwise requires, words or expressions shall have the meaning assigned to them in Part 1 of Schedule 1 of the Notification and otherwise any word or expression shall have the same meaning as it has in the Act. For the purposes of interpreting this notice, headings and titles shall be disregarded.

Sean Williams

**A person authorised by Ofcom under paragraph 18 of the Schedule to
the Office of Communications Act 2002**

13 May 2004

Schedule 2

The following continued provisions which were contained in Schedule 1 to the Continuation Notice will cease to have effect from the date this notice is deemed to be effected in accordance with section 7 of the Interpretation Act 1978 and section 394(7) of the Act, to the extent set out below.

Conditions 43, 45, 46, 47, 49, 69 in so far as those conditions relate to:

- the market which has been reviewed in the wholesale asymmetric broadband origination in the Hull Area market review ('the Market Review'), and which will be replaced by SMP Conditions imposed on Kingston by way of the Notification set out in Annex E of the Market Review published by Ofcom on 12 May; and
- the provision of IP Stream.