



**BT'S RESPONSE
TO OFCOM'S EXPLANATORY STATEMENT AND
NOTIFICATION DOCUMENT**

**'WHOLESALE BROADBAND ACCESS MARKET –
IDENTIFICATION AND ANALYSIS OF MARKETS,
DETERMINATION OF MARKET POWER AND SETTING
OF SMP CONDITIONS'**

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PUBLIC VERSION

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2. Millward Brown Associates. Response To Ofcom's Explanatory Statement And Notification In Respect Of The Wholesale Broadband Access Market.
3. Professor Martin Collins. Wholesale Broadband Access Market Response to the Explanatory Statement and Notification.
4. Professor John Nankervis. Advertising And Price Elasticities Of ADSL Access.

Note. This Response refers to Ofcom throughout for simplicity.

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EXECUTIVE SUMMARY

1. Broadband is key to the future prosperity and competitiveness of the UK.
2. The UK Broadband environment is one of the most competitive in the world. Customers already buy a range of Broadband services available over cable, dsl, satellite, and increasingly wi-fi and wireless – with 3G and other developments providing yet further options for the delivery of broadband services.
3. Broadband is growing faster in the UK than anywhere in Europe and indeed faster than in the US. Internet Service Providers and communications providers of all shapes and sizes are generating rapid innovation and competing vigorously for users' business at all levels of the value chain.
4. The commitment of BT, and others, to Broadband through demonstrable investment and innovation is central to this success story. Since December 2001:
 - The number of broadband users has boomed from 300,000 to over 3 million.
 - ADSL broadband users have grown from 126,000 to nearly 2 million.
 - ADSL coverage has increased to reach over 85% of UK households and businesses.
 - Purchasers of wholesale broadband services (including ISPs, Operators, ICT companies and corporates) have more than trebled. Today there are 150 Service Providers with more than 100 offering residential broadband services and almost all offering business services.
 - Average prices of retail services have dropped from £150 connection and £458 rental per end user to free connection and £280 per annum rental.
 - Prices of BT wholesale services have fallen by over 60%.
5. BT has invested over £700 million in Broadband with a further £300m already committed.
6. These developments have been firmly based upon competitive, commercial activity, taking full account of the views of all stakeholders, rather than being driven by a detailed regulatory framework. BT suggests that the facts of the broadband story are not compatible with classic monopoly scenarios of restricting output and raising prices.
7. BT is focused upon maintaining its central role in delivering Broadband but does not believe on technical economic grounds that this continuing focus leads, to a Significant Market Power designation.
8. In any event, consideration of the appropriate regulatory environment needs to encompass not just technical evaluations of SMP, but more importantly: the actual and potential competition; the opportunities for players at all levels of the market; geographic segmentation; and, crucially, the promotion of a sound risk and reward framework to encourage further substantial investment.
9. Such a framework will be a key determinant of whether companies invest in:
 - Infrastructure to the home (cable, fibre and copper in the local loop, 3G, other wireless solutions).

- Intermediate networks (national networks or geographically restricted infrastructure) whether IP or ATM based.
 - Enabling technologies to facilitate content and services creation.
 - Content and services creation, and development of the associated business models and partnerships.
10. Any such framework should be viewed in the light of whether it encourages investment to be made in an economically efficient manner to ensure that customers get both choice and value for money.
 11. There is also a clear choice to be made between setting a simple framework with unambiguous rules, or a complex one where rules and outcomes are uncertain. The proposals set out in the 16th December document appear to be of the latter variety. Indeed, some of the proposed obligations seem unnecessary given that they relate to actions that BT willingly undertakes as good and sensible commercial behaviour.
 12. The Review proposes that pricing of wholesale broadband access services should be subject to what is termed 'Retail Minus' controls – but which is effectively a new version of today's Margin Squeeze Test. This Test is to be applied between sets of wholesale prices. While the hypothetical arguments for some form of price safeguard are understood, as is Ofcom's desire for more clarity than the current Margin Squeeze Test, concerns remain for BT even in advance of seeing the detail promised for a later consultation.
 13. These concerns arise primarily from the potential use of the Test not as a regulatory safeguard but as a tool to encourage specific sectors, and underlying technologies, in the broadband field. Ofcom should be clear and open about its objectives in this respect. If the underlying intention is, for example, to use the test to promote DataStream, where prices are already half those across the rest of Europe, and thus ATM in the face of technological developments worldwide, then this should be made explicit so that all players in the broadband area can consider their positions. At this stage there appears a real possibility that the margin may be set significantly above the costs of a reasonably efficient market entrant and thus not be an incentive to efficient investment.
 14. The proposed new pricing framework also appears likely to focus only on today's product set, and leaves any new developments subject to unclear obligations. Given the rapid rate of technical evolution in this area, the framework could promote portfolio sterilisation rather than additional innovation.
 15. Therefore, the promised consultation on the Test must not be so narrowly defined as to preclude the development of a different structure for the Test, or indeed alternatives to it.
 16. The obligation to meet each and every stated requirement for new broadband access services could lead to conflicting pressures on specific design and evolution decisions. A pragmatic approach to this will need to be developed with all interested parties.
 17. The Wholesale Broadband Access Market Review offers the opportunity to adopt fresh thinking that could accelerate broadband benefits for the UK, and BT welcomes the chance to contribute to the debate on how this might be achieved.

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1. OVERVIEW

1.1 Structure of BT's response

1. This document represents BT's comments on Ofcom's Explanatory Statement and Notification Document "Wholesale Broadband Access Market – Identification and analysis of markets, Determination of market power and Setting of SMP conditions" published on 16th December 2003.
2. In Section 1 of this response we set out our overall views on the regulatory measures proposed, and the market analysis that forms the basis of the Ofcom proposals.
3. Sections 2, 3 and 4 provide more detailed comments on the market analysis underpinning the regulatory proposals, and Section 5 suggests improvements to some of the detail in the proposed Conditions, as well as recording BT's concerns at the general direction of regulation for broadband services.
4. We are also submitting a separate confidential Paper setting out recent evidence of competitive entry strategies employed in this developing marketplace.

1.2 The Broadband Environment Appropriate Regulation

5. Broadband in the UK is thriving as a result of innovation and investment. The UK now enjoys the fastest growing broadband take-up in Europe and take-up that is growing more rapidly than in the US. Some indicators of the benefits of this include the following:

▪ **INDICATOR 1: OVERALL INTERNATIONAL RANKING**

G7 RANKINGS (Q3 2003)

The UK has further consolidated its position in terms of its broadband ranking within the G7 over the past six months, building on the significant progress made during the previous year. In general, there has been little movement within the rankings of the countries studied.

- The UK was ranked third in the G7 ranking in Q3 2003 for competitiveness, which measures choice, price and regulation. A primary reason for the UK's strong performance is that its infrastructure competition, measured as part of the choice index, is relatively healthy.
- Retail competition is also available from the resale of BT's wholesale ADSL product and this compares favourably with many European markets, where retail competition is more limited.
- In terms of extensiveness, the UK moved up to third equal with the USA by virtue of improving its ranking in service availability.

[Source: BSG 3rd Annual Report & Strategic Recommendations, January 2004 p. 51]

▪ **INDICATOR 2: PRICES AMONG THE LOWEST IN EUROPE**

For residential users:

“– when cable modems are included prices in the UK are significantly cheaper than Germany and the US, similar to France and only in Sweden are prices cheaper; and
– when cable modems are excluded the UK is similar to France and cheaper than all other countries.”

For business broadband users:

“ - for the most basic services available to business (i.e. where the business has a minimum bandwidth requirement of 257 kbps downstream), only in France are prices cheaper; “

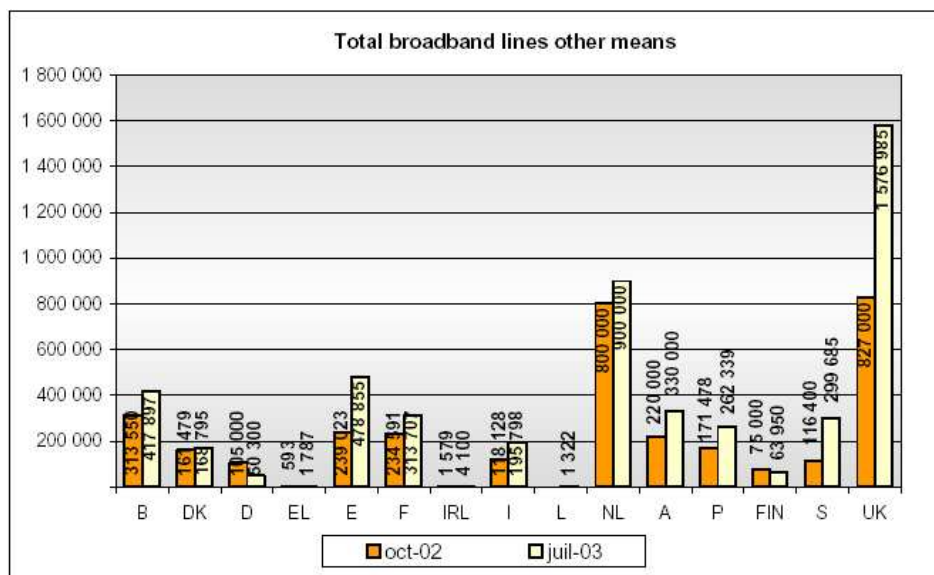
[Source Oftel's Internet and Broadband Brief, December 2003]

▪ **INDICATOR 3: STRENGTH OF INTER-PLATFORM COMPETITION**

The European Commission recently described the UK as being:

‘the most dynamic broadband market in the EU’.

[Source: European Commission, Broadband access in the EU, Working Document, 10 September 2003, COCOM03-40 annex.]



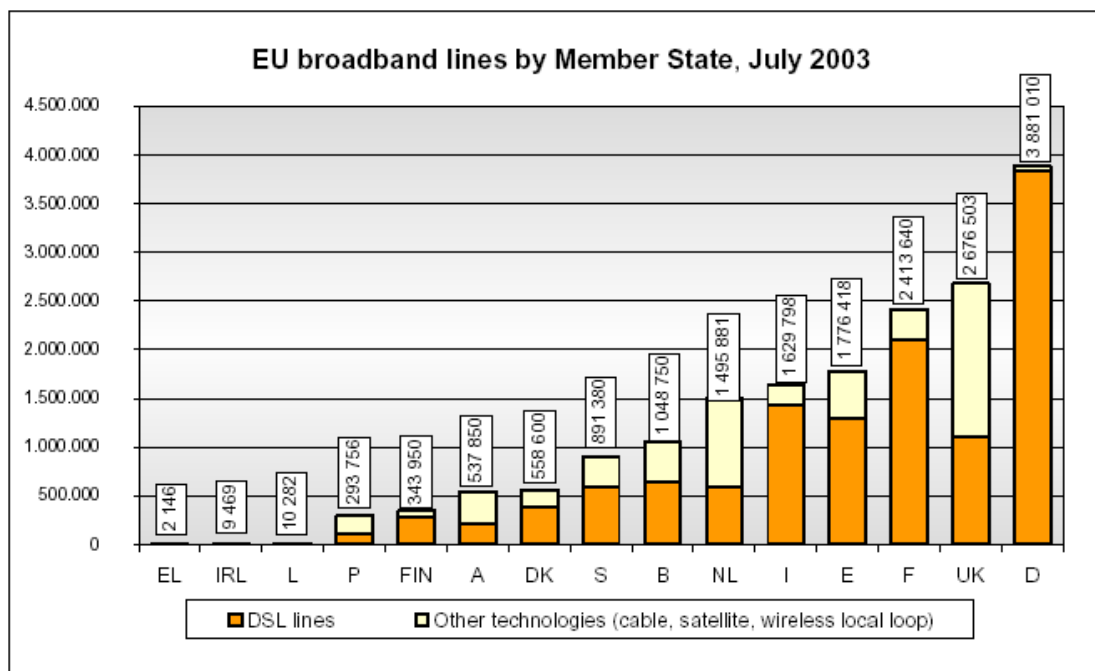
Broadband Lines By Means Other Than DSL

Source: European Commission, 9th Implementation Report, Figure 54, Annex 1 p. 53

▪ **INDICATOR 4: MARKET GROWTH**

“There has been an 18 point increase in broadband coverage over the last 12 months. 84% of the UK population now has access to a mass-market broadband solution that is one that is targeted at residential or small business customers. Ubiquitous satellite services are also available, although they continue to be priced at a premium to terrestrial services at present and are not included in the coverage statistics.”

[Source: BSG 3rd Annual Report & Strategic Recommendations, January 2004 p. 47]



[Source: European Commission 9th Implementation Report Annex 1.]

6. Clearly this is a complex market structure compared with traditional telecoms markets and it is still young and rapidly evolving. Yet to BT, Ofcom's proposals seem to assume otherwise: (a) the market analysis and the proposed regulatory remedies are rooted firmly in today's BT product portfolio; and (b) there is little recognition of the rapid evolution that is set to take place over the next few years. This is a marketplace where user behaviour can change very rapidly and new technology may emerge in timescales of months.
7. Going forward, BT is committed to continue to invest and innovate. However, BT's huge investment (of the order of £1bn) carries risks. It is vital that Ofcom creates an appropriate regulatory regime that encourages such innovation and rewards those companies – not just BT - who are willing to take a lead in investing for the future.

1.3 The Proposed Remedies Are Disproportionate

8. It is proposed that a full range of regulatory measures be imposed upon BT's wholesale DSL services. BT believes that this is potentially extremely damaging to consumer

interests as well as to investment incentives in the industry. BT feels that the proposed application of all of the obligations provided for in Articles 9 to 13 of the Access and Interconnection Directive is disproportionate and is at variance with the stated purpose of the new regulatory framework. It also does not reflect the underlying weakness of the economic analysis which has led to the SMP designation on BT.

9. Although some of the proposed obligations are already established and accepted by BT as good commercial practice (and hence regulation on these points is unnecessary and inappropriate), two of the proposals cause specific concern. These are the new version of the Margin Squeeze Test and the requirement to provide new Network Access on request.
10. Application of the Margin Squeeze Test could lead to distorted investment policies; the proposed obligation to meet individual requests for new access may distort network design decisions and lead to irreconcilable requests from different industry players.
11. BT will reserve its final position on the MST for the full consultation. Our initial reaction is that the proposal is likely to be difficult to manage and will place an unfair level of risk onto BT, especially from the granting of real options benefits to third parties. The formula which Ofcom appears to be proposing, punishes rather than rewards BT for taking risks and making the investments that have formed the basis of the UK's strong position in broadband.
12. BT also has considerable issues with the requirement to meet all access requests for new services from any third party. This appears to be unbounded in scope and potentially difficult to manage where requests are either overlapping or mutually incompatible on commercial, technological or practical grounds. Ofcom has already mandated the supply of added functionality services which have no part in the Market Review.
13. Whether or not SMP is designated, BT will continue transparently to supply a comprehensive range of basic and intermediate broadband services in order to meet the diverse needs of ISPs and others, including a near end, in-span handover service (e.g. DataStream service A). These services are available on the same terms to Altnets (PECNs) allowing them to create competitive or alternative services to ISPs and others.

1.4 Market Boundaries

14. BT believes that there are a number of technical errors both in this Review and others, which materially undermine the validity of the conclusions drawn by Ofcom. These include inconsistent time periods and a mixture of single, partial and multiple product testing in the application of the Hypothetical Monopoly Test. The response details our concerns in these areas and includes Reports from external consultants.
15. BT notes that Ofcom has accepted some of the objections raised by external experts on the use of survey information. We remain of the view that Ofcom continues to place undue reliance on a single survey (133 respondents only) in determining that retail broadband services are separate from unmetered narrowband services. Ofcom provides very little additional evidence for its market segmentation and unreasonably dismisses compelling analysis to the contrary.
16. At the wholesale level, we believe no distinction should be drawn between 'intermediate' and 'access/conveyance' services in the manner which Ofcom proposes which is based on an historic perspective of the physical topology of networks and not on economic features of supply. The practical effect of this approach is to treat DataStream and

IPStream services as serial with each other (in that order) when in economic terms, they are alternatives. ISPs can - and do - switch between them directly.

17. Further, BT does not accept that the price constraining sources on wholesale services arise solely from retail markets, but they also emanate from alternative networks themselves, the components of which are generally already regulated (in fact at various points in the consultation Ofcom also appears to accept this).
18. For both retail and particularly wholesale access services, BT maintains that the market does not have a UK-wide boundary and that current uniform pricing by BT is not a sufficient condition to assume a national market.

1.5 Market Power

19. BT considers that the high reliance on prospective end-users as an indicator of market share and market power, neither meets the requisite economic test of ability to price above the competitive level, nor the standards of relevant case law. The history to date has been one of intense competition which will continue.
20. Ofcom provides no empirical evidence on the materiality of barriers to entry or the assertion that the business risks faced by Altnets are higher than those faced by BT. Further, BT does not agree that Altnets would need a ubiquitous presence to enter the marketplace as BT would continue to offer wholesale access services absent regulation.
21. Contrary to the position stated by Ofcom, BT believes that countervailing power is a strong force in the marketplace and ISPs could easily facilitate expansion by Altnets through the tendering process. The distinction between access/conveyance and intermediate services has no meaning here.
22. Regarding other indicators of market power, BT considers that Ofcom maintains contradictory positions within and between Market Reviews. Economies of scale are relatively modest when Ofcom conducts the market boundary test (leading to narrow markets) but very significant when looking at BT's own market position. BT is supposed to have access to lower cost of capital for broadband but in the unmetered termination review, Ofcom stressed the importance of many Altnets having had their debts written off. These are irreconcilable positions.
23. Quite apart from these points, BT maintains that the original market boundary is too narrow and the inclusion of unmetered narrowband services would further undermine the case for SMP designation. In summary, there is no evidence that BT can price above the competitive level.
24. Even if Ofcom's market definitions were to be supported, BT considers that there is no evidence that BT could maintain prices above their competitive level. The presence of unmetered access and competition from cable companies already constrains the prices which BT can charge for wholesale broadband access services. BT's roll-out of broadband service availability involves substantial new investment with attendant commercial risks.
25. To the extent that third parties do not wish to enter the marketplace, we would assert that it is primarily due to the underlying commercial environment and not market failure requiring regulatory intervention.

1.6 Appropriate Regulation

26. There have been calls¹ for a fresh approach to regulation in the telecommunications sector. BT agrees. Continuing innovation and investment in the infrastructure of the UK is critical if it is to compete on a global basis. The UK may be making great progress with broadband with the fastest-growing take-up in Europe but regulation needs to let the marketplace evolve at its own pace and .
27. Ofcom's approach is vital here. Past regulation has tended to reflect the old realities whereas new regulation has to be forward-looking and future-proof. Broadband is quickly becoming technology-neutral with the development of 3G, cable, DSL (digital subscriber line), wi-fi, fibre and satellite and the old focus on BT's network is fast becoming out of date.
28. Rather than lifting aspects of the old regulatory regime into the new, what is required is a fresh, innovative approach to mirror the innovation in the marketplace. BT is committed to creating networks to facilitate the advances of the future and is committed to the continued development of broadband services in the UK. BT will continue to promote and develop a wide variety of both retail and wholesale services and would do so absent regulation.
29. Other infrastructure providers, and in particular the cable companies, are also investing heavily in this sector. However, much will depend on a regulatory regime that rewards the investors, risk-takers and leaders, and not just the companies that will benefit from the platforms that others provide.
30. It is recognised by many commentators that the benefits facilitated by broadband roll-out will be a key driver of future economic prosperity and competitiveness for the UK. Given this significance, BT believes that a shared vision of a successful 'Broadband Britain' needs to be established by all stakeholders. Politicians, regulators, public and private sector enterprises, consumers, citizens and those within the UK telecoms industry need to develop a joint framework which, whilst meeting social policy and market development objectives, will also reward investment and innovation in a commercially tangible way.
31. The benefits of broadband, and indeed other ICT services, will not accrue to the UK without those within the ICT industry, and its investors, taking significant risks in the early days of these nascent markets. For both market players and investors, a key measure of success will be to achieve an appropriate balance between risk and reward. Without this fundamental business concept being at the forefront of the regulatory agenda, the incentive to invest in this dynamic market will be stifled and the significant benefits to the UK, lost.

¹ Financial Times 15th January 2004, 'Ofcom is urged to re-think rules'.

2. RETAIL MARKET BOUNDARIES

Note. The following Reviews have also been cross-referenced in places in the discussion below as the economic analysis underpinning the distinction between retail broadband and narrowband services appears to be common throughout: 'Fixed Narrowband Retail Services Market' Statement August 2003; 'Wholesale Unmetered Narrowband Termination', Statement August 2003; 'Fixed narrowband wholesale exchange line etc' Statement August 2003.

2.1 The Three Criteria Delineating Broadband Do Not Demonstrate Willingness To Pay

Ref. 2.32-2.43

2.1.1 There Is No Economic Rationale For These Criteria To Be Necessary

32. The three criteria are:

- The service is always on i.e. no dial up is required.
- Use of voice and data simultaneously.
- Faster downstream speed than a dial up connection.

33. Ofcom argues (2.34) that 'it is necessary for **all** of these characteristics to be present for a service to be defined as broadband' (emphasis added). Elsewhere² Ofcom goes through the different retail Internet services against this checklist; 'In the Director's view it is necessary for all of these characteristics to be present simultaneously ...'.

34. In BT's view, this is fundamentally flawed not only as an economic principle in its own right, but also it is not demonstrated as relevant in Ofcom's own analysis. While informing something about potential willingness to pay for services with these characteristics, they are neither necessary nor sufficient to demonstrate separate economic markets in either direction i.e. whether the services in question do or do not form separate or joint economic markets.

35. The issue of using distinguishing features in this fashion has long been recognised as incorrect practice. Bishop and Walker³ summarise the issue by examining the classic competition law cases of *Nestle/Perrier* and *United Brands*. They write as follows:

'There is a similarity between these sorts of arguments and the process of narrowing market definitions by simply adding more and more adjectives. The process is totally arbitrary and any market definition can be advanced simply by selectively appealing to product characteristics and intended end use. ... This point is demonstrated clearly in the *United Brands* case.... the banana market had certain special features that were sufficiently distinctive for it to be regarded as representing a distinct relevant product market - year round availability, the ability to satisfy the constant needs of an important part of the population and the limited effect of competition from other fresh fruits at the banana's peak periods. This conclusion appears to have been made on the basis of very limited empirical evidence It will always be possible to construct a list of differences. But the real question is whether or not these differences are meaningful – an issue that needs to be settled by having recourse to empirical observation.'

² Fixed Narrowband Retail Services Market Statement August 2003, section 2.41.

³ The Economics Of EC Competition Law, Sweet and Maxwell, 1999 section 3.28-3.29.

36. There is a very strong parallel with the procedure which Ofcom has adopted in the case of Internet access e.g. 'always on' and 'year round availability'. Essentially on the basis of very limited empirical evidence, Ofcom has advanced a set of criteria similar to the Courts inferred in *United Brands*, but this is a procedure which has subsequently been discredited. In fact, not only is the empirical evidence for the importance of the criteria inadequate (discussed next section), the application of the Hypothetical Monopoly Test (HMT) and critical sales loss (CSL) is also undertaken incorrectly (discussed below). Further, on the basis of the February 2003 consumer survey, 17% of consumers valued 'better quality/more accessible content'. In principle Ofcom could have included 'new applications/content' as a determining criteria but has decided to withdraw it. It is equally open for Ofcom to withdraw the other criteria rather than arbitrarily to retain some and discard others.
37. The OFT⁴ also argues that 'Substitutes do not have to be identical products to be included in the same market'. By the same token, this permits products with different characteristics to be in the same market and so Ofcom's three characteristic test is not the basis of sound practice. If they are definitive in determining willingness to pay, this will be evidenced in the relevant price elasticity which forms the HMT. This is a purely empirical matter. It follows that Ofcom should not pre-judge the issue one way or the other. The criteria are therefore of interest but cannot meet the role which Ofcom ascribes to them.
38. More recently, the NERA Report⁵ for the OFT stressed that:
- 'Furthermore it is not necessary for products to be identical or even very similar, in order for them to be demand-side substitutes. Indeed, it is possible for products with different physical characteristics to be seen as sufficiently substitutable by customers for them to be legitimately regarded as demand-side substitutes. For this reason, defining relevant markets **solely** with reference to physical characteristics will often lead to markets defined too narrowly.' (emphasis added)
39. While Ofcom does not define markets **solely** with reference to physical characteristics, nevertheless this approach is being used in conjunction with other tests including the SSNIP test. The consequence is that markets are defined too narrowly as services are deemed to fail to meet the characteristics even where the HMT indicates that they ought to be included in the same market.

2.1.2 Different Market Research Techniques Are Needed To Show The Importance Of Characteristics

40. One difficulty of Ofcom's approach is that its general surveys do not really incorporate the correct analysis to evaluate the strength of the individual characteristics as the respondents are not able to place any weight on their valuations against alternatives. It is standard practice to use conjoint analysis or Simultaneous Multi-Attribute Level Trade-Off techniques to look at how consumers value characteristics (see Report by Millward Brown Associates). There seems little point in Ofcom using a methodology for a purpose which is inappropriate. Case Associates⁶ for example argues that it is not strong preferences which matter but consumers with weak preferences who might be prepared to switch who are most important in terms of market boundaries.

⁴ Market Definition OFT 403 para 3.4 March 1999.

⁵ The role of market definition in monopoly and dominance inquiries. Economic Discussion Paper 2 July 2001, OFT342.

⁶ Market Definition by Survey Approaches, acceptability and pitfalls, CASE Associates CASNOTE, December 2003.

41. In the specific circumstances of broadband, Ofcom has not looked at the impact of alternative packages such as the combination of narrowband Internet access and mobile phones as jointly replicating the basic capability of broadband Internet access. The combination of these enables simultaneous transmission in the outward direction of calls. Mobile charges are very low in the evening period when residential demand for internet access is greatest. Even incoming calls can be received via the (free) BT 1571 service on BT lines when the line is engaged.
42. Ofcom has simply not looked at packages of alternatives such as these in their analysis, nor, as will be discussed below, the related packaging of premium TV.

2.1.3 The Necessity Of Each Criterion Is Not Demonstrated

43. Beyond the very limited survey information, Ofcom advances no empirical evidence for these criteria. In BT's view, if Ofcom wishes to continue to use them then much better analysis will be needed and the criteria will need to be shown to be essential in determining the outcome of the HMT itself.
44. BT also disputes Ofcom's claim (2.35) that 'the only speed at which he (the Director) can identify a break in the demand side chain of substitution for the timescale of the current review is that consistent with the step-change of the other two functionalities'. BT can see no evidence at all that Ofcom has identified any break in the chain of substitution across bandwidth. On the contrary, as shown below, the Ofcom surveys clearly indicate a chain of substitution across all bandwidths and tariff structures. There is therefore no tie-in with the attributes of always-on and simultaneous use of voice.
45. Further, Ofcom uses the results of **different** surveys for its reliance on attributes and for the potential responsiveness to price increases for consumers. As discussed below, the results of the latter differed from the equivalent results in the previous two surveys including those used to evaluate product characteristics. Some considerable doubt must therefore surround the stability of the survey results of importance of the three criteria to broadband users.
46. Finally, in practice, it is easy to argue that ISDN is also in essence an 'always on' service in that a single click on an icon will establish a connection (the Windows operating system can easily be configured so the user has full experience of always-on). The same network protocol is used to establish a connection in both dial-up and broadband services. In practice, therefore, Ofcom appears to be relying on relatively trivial product characteristics to delineate market boundaries.

2.2 The Unique Contents Argument Continues To Be Advocated

Ref. 2.23-2.48

47. While BT is supportive of Ofcom dropping the 'unique contents/applications' argument, we are unconvinced that Ofcom has actually dispensed with it in practice. Indeed, Ofcom seem to resurrect the argument at various stages and even when the characteristic is removed, it seems to return as a qualified possibility – '...there remains the possibility that content only practically attainable over broadband services could develop' [2.31].
48. BT submitted a detailed economic assessment on both the supply and demand sides for new applications. We showed that even if such content did develop, it would not demonstrate that broadband Internet access would be a distinct economic market as other distribution channels are already highly likely to be distributing that content and had potential to price in response to broadband access entering the marketplace. In other words, Ofcom would have to widen considerably its choice of competitive substitutes and

it is by no means a clear cut case that willingness to pay for such content would enable broadband access to have unique selling points to enable a monopolist to make a monopoly profit. (It is further arguable that the development of unique content is not a *ceteris paribus* assumption underpinning the HMT.)

49. Consequently, BT considers it to be inappropriate that Ofcom should continue to cite the sources such as the SPR Report [2.37] when all the evidence points to the difficulties of maintaining such a conclusion. The argument that 'there remains the possibility' [2.39] of unique content developing is not really adequate in itself as a basis of regulation and market assessment as it is not an evidenced-based proposal.
50. BT has supplied Ofcom with extensive independent analysts' reports whose market knowledge might be expected to be high, which cast serious doubt on such a stance. Ofcom quoted no independent reports (other than the SPR Report which did not support Ofcom's case) to justify its own position.
51. An alternative understanding of Ofcom's opinion is that the surveys have produced results which actually overstate potential switching from a price increase [2.91]. It follows if this is the case, that the surveys must have understated the potential switching for narrowband Internet users, raising questions as to whether these are relevant economic markets. (This is based on Internet access and clearly the issue of voice usage is also relevant.) But Ofcom provides no evidence for this either, and acknowledges the contrary force of the mix of broadband customers and infra-marginal customers with a lesser willingness to pay for broadband Internet access. The report prepared by Millward Brown for BT (attached) comments on Ofcom's refusal to consider market research on this matter.

2.3 BT Has Major Concerns On How The SSNIP Test Has Been Undertaken

Note. The comments below include discussion of the parallel market analysis undertaken in the narrowband Market Reviews.

2.3.1 The Use Of Inconsistent Time Periods

Ref. 2.81-2.93, Annex A Part 2.

52. In the Wholesale unmetered Review, Ofcom (B.6) says that 'Since the SSNIP is regarded as a non-transitory price extending to at least a year, Ofcom considers appropriate to use the long run marginal cost'. In the Review of the fixed wholesale narrowband services, Ofcom (3.121) suggest that the period of review is 'over the next 18-24 months' and this also appears in the April 2003 Broadband Market Review [2.127]. In practice, Ofcom's estimates of LRIC extend to an assessment of capital costs which are depreciated over 5 years⁷. The potential physical and economic lifetime of these assets is greater still.
53. BT accepts that there will be some uncertainty in the estimation of these parameters and supports the use of sensitivity testing. However, in this context, we believe that: (a) LRIC is not the correct parameter to apply to operate the SSNIP test; and (b) the values which Ofcom uses, even assuming that LRIC was appropriate, are not plausible.

⁷ Correspondence via email with Ofcom, 13th January 2004, between Paul Richards (BT) and Naaz Rashid and David Clarkson (Ofcom).

54. The HMT is however essentially a short-run test of market power following a non-transitory price increase. It is assessed over a period of up to two years. It is arguable that the relevant cost benchmark is not even that of an increment but rather the short-run avoidable costs which would be saved from the (hypothetical) output reduction.
55. BT maintains that Ofcom is mixing time lengths in a manner which will have the impact of tending to find market power and hence narrow markets in a biased fashion. Dr I Dobbs sets out the difficulties with Ofcom's approach. In this particular case, Ofcom uses an own price elasticity which, in comparison with other sources of evidence, is unusually low (and the period of relevance is not at all clear from the surveys), and at the same time a cost to price ratio which is equally evidentially much too high. Either of these would tend to bias the results of finding an economic market when none exists and together they ensure such a finding.
56. It is not clear exactly what time frame to apply to the price elasticities from Ofcom's surveys, as acknowledged by Ofcom itself. In any case, the analysis confuses own and cross price elasticities as discussed in the section below.
57. The other important parameter impacting on the HMT (SSNIP) in the single product case is the ratio of marginal costs to (the quasi-competitive) price. Ofcom takes a range of cost to price ratios in its calibration of the SSNIP test as shown in Table1 below.

Table 1

Ofcom's Cost To Price Ratios (Residential)

Review	Lower Bound	Upper Bound	Critical Sales Loss
Unmetered Narrowband	43%	81%	15%-35%
Broadband			
April 03 Consult. [C34]	38%	58%	14%-19%
Dec 03 Consult. [Annex A]	56%	76%	18.5%-29.4%

Notes. The details of marginal costs are taken from the unmetered narrowband termination Review and the broadband Reviews.

58. The important impact on the ratio to the CSL is very evident – the higher the ratio, the higher the CSL and the more likely that a narrow market is found. In fact, Ofcom raised the ratio significantly between this review and the previous consultation and the lower bound is now much higher than the April Consultation, and also the lower bound in the unmetered narrowband review.
59. BT refers to Ofcom's use⁸ of a value of 0.31 as the central benchmark for the asset to volume elasticity relevant to a price control (PSTN). This is over a period which is longer than Ofcom has used for the HMT so the true relevant elasticity for a shorter period should be less. The range which Ofcom proposed was 0.24 to 0.38. While the networks are not the same, nevertheless the disparity is enormous.
60. BT therefore does not accept that 'the Director has taken a conservative approach' [Annex A page 158] in calculating the CSL. On the contrary, it is exactly the opposite, a set of calculations which almost inevitably mean a narrow market boundary is found. We point out below that the implication of Ofcom's ratios - which is that economies of scale are not material to the provision of broadband services (and certainly if the upper bounds are used) - is to imply only very modest benefits of size and they do not therefore support a finding of dominance.

⁸ Proposals for Network Charge and Retail Price Controls from 2001, Ofcom, February 2001 section 4.44.

61. BT understands that in making these assessments, Ofcom has made some use of costing information submitted by BT in the past. We would like to point out that these values include the costs of roll-out to new locations and the provision of completely new infrastructure such as transmission. These costs also include depreciation from previous investments are therefore not *ex ante* sunk, and are not forward looking in a suitable fashion for this particular exercise which concerns the ability to derive market power given volumes and prices at their current levels.
62. In the short space of consultation, BT has not been able to definitively assess the relevant ratio of marginal cost to price but is confident that the Ofcom central case of around 0.7 must be excessive. Our initial modelling of network costs indicates an elasticity of 0.15-0.35 in a forward-looking timeframe of up to two years and a little more of the order of 0.3-0.4 for a period of five years (which is of course longer than the Review period).
63. The only way in which such a high level of 0.7 can be achieved in BT's network cost modelling is if the complete broadband programme is assessed from time of launch (late 1990s) over a ten year period. In other words, it is taking both the extreme long-run and is retrospective. Any subsection of periods starting at a later point in time (treating previously sunk costs as fixed forward looking) would produce much lower values of the ratio.

2.3.2 There Appears To Be A Mixture Of Single, Partial And Multiple Product Tests Within And Between Market Reviews

Ref. 2.82-2.88; 2.89-2.93 other Reviews.

64. Ofcom in fact deploys three sets of mutually incompatible approaches to defining market boundaries, namely:
- Based on **characteristics** alone (discussed above).
 - Based on **partial** demand supply substitution (excluding so called 'income effects').
 - Based on net **profitability** resulting from a rise in the competitive price (the CSL test).
65. The inadequacy of looking at characteristics has been examined above. The two other approaches appear to extend to both the broadband review and the parallel narrowband investigations and in particular, the designation of unmetered narrowband Internet service as a separate economic market. The paper by Dr Dobbs sets out the problems with these approaches in greater detail. In principle, BT supports Ofcom's use of the CSL although in this case, the incorrect parameter values have been used. In the case of the narrowband Reviews, the test has not been applied correctly and also in the case of SMEs for broadband.
66. The consequence of mixing between three methodologies in practice, is that Ofcom:
- Identifies separate markets when (to the extent the survey information is to be believed) they should not be so designated.
 - Fails to identify chains of substitution when they are also evident.
 - Confuses single and multiple product testing in the context of relevant markets.
67. Ofcom [2.84 footnote 4] sets out a view that the HMT should not include 'income effects'. This seems to be paralleled in other reviews (for example the wholesale unmetered termination Review para A.51), and that the HMT is only concerned with partial substitution to the particular pair-wise combination of services that is being looked at. (Similarly, Ofcom seems to look at the potential price constraining impact of LLU as to

whether it is a necessary and sufficient constraining influence in its own right as distinct from whether it is one of many such constraining factors.)

68. The HMT SSNIP test is based on net profitability however. That is, it depends on **own** price elasticity and not a **partial** or cross price elasticity. Put another way, there is no reason to exclude 'income effects' which are, in any case, simply substitutions to other products (those outside the product set under consideration including 'savings'). Figure 1 shows the relationship between own and cross price elasticities as they enter the HMT. In fact, under certain circumstances, it is possible that only the own price enters but in general, this will be true only in the case of a single product test.
69. BT is unaware of any other regulatory authority using the HMT in the manner of Ofcom. If Ofcom believes that its stance of excluding 'income effects' has merit, BT suggests that a formal mathematical analysis is prepared in which the precise reasoning can be elucidated. As it stands, BT considers that Ofcom's approach is simply incorrect.
70. The error in this approach was in fact identified in earlier Reviews. As noted, Ofcom responded to criticisms in the wholesale unmetered Review [A.51] by a respondent (not BT) that the HMT was not being correctly applied. In BT's view, the respondent was perfectly correct. As discussed below, the survey evidence does not support either broadband or unmetered narrowband services falling into separate markets and, particularly in the case of the latter, there is no likelihood of these services being a separate economic market at all for either residential or business users based on Ofcom's own survey evidence. The designation of separate markets only arises because Ofcom has applied the HMT incorrectly.
71. A further example of confusion is evident in the broadband Review where, unlike in unmetered narrowband services, Ofcom chooses to conduct a **multiple** service test without having established whether the services individually constitute economic markets or not in their own right. Hence for SMEs, Ofcom [2.90] aggregates asymmetric broadband service, leased lines and ISDN, and draws the (incorrect) conclusion based on minimum sales losses, that asymmetric broadband service alone is an economic market in its own right.
72. This example is actually doubly confusing given Ofcom had already decided, based on characteristics alone, that ISDN is **not** a broadband service [A42]. If ISDN is not treated as broadband but just as another potential substitute for asymmetric Internet access in a chain of bandwidth, then the price increase in the SME survey is actually unprofitable i.e. the CSL for asymmetric access is reached and the service is not a relevant economic market.
73. Note that Ofcom also includes leased line services in this analysis (which of course are actually a symmetric service) suggesting that this network is also in competition with asymmetric broadband. Again, Ofcom [2.196] appears to contradict this position by saying that at the wholesale level, PSTN and PPC services should not be included in the relevant market ('The Director Disagrees').
74. We present further analysis of the surveys below which brings out some of the seemingly incompatible analyses and results.

THE INTERPRETATION OF THE HMT

For the single product case, using s =proportionate increase in price, then the price increase is profitable if

$$(1 + (m + s)\eta) > 0, \quad (1)$$

a result which also rearranges to give the standard critical sales loss formula. The single product case only includes the own price elasticity. In the multi-product case, the relevant price elasticities in the HMT are own and cross-price elasticities. However, it is of interest to note that the latter can be ‘collapsed’ into an ‘aggregate own price elasticity’ in the specific case where the price-cost margins are equal for all products. To see this, first note the general form for the 2-product test:

$$R_1(1 + (m_1 + s)(\eta_{11} + \eta_{12})) + R_2(1 + (m_2 + s)(\eta_{21} + \eta_{22})) > 0 \quad (2)$$

Essentially profitability depends on own price and cross price effects because the proportionate price increase across the two services will have some ‘switching’ effects which need to be taken into account.

It can also be thought of very roughly as an overall or aggregate own price effect. To see this, one first has to define an index of output for the differentiated services. The natural choice is a price weighted index of the form

$$Q_I = \frac{p_1^0 q_1 + p_2^0 q_2}{p_1^0 q_1^0 + p_2^0 q_2^0} \quad (3)$$

Then,

$$\begin{aligned} \frac{\Delta Q_I}{Q_I} &= \frac{p_1^0 \Delta q_1 + p_2^0 \Delta q_2}{p_1^0 q_1^0 + p_2^0 q_2^0} = \frac{R_1 (\Delta q_1 / q_1^0) + R_2 (\Delta q_2 / q_2^0)}{R_1 + R_2} \\ &= s \left(\frac{R_1 (\eta_{11} + \eta_{12}) + R_2 (\eta_{21} + \eta_{22})}{R_1 + R_2} \right) \end{aligned} \quad (4)$$

So the aggregate elasticity denoted η_A is

$$\eta_A = \frac{\Delta Q_I}{Q_I} / s = \frac{R_1 (\eta_{11} + \eta_{12}) + R_2 (\eta_{21} + \eta_{22})}{R_1 + R_2} \quad (5)$$

Notice that if the mark-ups on the products are the same ($=m$), then from (2) simplifying to give:

$$\Delta = (R_1 + R_2)(1 + (m + s)\eta_A) > 0 \quad (6)$$

and since $(R_1 + R_2) > 0$, it follows that the price change is profitable in this case if –

$$(1 + (m + s)\eta_A) > 0 \quad (7)$$

That is, the ‘aggregate demand own price elasticity η_A plays the same role as own price elasticity in the single product test in (1) above. That is, profitability depends on the aggregate own price elasticity (and the common mark-up). When the mark-ups are different, then this formula no longer holds – profitability depends on own price and cross price elasticities and mark-ups.

Note that this result – that if mark-ups are all the same, then the profitability depends on a ‘aggregate own price elasticity of demand’ - generalises to the n -product case.

2.3.3 Key Points In The Submission Made By Dr I Dobbs Are Not Addressed

Ref. 2.94-2.108

75. The attached report by Dr Dobbs discusses a range of aspects of the broadband Market Review proposals. With respect to the specific points which Ofcom makes regarding his original submission in this section, his response is as follows:
- Ofcom provides no evidence for its conjecture that willingness to pay will increase and in any case, this does not directly inform about price sensitivity which is a function of prices.
 - Ofcom provides no evidence that the price discrimination between residential and business users is cost related and in any case there already is geographic based price discrimination from a uniform tariff since supply side marginal costs vary geographically.
 - While there are conceptual difficulties with the HMT and regulators are expected to apply tools which may not be wholly adequate, in Ofcom's reviews even the HMT is not applied correctly on its own terms of reference.
 - Ofcom does not substantiate its initial product groupings and there are multiple errors in both the unmetered and broadband Market Reviews suggesting they have not been co-ordinated.
 - He did not argue that marginal costs should be zero, only that the test is one of short run avoidable costs and not forward looking incremental costs over the long term which is what Ofcom continues to incorrectly adopt (the Ofcom LRIC estimate is likely to be significantly greater than the short run avoidable cost).
 - The Review is wholly inadequate in its linking of the assessments of market boundaries, market power and remedies with no recognition of the implications of the nascent nature of the marketplace and the high level of uncertainty surrounding the market boundary designations.
76. There are a number of other technical issues which Dr Dobbs highlights including Ofcom's treatment of 'income effects' in the SSNIP test which has no precedent in regulatory analysis. These and other issues are considered in more detail below.
77. With respect to Ofcom's argument [2.106] that it would be failing to take (utmost) account of the Commission Recommendation on relevant markets, BT would like to point out that: (a) Ofcom has already defined market segmentations which do not align with the Commission Recommendation such as unmetered and metered Internet access being in separate markets; (b) Ofcom has analysed markets not in the Recommendation at all such as unmetered termination; and (c) Ofcom has flexibility to depart from the Recommendation under both EU and UK law.

2.3.4 Key Points In The Submission Made By Professor Martin Collins Are Not Addressed

Ref. 2.65-2.80, 2.91

78. While clearly Ofcom has taken on board some of the cautionary comments from Professor Collins [2.73], it might appear that Professor Collins had actually endorsed Ofcom using the survey methodology to undertake the HMT and use the results for major policy decisions [2.67, 2.74].
79. This was not the case and for the avoidance of any doubt, Professor Collins sets out an additional Memorandum to Ofcom (attached) in which he states that:
- He categorically **did not say** that 'the Director's surveys are as robust as surveys from any source' [2.67].

- The surveys which Ofcom employed 'should **never be used** as a substitute for knowledge' [2.72].
- The suggestion that the true sampling errors of the Ofcom survey were probably at least half as big as stated 'was **not an assumption** but a **conservative informed guess** and one that many other survey statisticians would make' [2.68].
- ONS and the National Centre for Social Research both use **true probability sampling** for all substantive surveys unlike Ofcom's quota sampling [2.70].
- In relation to using the answers to the hypothetical price increase, Professor Collins states that he '**would certainly not recommend an assumption on the heroic scale of that made by the Director**, even if (or perhaps especially when) it suited my point of view in a public debate' [2.73].

2.3.5 The Surveys Are Not Reliable Guides To Current Or Future Willingness To Pay

Ref. 2.77-2.80

80. BT invited Millward Brown to respond to the comments made by Ofcom in this section and to review generally the robustness of Ofcom's surveys and assumptions about potential consumer behaviour. In the April 2003 Broadband Market Review, Ofcom indicated that more extensive survey work would be undertaken to evaluate the strength of the conclusions being drawn.
81. In this Review, Ofcom rejects the arguments made by Millward Brown on: (a) lack of evidence for added valuation of the benefits of broadband subsequent to uptake [2.78]; (b) concern at the small sample sizes and 'fit for purpose' [2.79]; and (c) use of consumer research on those not currently taking broadband [2.80].
82. The Report by Millward Brown is attached. The key points they make are the following:
- Ofcom is selective in its use of survey information, using it when the results appear to support the argument for separate markets but rejecting it when the results indicate the opposite.
 - The surveys which Ofcom is using to evaluate the SSNIP test have actually been declining in quality, comprehensiveness and robustness over time and not improving. The latest consumer survey is especially weak in that the sample size is extremely small and the question on price responsiveness differed from the two previous surveys with no breakdown of alternative services following the hypothetical price increase.
 - The margins of error on the latest consumer survey - which is pivotal to the market boundaries - are substantial and it is quite likely that the Critical Sales Loss (CSL) is in fact reached.
 - While it is possible to argue that current broadband users value broadband more highly after they have taken the service, it is equally plausible that this has been factored in to their responses to the hypothetical price increase in Ofcom's surveys themselves (the consumers have probably only recently taken the service and do not want to demonstrate an unwise purchasing decision so may be anticipating benefits not yet fully appreciated).
 - Ofcom's rejection of market research and price sensitivity on non broadband users (the double hypothetical argument) is not well founded, as the survey work did not approach the issue in this way.

83. Millward Brown estimated the probability that the minimum CSL may easily be within the true margin of the survey when correct sampling error is taken into account:

Table 2

Relationship Of Sampling Error To The CSL

Probability of 'true' switching intent being $\geq 19\%$ and $\geq 14\%$

Quarter (& base size)	Margin of error assuming SRS *	% saying they'd switch away from broadband **	Probability that 'true' result is $\geq 19\%$		Probability that 'true' result is $\geq 14\%$	
			Given SRS	With double margin of error	Given SRS	With double margin of error
Q12: Mar 2003 (250)	6%	15%	4%	19%	67%	59%
Q13: May 2003 (193)	7%	14%	2%	16%	50%	50%
Q14: Aug 2003 (133)	8%	10%	0%	4%	6%	22%

* At 95% level

** Assuming all don't knows stick with broadband

84. In fact, if anything Millward Brown probably understate the chance that the true CSL is reached for two reasons: (a) In BT's view Ofcom's CSL is too high anyway and a lower threshold of (say) 14% would increase the probability considerably; and (b) they have assumed that all the 'don't knows' would stay on broadband. It is only the last survey where a reasonable CSL would show a low probability of attainment. However, there are particular concerns about this survey as the survey question was ambiguous.

85. BT considers that in conjunction with the comments by Professor Collins, the value of Ofcom's survey work has material limitations and should not be used as a sound basis for any policy decisions.

2.3.6 A Relevant Competitive Price Level Has Not Been Defined

Ref. Annex A Page 155 'Price Trend'

86. BT has commented on the inappropriate treatment of costs and price elasticities in Ofcom's analysis. The former are treated as variable in the long run over 5 years and the latter is a spot estimate which for example excludes the sunk costs of service set-up. There is also a further substantive issue which is whether or not the current price level is at the competitive level or not.

87. This issue is of some significance, and for example, in the recent *BSkyB* decision ([2003] UKCLR 240), the OFT stated that:

'... The cellophane fallacy means that the Director cannot rely on evidence of switching to determine the relevant market, particularly in circumstances where the 'competitive price' cannot be determined'.

88. Ofcom [Annex A, Page 155] comment on recent price trends. Ofcom accepts that the recent price reductions did include 'potential retail pricing pressure from narrowband internet access services. However, as the Director has no evidence to suggest that current retail broadband prices are below cost he considers that the price reductions that occurred in 2002 allowed for movement in the nascent market towards the competitive price level'.

89. If this is the case, it follows therefore that the prices prior to reductions were not at the competitive level. Yet those prices were deemed to be at the competitive level when Ofcom enforced the ATM Direction on BT (market analysis of December 2001) and the consequential regulation including the margin squeeze test. It seems unacceptable therefore that Ofcom should continuously rely on prices being at the competitive level and be able to find narrow markets and SMP under all circumstances. Ofcom is not able to propose a counterfactual to the results of removing its invalid market power assessment (in BT's view) but this could have an impact on current price levels e.g. the DataStream and IPStream prices and the consequential retail prices which Ofcom has used in its surveys.

2.4 BT Has Re-run The Econometric Modelling Including Advertising

Ref. 2.54-2.57

90. Ofcom appears to completely reject the results of this work for the following reasons:

- The econometric modelling does not include the parallel analysis of unmetered and metered narrowband Internet access as 'the Director is concerned with substitution to (and hence the cross price elasticities with) narrowband services not intra-broadband movement' [2.55].
- The analysis does not take account 'for the effects of the massive advertising/awareness campaigns that were simultaneous to the analysed retail ADSL price reductions' [2.56].

91. BT would like to make the following observations to these comments:

- Ofcom is incorrect in emphasising the relevance of cross price elasticities in the context of the HMT for the reasons outlined above. As discussed above, the HMT works on **total** potential losses following a price increase which is represented by the own price elasticity (which is what was estimated in this study) and not the **partial** cross price elasticity.
- The own price elasticity estimates which were found for the UK were highly compatible with the values found in other international studies and Ofcom itself uses international benchmarking in a wide variety of similar circumstances so this source of evidence while not conclusive, is nevertheless supportive.
- Much of the advertising was and remains centred on relative prices and raising general awareness of prices could be expected to make price elasticities greater not smaller. **[text omitted]**
- The level of direct cross-platform switching over this period as a consequence of broadband services was probably relatively small in the overall volume growth as both platforms priced competitively and the majority of broadband consumers migrated up from narrowband services already on that network. There will have been some switching but this will also have been affected by the competition between the cable companies and BSkyB for premium TV.
- The own price elasticity can be interpreted as a switching effect from narrowband services both empirically and from the survey evidence which Ofcom and others have shown, namely the vast majority of broadband adopters migrate up from wholly or partially unmetered narrowband Internet services.
- The extent of advertising after the pricing reductions was not measurably greater than before the price reduction except at the very end of the period itself. Much advertising does not affect the level of demand but merely the timing of demand and again this to an extent will have fallen in the period of estimation.
- The econometric analysis fully reflects both the on-going costs of the service and the set-up costs. The latter is in fact missing from Ofcom's own surveys.

92. BT attaches an additional econometric assessment of demand by Professor John Nankervis which explicitly considers the impact of the advertising campaigns (which from other evidence can also reasonably be expected to mirror awareness). The provisional conclusions are as follows:

- The incorporation of advertising - using conventional approaches in the industry – does not change the results in a material fashion and the price elasticity ends up at the same value (-2.2) as before.
- The advertising elasticity of the order of 0.35 (initial impact falling to 0.1) is an estimate which appears plausible for the service⁹.
- The running cost price elasticity falls slightly from previous estimates (down to about -2.0) as anticipated but is still considerably above the survey own price elasticity which Ofcom has used.

93. BT acknowledges that this work is provisional and that parameter values in such models can vary according to the period of estimation and model specification. However, we consider that it is a legitimate source of supportive evidence in this context which needs to be taken in the broader findings of similar studies.

2.5 BT Believes That Geographic Sub-National Markets Are Needed

2.5.1 National Tariffs Are Not A Good Indicator Of Homogenous Markets

94. Ofcom sets out the case for a national market [2.152] based on perceived national tariffs at both wholesale and retail levels. BT does not accept at the current point in time that there is sufficient evidence to adduce that the market is national and we agree with Telewest on this matter. Manifestly the conditions of competition are not homogenous¹⁰ throughout the UK in that clearly there is a large group of customers who can take either service, some only DSL and a small group only cable¹¹.

95. The questions arise as to whether: (a) the degree of heterogeneity in geographic competition is material; and (b) if in spite of big differences, that there are arguments for over-riding such differences from a chain of substitution which binds these areas together.

96. The Commission Guidelines [62] states:

‘In its Notice on market definition the Commission drew attention to certain cases where the boundaries of the relevant market may be expanded to take into consideration products or geographical areas which, although not directly substitutable, should be included in the market definition because of so-called “chain substitutability”. In essence, chain substitutability occurs where it can be demonstrated that although products A and C are not directly substitutable, product B is a substitute for both product A and product C and therefore products A and C may be in the same product market since their pricing might be constrained by the substitutability of product B. The same reasoning also applies for defining the geographic market. Given the inherent risk of unduly widening the scope of the relevant market, findings of chain substitutability should be adequately substantiated.’

⁹ A review of the relevant literature does not in general support very high elasticities for advertising although the evidence is not conclusive in this respect.

¹⁰ In the sense of the Commission’s Notice On Market Definition.

¹¹ As at January 2004, the approximate position in terms of households, is that 47% have choice of both cable and DSL; 33% have DSL only; 5% have cable only; and 15% have no service.

97. The Commission Guidelines [footnote 50] also states that 'Evidence should show clear price interdependence at the extremes of the chain and the degree of substitutability between the relevant products or geographical areas should be sufficiently strong'. BT maintains that such an analysis has not been done in the Review¹².
98. BT is not persuaded by the example of the Competition Commission [2.153] as it did not actually give particular attention to broadband services but rather was principally concerned with competition between cable and satellite services and the associated impact of the merged entity relative to content providers. The findings were not materially affected by the conclusion on either national or local markets, contrary to the position here. The issue of geographic markets is not even mentioned in the Report's Summary.
99. Ofcom [2.149] maintains that BT is free to set its own structure of tariffs and has freely chosen to set nationally averaged tariffs. Hence it is implicit that BT has accepted that the market is itself national and so the state of competition is adequately characterised as binding the areas together where BT is present by itself, and where it is in direct competition from the cable companies.
100. However, there are a number of factors which affect the pricing decision and BT has implicit as well as explicit constraints on its pricing policies including extremely strong public pressure not to disadvantage outlying areas of high costs. As discussed in the assessment of market power, BT is in no position to make supra-normal profits from the roll-out of its network to the 20% or so of households who live in low density and hence high cost areas of the country. The Commission Recommendation [footnote 30] states that 'It is worth noting that prices which result from price regulation which does not aim at ensuring that prices are cost-based, but rather at ensuring an affordable offer within the context of the provision of universal services, may not be presumed to be set at a competitive level, nor should they serve as a starting point for applying the SSNIP test'. While broadband services do not currently come under universal service obligations, this has not been ruled out by Ofcom¹³.
101. BT would like to emphasise that it is **Ofcom's own regulation** of the key competitive alternative to broadband Internet access – unmetered narrowband Internet access – which is (obligatory) at a nationally uniform price which itself is forcing BT into adopting a parallel pricing structure for broadband services. This applies both at the retail and wholesale levels, in that the alternatives for both consumers (end-users) and customers of wholesale network services have these at nationally averaged prices.
102. While Ofcom assumes that BT has pricing freedom, in practice this is not necessarily exercisable by BT.

¹² Related issues are discussed in some detail in BT's Response to Oftel's Explanatory Statement and Notification on the Retail Leased Lines, Symmetric Broadband Origination and Wholesale Trunk Segments Markets. In particular, BT directs Ofcom's attention to certain annexes to that submission, in particular those addressing the legal basis on which Ofcom is required to take geographical variations in competitive condition into account when defining markets.

¹³ BT notes Ofcom's statement that 'Developments in broadband may call for a reassessment of the scope of any Universal Service Obligation' in its proposed Annual Plan April 2004-March 2005.

[text omitted]

2.5.2 The Conditions Of Competition Differ Significantly

103. There are four points which BT would like to stress at this stage: (a) Ofcom has not looked at the ability of BT to make supra normal profits from its roll-out into areas where cable is not present; (b) BT remains constrained by the provision of other services including narrowband services and ISDN in these areas; (c) BT has come under intense public pressure to roll out its network and this should not serve as a basis of assigning SMP; and (d) it is not certain that over the Review period, prices will remain nationally averaged.

104. Ofcom itself set out the pros and cons of local versus national markets¹⁴:

‘A.48 In summary, a local market definition has a number of associated weaknesses:

- It does not appear to allow for the incorporation of indirect pricing constraints. Nor does it ensure that the relevant market includes all of the services which might act as a competitive constraint.
- Given that prices are set on a national basis by most operators, a market definition of this sort does not reflect the nature of the price setting process.

A.49 A national market definition also has some weaknesses:

- There is no direct competition or substitutability among some of the services contained within it
- The market shares which result from a national market definition do not always reflect the degree of market power of firms in the market.

A.50 The first of these difficulties of a national market definition can be addressed through considering the applicability of the chain of substitutability argument, which allows for a market to include services between which individual customers could not substitute. The second can be addressed through ensuring that other measures of market power, such as profitability, are taken into account alongside market shares in deciding whether or not market power exists. **Ofcom has considered the profitability of cable operators but has not seen evidence that the cable operators are able to make supra-normal profits, i.e. profits higher than they could expect to earn in a competitive market, in the long run without losing market share.**’ (emphasis added)

105. The issue of the supply-side in these different geographic areas is material. Ofcom claims market power around the exploitation of pre-existing sunk costs but in the roll-out to the areas covering the final 20% or so of households, BT must invest in new infrastructure. The capability of BT to acquire a supra-normal profit must be in considerable doubt.

106. Ofcom appears to try to bridge the gap between the hypotheses of local and national markets with a sort of hybrid [2.152] in which ‘local characteristics’ can be assumed to mean some relatively small pockets of competition which however are insufficiently large for a hypothetical monopolist to consider worth monopolising and the competitive price levels would not consequently differ from those in a larger area. However it is not evidentially the case that this is correct (see also note by Dr Dobbs on this point). The high market shares of the non-national operator (cable companies) are at least partly reflective of lower prices including the impact of the triple play opportunities which they alone can market. Their market shares are extremely high and Ofcom may well be understating their market position.

¹⁴ ‘Open Access Consultation of 2000-2001’, Ofcom Statement, April 2001.

107. BT is also of the view that **either** the 'local characteristics' are sufficiently important that they should be regarded as separate economic markets **or** they are not. The regulatory framework does not encompass a middle ground which would take us back to the old regime of 'well established operator' alongside competition law measures of market power. If the areas are separate then ex ante regulation falls away; it is not a case of adapting the remedies based on national markets to 'local situations'.
108. It is therefore quite reasonable to argue in these circumstances that: (a) the quasi-competitive level of prices in the two areas will be different; and (b) the cable companies are still able to exercise market power at those levels¹⁵. In the extreme, BT might end up with a very small market share in the cable franchise areas and while it is reasonable to argue that the potential competitive entry of ADSL limits the ability of cable companies to exploit a position within their franchise areas of market power to a level such as excessive prices, there is no guarantee that it is sufficient to preclude an assessment of dominance where a lower threshold than excessive pricing or profitability is needed.
109. The procedure of taking consecutive assessments of product and then geography is known to understate competitive forces¹⁶. In this particular case, if Ofcom had recognised that different geographic areas had varying underlying costs of supply and assessed each area in turn, it is quite possible that no operator would be found to have market power and these combinations would have been the smallest combinations of products and geography which would have satisfied the requirements of the HMT. If however the presumption is for a national market (which is what Ofcom assumes), then already the localised price-constraining influences are largely lost.
110. In conclusion, it is perfectly possible that if the market analysis had started from the geographical dimension first rather than the product dimension, the resulting delineation of market boundaries would have been different. Put another way, the evidence of national tariffs is a necessary but not sufficient indicator of a national market. Compelling evidence involving relative costs, profitability, and consideration of other constraints will likely imply different set of geographic markets. It does not follow of course that BT (or indeed the cable companies) have SMP in any of these areas, but rather the issue is that it is more appropriate to consider price constraining influences on each area taken in turn.

2.5.3 Market Boundaries Are Not Defined By Remedies

111. Ofcom [4.71] appears to emphasise national markets because it might be 'awkward' for some third parties if certain geographic areas were deemed to be effectively competitive.
112. The Commission Guidelines [paragraph 9] sets out the obligation on NRAs 'To identify the geographical dimension of those product and services markets'. There is absolutely no suggestion that NRAs are supposed to undertake the exercise with one eye on the pre-determined set of remedies following a designation of SMP. If the 'problems' for the third parties are material, they will by definition enter into the assessment of SMP itself. They should form an explicit part of such an evaluation and not used as a post hoc justification for the particular manner in which the initial assessment of market boundaries and SMP are undertaken in the first place.
113. BT can accept that: (a) there is a linkage between market boundaries, market power and remedies in that boundaries and power are essentially the same thing, albeit

¹⁵ The actual determination of the quasi-competitive price level requires an assumption to be made about the nature of competition between cable and copper.

¹⁶ 'Merger in daylight : the economics and politics of European merger control', Damien Neven, Robin Nuttall and Paul Seabright. Centre for Economic Policy Research, 1993.

examined in practice in rather different ways; and (b) remedies should be proportionate to the extent of market power and its relationship to any actual or possible market failure. This however is not how Ofcom appears to be analysing the marketplace.

114. Further, the specific three issues advanced by Ofcom [4.71] against having national markets do not stand up to scrutiny in any case:

- Altnets already do interconnect with both cable companies and BT and this is the normal working of a competitive marketplace.
- There is no impediment for operators to offer a national service if BT is designated as not having SMP in certain geographic areas and a national remedy is not needed on BT to achieve this.
- Cable companies already pass a significant number of businesses (which as discussed below Ofcom does not appear to factor in to the market shares) and if BT acted in an abusive fashion, they would be incentivised to extend their networks. In any case, businesses already have access to alternative regulated products which Ofcom's survey analysis suggests would be suitable substitutes.

115. As discussed below, in absence of an SMP designation in cable areas, BT would have no incentive not to offer services and access to third parties. Ofcom is anticipating the outcome of competitive forces which has no real commercial basis. We also note below that ntl is supplying third parties with wholesale services.

2.6 The Evidence Does Not Support The Hypothesis Of Separate Economic Markets

Ref. 2.113-2.115

116. Ofcom claims that with respect to the survey information, that it 'does not rely on them in reaching his (the Director's) conclusions'. On the contrary, it appears to BT that this is precisely what Ofcom is doing. Ofcom puts forward no evidence that the two characteristics of always-on and simultaneous voice are anything other than peripheral or otherwise replicable by other means. The HMT is not passed for SMEs and there is considerable doubt as to the results of Ofcom's latest consumer survey which clearly is not robust. Neither is the HMT passed if the correct values for marginal costs is used.

117. Ofcom presents no evidence that current consumers will exhibit a greater willingness to pay for broadband in the future, nor have the surveys asked relevant questions to elicit any information on this topic. Whether or not the current surveys already include some anticipation of this by consumers is not known. Ofcom acknowledges, but does not factor in, the critical point about infra-marginal consumers having lower willingness to pay compared with early adopters because of their lower use and generally lower valuation of Internet access as a whole.

118. Much of Ofcom's analysis is based on assertion. The metered narrowband reviews did not include any assessment at all about infra-marginal consumers and comparisons largely limited to an assessment of average utilisations of Internet access and average service price levels. This is known to be a flawed procedure.

119. In the context of appropriate regulation, it might matter comparatively little whether unmetered and metered narrowband Internet access are separate or combined economic markets. In the case of broadband Internet access and appropriate regulation, the ordering of market analysis and market boundaries is highly critical. Yet Ofcom's analysis looking at unmetered narrowband Internet access and broadband Internet access - which both used survey information as the basis of analysis - come to counter-

intuitive conclusions. Interpreted correctly, it is clear that unmetered Internet access is **not** an economic market in its own right (according to the surveys) but according to Ofcom, broadband Internet access **is** an economic market.

120. However, the former has a relatively stable business model with a track record of profitability at all parts of the production chain, having been present in the UK for a number of years using legacy infrastructure. On the other hand, broadband Internet access has involved massive capital expenditure by both BT and others, has no stable business model with no track record of profitability, and yet in spite of this, it is argued that it is an economic market.

121. Putting to one side the whole issue of the economics of the supply side and whether profitability is a necessary condition for an economic market, this section examines the results of the various Ofcom surveys for both SMEs and consumers and for both unmetered Internet access and broadband Internet access. The exact nature of the various surveys has changed over time but the outline results seem to be broadly comparable at a more or less common, albeit on occasion rather high level of (service) aggregation.

122. To put these derived price elasticities and intended switching movements into perspective, the following table (see Dr Dobbs paper attached) shows at what points for a given marginal cost to price ratio, the CSL or critical elasticity (CE) indicates that the service in question can not be regarded as an economic market in its own right. It is assumed that there is a 10% increase(s) in the competitive price (P) and then the relationship between CSL and CE is of the form:

$$\text{Critical sales loss } \text{CSL} = -s / (1 + s - (\text{MC}/P))$$

$$\text{Critical Elasticity } \text{CEL} = -1 / (1 + s - (\text{MC}/P))$$

$$\text{CEL} = \text{CSL} / s$$

Table 3

Benchmark CSL And CE

<i>MC/P Ratio</i>	<i>CSL (%)</i>	<i>Critical Elasticity</i>
0	9.1	0.91
0.1	10.0	1.0
0.2	11.1	1.1
0.3	12.5	1.25
0.4	14.3	1.43
0.5	16.7	1.67
0.6	20.0	2.0
0.7	25.0	2.5
0.8	33.3	3.33

123. The values of CSL and CE are not particularly sensitive up to a value of MC/P of 0.4 and BT would suggest that this is an upper bound for what should be used in the HMT, not a lower bound as proposed by Ofcom. This would indicate that a benchmark of the order of up to about 14% for CSL and a price elasticity of at least -1.4 is needed for the service in question not to constitute an economic market in its own right.

124. BT has summarised the surveys for consumers and SMEs and for unmetered narrowband Internet access and broadband Internet access respectively in Tables 4 and

5. The final two columns show the derived own price elasticity firstly assuming that those answering with 'don't know' no longer continue to take the service and finally spreading the 'don't knows' in proportion to those who expressed an opinion.

125. The surveys on consumers (Table 4) suggest the following:

- The own price elasticity is of the order of -4.0 in both unmetered users surveys with switching out of PSTN to a very wide range of alternatives including some users stopping taking service altogether. The two surveys (Q12 and Q13) give broadly similar results although the range of options open was much wider in the second of these.
- For broadband users, the own price elasticity is of the order of -1.5 (this is in fact the weighted average for the three surveys¹⁷) when the 'don't knows' are spread equi-proportionately across all categories. The final survey on which Ofcom has based its latest market assessment is unusual in having: (a) a lower elasticity; (b) limited alternatives to which consumers were invited to consider; and (c) a very small sample of almost half the first survey¹⁸. Broadband users who would switch, again indicated a very wide range of alternatives that they would chose including for example, metered narrowband.

126. For SMEs, the results (Table 5) are if anything, even more stark indicating even higher responsiveness to price than consumers, contrary to what Ofcom has hypothesised. The parallel key points appear to be:

- The own price elasticity for unmetered users is slightly higher than for consumers of the order of -4.5 , but this is based on a relatively small sample and for one quarter only. Even so, there is a wide range of alternatives that would be taken up from some users going up the bandwidth chain to broadband while others doing the exact opposite to an 'inferior' metered service.
- For broadband users, the own price elasticities vary somewhat between surveys but average out at about -3.1 . The selection of alternatives appears to have varied somewhat between surveys and, for example, it is not straightforward what the 'other' category represents, but again there is at least some evidence for wide variations in the services taken following a price increase.

127. It is against this backdrop that BT cannot accept the findings of Ofcom's Reviews which put all key service categories into separate markets. Even ignoring the realism of the assumptions which Ofcom is making in looking at these surveys at all, they simply do not show what Ofcom claims. For example, in the unmetered Review (see paper by Dr Dobbs), Ofcom takes the CSL at 15% and on the basis of 'only' 14% of consumers switching to a broadband service (Table 4), concludes that unmetered narrowband service is an economic market in its own right. Ofcom claims to find breaks in the bandwidth chain but the survey evidence shows that consumers would switch in all sorts of directions¹⁹.

128. The only way in which Ofcom might be able to argue for separate economic markets, is if an extremely unrealistic ratio is taken for marginal cost to price; for unmetered services it would have to be greater than 0.8. However, this is both incorrect in theory (incorrect

¹⁷ Millward Brown countenance against such a procedure on the grounds that the surveys are not comparable.

¹⁸ See Millward Brown's comments on this survey in particular.

¹⁹ Further, it is not necessary for consumers to switch to immediately contiguous services for a chain of substitution.

use of LRIC) and unsubstantiated in practice where Ofcom has regulated BT at much lower values. It would also completely undermine Ofcom's argument that BT has market power. In the specific case of broadband Internet access, Ofcom uses results from a residential survey which is not consistent with previous results and is subject to high error from its small size (BT speculates that the results may be within the error limits of the two previous surveys.) As noted above, Ofcom applies the HMT incorrectly in the case of SMEs anyway by conducting a multi-service test instead of a single service test.

129. In summary, Ofcom variously conducts a series of single, partial and multi-product tests on Internet access services. There appears to be no consistency within and between Reviews with the only common feature being that individual services are being classified as separate economic markets as a consequence of continuously changing the benchmark of assessment.

Table 4**Ofcom Surveys Into Internet Access On Willingness To Pay: Consumers****Unmetered Users – Impact Of 10% Price Increase % users**

Survey/Base	Continue Use PSTN Unmetered	Switch Broadband mid/high	Switch Metered PSTN	ISDN	Other	Stop	Don't Know	Own Price Elasticity	Own Price Elasticity (exc D. Know)
Feb03 Q12 / 364	56	10	8	-	-	5	21	-4.4	-3.5
May03 Q13 / 308	55	7/7	7	5	2	6	11	-4.5	-4.0

Broadband Users (128kb and above) – Impact Of 10% Price Increase % users

Survey/Base	Continue Use Broadband Same/mid/high	Switch Unmetered Narrowband	Switch Metered Narrowband	Stop	Don't Know	Own Price Elasticity	Own Price Elasticity (exc D.Know)
Feb03 Q12 / 250	80	8	2	5	5	-2.0	-1.6
May03 Q13 / 193	62/11/7	5	4	5	6	-2.0	-1.52
Aug03 Q14 / 133	67/18	10			4	-1.5	-1.2

Table 5**Ofcom Surveys Into Internet Access On Willingness To Pay: SMEs****Unmetered Users – Impact Of 10% Price Increase % users**

Survey/Base	Continue Use PSTN Unmetered	Switch Broadband mid/high	Switch Metered PSTN	Switch ISDN/LL	Other	Stop	Don't Know	Own Price Elasticity	Own Price Elasticity (exc D. Know)
Feb03 Q12 / 113	50	3	14	16		6	13	-5.0	-4.4

Broadband Users (128kb and above) – Impact Of 10% Price Increase % users

Survey/Base	Continue Use Broadband Same/mid/high	Switch Unmetered Narrowband	Switch Metered Narrowband	Switch ISDN/LL	Other	Stop	Don't Know	Own Price Elasticity	Own Price Elasticity (exc D. Know)
Feb03 Q12 / 153	55	8	1	17		8	11	-4.5	-4.0
May03 Q13 / 196	60/11		2	16	7	0	4	-2.1	-2.0
Aug03 Q14 / 244	63		4	18	8		7	-3.7	-3.4

3. WHOLESALE MARKET BOUNDARIES

3.1 Wholesale Services And Proportionate Regulation

Ref. 1.21-1.23, 2.165-2.167

130. Ofcom's approach to defining wholesale market boundaries appears to be more or less unchanged from that in the previous Consultation. The essential elements are:
- An initial analysis of a specific downstream retail market (asymmetric Internet access) from which a (wholesale) set of network demands is derived.
 - A presumption of a linear 'hierarchy of services' [1.21] in which the specific features of BT's own network are taken as the template.
 - The incorporation of specific features of other aspects of BT's portfolio and in particular uniform pricing which Ofcom describes [2.190] as a 'common pricing **constraint** mechanism' (emphasis added).
131. Ofcom [2.166] sets out a case that the analysis is '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'.
132. BT agrees with the principle that the new regulatory framework is technology neutral but does not accept that Ofcom's analysis meets this requirement. Network architectures are not flexible and reflect a whole host of historic anomalies and the fact that decisions taken in the past may now prove to be sub-optimal when looking forward. Hence the distinctions between: (a) physical and logical routing; and (b) historic and forward-looking capital valuations (and the reflection of asset costs in prices) - are extremely important.
133. Ofcom's analysis gives no recognition to either of these factors. For example, Ofcom suggests [2.168-2.179] that a SSNIP test applied directly to DSL services would not be passed. However, there is no discussion at this stage as to what the competitive price level should be.
134. Most importantly, as will be demonstrated below, this approach does not identify where BT has *ex ante* been taking significant investment risks. The consequence is that the topologies of our networks and technologies do not match how entrants would compete with BT at the current point in time.
135. NRAs are obliged to follow the structure set out in the Recommendation which is to look at a series of 'markets' in which it is (generally) assumed that there is a unique parallel between an upstream input feeding into a unique and defined downstream market. Broadband wholesale services not only do not fit in to this framework, they actively cut across this approach and make it unreliable.
136. For example, Ofcom examines [2.120] whether asymmetric and symmetric services are in the same economic market at the **retail** level and solely within the context of retail Internet access. Ofcom finds retail asymmetric Internet access to be in a different economic market to symmetric Internet access on the basis of relative costs and consumer evidence and then assumes the **upstream markets** are separated without further analysis. Indeed this possibility is effectively dismissed [2.131] as 'not relevant to this market review'.

137. However, BT understands that this Market Review is about the ‘Wholesale Broadband Access Market’ and not exclusively its relationship to retail Internet access²⁰. As we discuss below, the characteristics of the wholesale markets do not derive directly from retail markets and a fresh assessment is required.

138. The issue of proportionality in regulation is important here. While disputing much of the detail, BT has not challenged significant areas of regulation at the wholesale level in many of the other Market Reviews. **However, our attitude to broadband wholesale regulation is contingent on the regulation (Remedies) that is in place. The issue is whether there is compelling evidence that, given this level of wholesale and retail regulation, it is justified or proportionate for additional regulation to be imposed on wholesale broadband services.**

139. In our view this has not been demonstrated by Ofcom. BT therefore has major difficulties with Ofcom’s paradigm for wholesale market analysis and this part of our response will suggest that:

- The analysis bounds the wholesale ‘markets’ to one specific retail market when in practice there are several downstream services and markets which are relevant.
- The existing price constraining influence of these services plays a critical role in the assessment of market power for wholesale broadband services which emanates from **Ofcom’s own regulation** and not from an implied self-imposed constraint of BT’s (text above).
- The framework is not useful in that it cannot properly examine the question as to whether different wholesale services (such as BT’s DataStream and IPStream) are in the same economic market or not.
- Similarly, the framework presupposes the existence of a ‘conveyance’ market without any supporting analysis.
- The essentially highly geographic nature of wholesale access networks is completely lost as the order of analysis does not deal with the interaction of products and geography but rather takes these dimensions sequentially. As in the analysis of retail markets, key price constraining influences are lost.

140. The Ofcom framework is therefore **not** forward looking, as required under the Commission Recommendation [2.4], but rather it is artificially creating markets which have little or no underlying economic rationale. In conjunction with the proposed Remedies, BT is faced with a number of highly unpalatable options should Ofcom decide to proceed as the Consultation indicates.

141. It is BT’s view that this is not appropriate regulation as most critically, neither market boundaries nor market power are being correctly analysed at the network level. These points remain even if BT accepted (which we do not) that the mapping of downstream broadband Internet access to wholesale broadband access was adequate in its own right.

3.2 The Sources Of Competitive Constraints

Ref. 2.168-2.179

3.2.1 The Overall Framework

142. BT set out in Annex III to our July 2003 response, a framework by which products which are not directly competitive with upstream wholesale products can still be price

²⁰ Ofcom [2.133] notes a certain ambiguity in the Commission’s Recommendation in this context.

constraining on them through competition at either or both of the wholesale and retail levels, including any price constraints which have been imposed on BT by Ofcom.

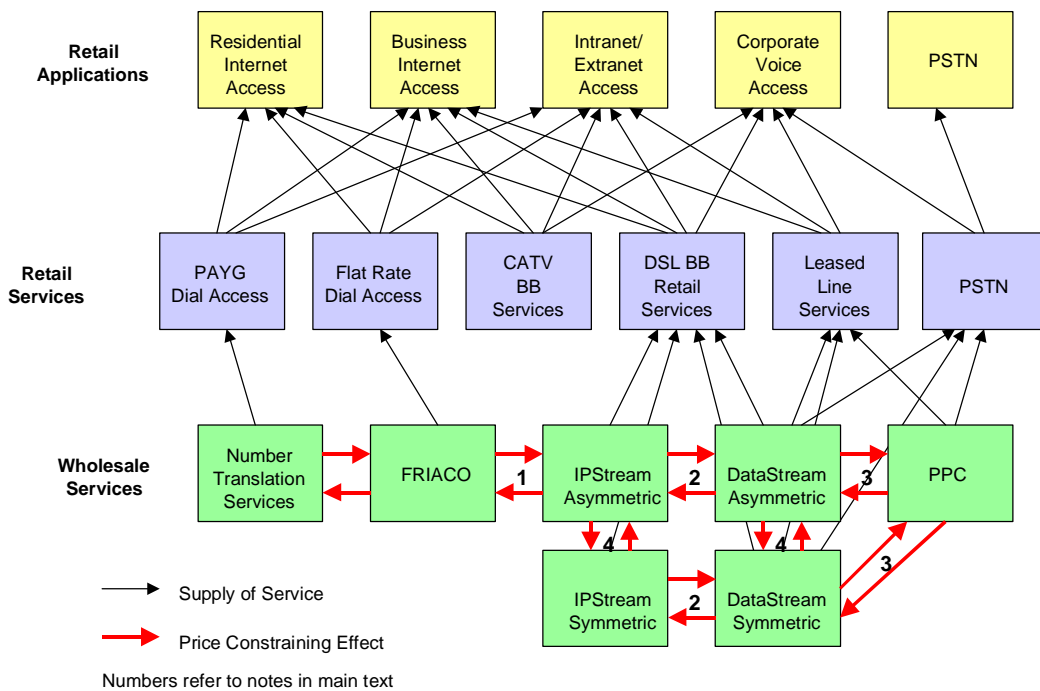
143. As discussed above, we believe that this is the same essential methodology adopted by Telewest and their expert advisors; BT and Telewest independently came to very similar conclusions on this matter. As will be discussed below, BT does not agree with Ofcom [2.190] that simply relying on the notion of a (self imposed) national pricing constraint can justify looking at the range of price-constraining influences on BT (and others). As noted above in the retail market boundaries, BT does not have commercial freedom in the way Ofcom supposes, as the competitive alternatives have been regulated at average prices.

144. In the discussion below, we examine the sources of price constraint on BT's wholesale broadband services. In common with Ofcom, we examine the price constraint arising from the existence of CATV retail Internet access service. Next, we note that because CATV service is based on a different technology from BT's service, this allows a different set of retail service packaging which modifies this price constraining effect. Finally, we examine the effects of demand side substitution at the wholesale level. Here we find that wholesale broadband services are used for more than retail Internet access and notably, they are used for corporate Intranet access. In turn, this business application leads to a chain of substitution which suggests that BT's wholesale broadband services are economically linked not just with CATV services, but also with dial access, SDSL based services, and leased lines.

145. This chain of substitution is illustrated in Figure 3 below.

Figure 3

Wholesale Chains Of Substitution



146. Figure 3 also shows some key supply relationships between wholesale services, retail services, and retail applications. It then shows some of the price constraining relationships between the wholesale services represented by red arrows.

147. This diagram only shows dsl and cable modem based services; the introduction of services based on other technologies such as satellite, 3G and fixed wireless, e.g. wi-fi, would augment the set of price constraining relationships to be even greater than those shown.

148. The diagram highlights some of the more relevant price constraining relationships. These are as follows (the numbers parallel those in the diagram):

- 1. BT's retail market analysis showed that flat rate Internet dial access retail services price constrains retail broadband Internet access services. This price constraint at the retail level price constrains the respective wholesale input services, that is FRIACO prices constrains IPStream. BT is not certain that, at this stage of market development, a price constraint is in operation the other way but this may develop as broadband services mature over time.
- 2. DataStream provides an alternative offer in terms of risk aggregation and functionality to IPStream. For larger ISPs with higher volumes, the two are directly substitutable. BT now has orders from larger ISPs - or from third parties on behalf of larger ISPs - for DataStream, given that their end-user volumes have grown. The larger ISPs are clearly sufficiently infra-marginal to economically link IPStream and DataStream.
- 3. DataStream is sold in two parts, the end user data path (EUDP) and the VP. The third party customer can select the concentration of EUDP capacity in the VP capacity. For Internet access, a significant level of concentration is appropriate. However, it is equally possible to match the capacity of a single EUDP with the capacity of the VP. In this configuration, the DataStream EUDP/VP combination functionally behaves in a very similar way to a PPC. BT already has a significant number of orders for asymmetric DataStream in this configuration. BT sees this as clear evidence that there are already - and over the period of Review will increasingly be - sufficient infra-marginal customers to link these markets in both directions²¹. The launch of symmetric services will only serve to strengthen this linkage.
- 4. The relationships between symmetric and asymmetric IPStream and DataStream services is discussed in more detail in the analysis of packaging of retail services based on common upstream input components. It is this ability to package, particularly for access to corporate voice and data networks, which BT sees as economically linking the symmetric and asymmetric service.

3.2.2 Effects of Competition In Related Downstream Markets

Ref. 2.120-2.134

149. Ofcom present the case for why Internet access service from CATV companies is price constraining on BT's DSL based wholesale broadband access services. BT agrees with the basic principles of the price constraining effects of a parallel chain of inputs on an

²¹ BT notes that Ofcom assumes the development of a chain of substitution between business and residential Internet access retail services. Details of uptake of DataStream by competitors is contained in the Confidential Annex.

upstream market, even where there is no direct supply to, or demand from, the upstream product under consideration.

150. At the time of writing of our response to the April 2003 consultation, the CATV companies neither purchased BT's wholesale broadband access service for their own retail offering, nor did they supply a wholesale product to third party retailers. However, even without this direct supply, BT's wholesale broadband products are price constrained by CATV services as described by Ofcom [2.168 to 2.179]. Some further examples are described below.

151. It appears to BT that the reason Ofcom has only included this one example, is that it has already (incorrectly) defined the upstream markets to be constrained to the supply of Internet access only, as noted above. This is why Ofcom [2.195] 'does not understand' how this affect is related to PSTN services. In passing, it is noted above (section on retail market boundaries) that at various points Ofcom does accept that ISDN and leased lines **are** 'broadband services'.

152. When a number of separate retail offers share an important common network input, there is often the opportunity to:

- Create discounted packages of retail offers based on the service incremental marginal costs.
- Demand side switch at the wholesale level and/or supply side switch at the downstream level from the use of the common input to move between supplying one retail service to another.

153. The first of these, the ability to create bundles of packages at the retail level, is already a clear reality in the markets under consideration in the Market Reviews:

- CATV companies offer substantial discounts for dual and triple play retail packages involving PSTN service, premium TV service, and Internet access service.
- BT's wholesale broadband access services are contingent on the end-user having a BT PSTN line and Ofcom has already determined that the wholesale broadband access service is offered on the basis of the pure marginal cost on the PSTN service.

154. In other words, commercial behaviour and regulation are economically linking together a series of downstream services. These linkages inevitably have the impact of binding together the quasi-competitive prices of Internet access of broadband and narrowband services with PSTN and cable TV. They form another competitive constraint which BT faces in the pricing of its own wholesale broadband services. This explicit CATV packaging and implicit DSL/BT PSTN packaging are not included in Ofcom's analysis of either retail or wholesale markets.

155. A further effect of this packaging is to link symmetric and asymmetric applications. Voice telephony is a symmetric application and Internet access is normally an asymmetric application. However, they are normally purchased at the retail level as a package (obligatory over BT's network).

156. Ofcom [2.123-2.124] argues that ADSL and SDSL based Internet access have different input costs as the former is based on line sharing while the latter is based on full LLU. BT's clearly sees that the **package** of baseband PSTN and ADSL based Internet access is substitutable with a **package** of a derived voice service and Internet access based on SDSL. Ofcom appears to acknowledge this point [2.128] but then dismiss it as it is deemed that derived voice service, as a substitute for PSTN voice calls, will not be relevant in the time period of the market review.

157. BT does not believe that this argument is valid in that timescales for different applications may vary, but still have price constraining influences in the period of review. Notably, Ofcom does not discuss access to corporate private networks where combined voice and data is a well established form of networking.
158. The second factor, the switching of wholesale inputs from one retail service to another, may appear to be less in immediate evidence today. However, as discussed above, there are already some examples, and it seems clear that many more will emerge within the lifespan of current broadband investment business cases and the period of the Market Review itself²².
159. Ofcom dismisses this issue [2.193] on the basis that 'he (the Director) considers internet access to be by far the most important retail services to this review and it is into this that the vast majority of wholesale broadband inputs flow'. When developing the model of upstream markets, Ofcom goes further [1.22] 'The services covered in this Market Review are the underlying services used to provide broadband internet access service to service providers (referred to as intermediate services) and ultimately to consumers'.
160. In Annex III of BT's July 2003 response, we set out in some technical detail how 'bitstream access' services can be used for a variety of purposes. Ofcom argues [2.192] that 'the Director considers that he has taken full account of the technical nature of wholesale broadband services and to what extent vertical and horizontal services compete with each other as well as fully considering the situation in the relevant downstream markets into which these, and other potentially competing wholesale services feed'.
161. Ofcom looks at the potential for supply-side switching where operators have control of certain forms of network infrastructure and will dedicate them to a specific downstream service. This is found to be very difficult where narrowband and broadband Internet access is concerned as the two sorts of supporting networks cannot be easily adapted. However, Ofcom does not appear to have given serious consideration to the possibility that third parties can buy BT's broadband services and use them for different downstream applications. This might be described as a form of demand-side switching at the wholesale level.
162. Therefore BT does not agree with Ofcom's approach believing the upstream market is being defined too narrowly as a consequence:
- An operator using LLU can configure their DSLAM to a wide range of ADSL and SDSL services which are particularly suitable to the SME market within the exchanges areas covered by their deployment.
 - CATV companies can, and do, offer a wide range of service packages based on the capabilities of their infrastructure. Notably, the latest DOCSIS standards²³ support symmetric as well as asymmetric services which would allow CATV companies to offer a wide range of service packages to both residential, and in particular, business markets contrary to Ofcom's assumption [2.122].
 - Altnets, service providers and retail customers buying BT's wholesale broadband access services can, within the bounds of the bandwidth envelop, re-use the services for applications other than Internet access.

²² In general, Ofcom appear not to have considered that xDSL technology can support a package of applications some of which are symmetric and some of which are asymmetric. It is only the total capacity envelope of the copper loop that is constrained by the xDSL type and bandwidth. Efficiencies of backhaul and core capacity as discussed by Ofcom [2.130] apply to the individual applications not the envelope.

²³ <http://www.cablelabs.com/>

163. The most significant current examples of retail applications which are not Internet access are Intranet and Extranet access. Corporations already buy BT's wholesale broadband service to access corporate Intranets (including BT itself for its own staff). This is clearly a business retail service and not a residential one (even working from home) since it is a business that pays for the service.
164. This application of BT's wholesale broadband access services to access business Intranets and Extranets sits in between the main application of BT's wholesale broadband services for residential and business Internet access, and other means for accessing business Intranets and Extranets, for example using SDSL based services and leased lines. In addition, both Internet access and Intranet/Extranet access can also be acquired using dial access. This leads to the linking of these services and markets in a form of chain of substitution illustrated in Figure 3 above.
165. The ability of third parties to demand side switch at the wholesale level means that third parties can also package applications together and deliver them across wholesale broadband access. For the business market, the most obvious applications to include in this package are Internal voice network access and Intranet access.
166. This ability to package also means that there is a major decoupling between the symmetry/asymmetry of any application and the symmetry/asymmetry of the raw last mile bit-pipe. This decoupling has the effect of binding ADSL based services, SDSL based services, leased lines, and dial-access services closer into a single economic market as they as can each support the same basic set of applications and it is only the proportions of the mix that distinguishes them. Any significant price differences would lead third parties to use different wholesale access services, or a mix of wholesale access services.

3.2.3 Conclusions On The Direct And Indirect Sources Of Pricing Constraints

167. Ofcom, anticipates [2.140] that there will be a chain of substitution developing over the period of the Review between residential and business markets at the retail level, but assume an implicit separation of residential and business markets at the wholesale level from the separation of symmetric and asymmetric services. This follows from tautologically defining asymmetric and symmetric access as separate markets, despite the very obvious ability for LLU operators, CATV operators, and even Altnets, buying BT wholesale service to supply-side substitute.
168. It seems clear to BT that there is a very obvious linking of the wholesale supply of these services to the retail business market between asymmetric broadband services, symmetric broadband services, and PPC/leased lines (and indeed with dial access services).
169. Whether or not symmetric access services are a supply side (or even demand side) substitute for retail Internet access does not address the question of whether the two are substitutes for each other in a different market, notably Intranet access, and that a price constraining affect arises out of this.
170. The narrow manner of the market assessment means that Ofcom's Remedies do not align with the market boundary assessment. At Annex F (New ATM Direction) Annex 2 (Added Functionality) BT is required to offer broadband access service with service categories directly associated with leased line and real time applications.
171. Ofcom's justification [4.222] is hard to understand; ATM CBR class of services is **designed** to emulate leased lines and ATM VBR-rt is **designed** to support voice and video. The suggestion that BT's wholesale customers use them 'primarily (to) allow for

the creation of innovative and differentiated broadband internet access retail services' rather than to create alternatives to current leased line and voice services, BT considers to be untenable.

172. In summary, our position is that Ofcom can either:

- Limit its position that the primary application is Internet access - and that this is the downstream 'market failure' as identified in the Commission Recommendation justifying upstream regulation - in which case there is no possible basis for mandating CBR and VBR-rt classes of service and unbounded and undefined access obligations under Condition EA7 (see Section 5 below); or
- Acknowledge that there is a wider set of retail applications for wholesale broadband services and analyse the relevant wholesale market boundaries, assessment of SMP, and proportionate regulation in this framework, taking full account of the contingent regulation which is being proposed in other upstream and downstream markets.

173. BT maintains that to adopt both positions simultaneously is inconsistent and that co-ordination across Reviews [2.192] has not been demonstrated. BT considers that given that: (a) dial access and leased line services are already regulated; and (b) many geographic locations are fully competitive - there are sufficient price constraints on BT's wholesale broadband access services such that further regulation is not justified.

3.3 The Nature Of Wholesale Broadband Services

3.3.1 Outline Framework

174. BT has major concerns with the way in which Ofcom has set about defining the very nature of wholesale services as a sequential hierarchy and implicitly on a national basis. In this section we discuss in some detail the precise demand and supply side characteristics of these services, and on how entrants can replicate BT's services using different inputs which are either regulated or fully competitively supplied.

175. Ofcom has defined an 'intermediate services' market around specific services in BT's portfolio such as IPStream and BT Central. We do not think this separation of wholesale bitstream services and 'intermediate services' is valid and nor does it appear in any Commission reasoning as far as BT is aware.

176. A further theme which will be developed is that the distinction between broadband 'access' and 'conveyance' is not a meaningful one and if regulation is to be applied at all in this area, it would be more appropriate for the economic analysis to centre specifically on the presence or absence of barriers to entry i.e. to move to the assessment of SMP, rather than to attempt to define narrow and imprecise market boundaries.

177. Finally, geographic features of wholesale broadband services are very important and probably even more so than at the retail level because physical infrastructure costs associated with access are by definition completely location-specific.

3.3.2 Demand Side Characteristics

178. The following service features impact on the costs to the downstream customer and will be reflected in the tariff structure of the supplier:

- Interface aggregation (consolidation). There is a significant cost in supporting a physical interface (irrespective of the protocol) and a few high capacity interfaces are much lower cost to the downstream customer than many lower capacity interfaces.

- Geographic aggregation (consolidation). In general, the fewer geographic locations where the interfaces appear, the lower the cost. Moreover, some locations in the country have lower cost for the downstream customer than others.
- Usage aggregation (concentration). The benefits of concentration can reduce the total amount of capacity needed and lower the requirements for higher layer functionality e.g. reduced costs of BRAS equipment from ATM concentration in the DSLAM.
- Forecast risk aggregation. The downstream customer may under some circumstances find entry easier if they can purchase wholesale services on a simple 'per end user' basis. Underlying risk associated with the number and/or location of end users is absorbed by the wholesale service provider and this too will be reflected in price levels.
- Aggregate interface protocol. This can affect both the range of applications which can be supported by the service as well as the cost for the downstream customer. For example, ATM interfaces on routers are significantly more expensive than Ethernet interfaces, while Packet on SDH (PoS) interfaces tends to be between these two.
- Termination and aggregation of access protocol. There is a cost associated with terminating protocols associated with broadband Internet access, such as ATM and PPP, and if these are terminated by the service, then the downstream customer can have a lower operational cost.

179. The choice for the downstream customer is to outsource or self-supply some or all of these features. The way a wholesale service offers these features, and the way they are priced, will be evaluated against the alternative of internal sourcing.

180. BT's experience is that it is the aggregation features which are of most importance to downstream customers. The margins associated with ISP retailing are tight and there is a strong economic incentive to minimise not just absolute costs but also risks²⁴. In addition, in its various forms, aggregation also seems to be a primary factor for corporate access.

181. Table 6 below shows how these demand side attributes map to the features of BT's current wholesale broadband and related portfolio. IPStream and DataStream each package together a number of features and the use of 'IP' and 'Data' does not mean that the only - or even primary - difference between the two is use of ATM and the use of IP protocols²⁵. IPStream has an aggregated, per end user charge with interface and geographic aggregation, and in the initial uncertain stages of broadband rollout, a service with these characteristics was not only attractive in its own right it was essential to facilitate demand. DataStream Service B offers Interface aggregation and geographic aggregation but not risk aggregation. DataStream Service A offers none of these

²⁴ In fact the difference between tariff structures on PAYG and up-front charges can be explained by options benefits and the ability to defer sunk investments.

²⁵ BT analysed the technical nature of IPStream and DataStream in Annex III in our response in July 2003, and the analysis is not reproduced here. However, we note that IPStream (in its normal form with IP Central) is actually transparent to the IP protocol but does relay the PPP protocol. DataStream is transparent to both IP and PPP.

aggregations. The ease of demand side switching between these services is discussed below.

Table 6**Capabilities Of BT's Wholesale Broadband And Related Product Portfolio**

	DataStream A	DataStream B	Planned enhancements to DataStream	Possible enhancements to DataStream	IPStream	Planned enhancements to IPStream	Possible enhancements to IPStream	LLU and Line Sharing	PPC
Interface aggregation	Limited	Yes	-	-	Yes	-	-	No	Yes
Geographic aggregation	Limited	Yes	-	-	Yes	-	-	No	Yes
Usage Aggregation	Yes*	Yes*	Multiple Classes of Service	Wide variety	Unpoliced Best Effort Only	Capacity charging	Multiple Classes of Service	No	No
Forecast Risk Aggregation	Limited	Limited		Full range possible	Yes	-	-	No	Yes
Aggregate Interface Protocol	ATM	ATM	-	Full range possible	L2TP	-	Full range possible	Analogue frequency band	PDH/SDH payload
Termination of Access Protocol	No	No	No	Full range possible	Yes	-	-	No	No
Outsourcing of functionality	No	No	No	Full range possible	Limited	-	Full range possible	No	No

* Customer has control of usage aggregation as they set the multiplex level between EUDPs and the VP.

3.3.3 Supply Side Characteristics And Geography

Ref. 2.207-2.221

182. Supply elements associated with intermediate broadband services based on DSL include:

- 'Last mile' duct way.
- 'Backhaul' duct way.
- 'Core' duct way.
- 'Last mile' copper cables, cabinets, frames and joints.
- 'Backhaul' fibre cables, frames, and joints.
- 'Core' fibre cables, frames, and joints.
- DSLAM equipment and accommodation.
- Possible backhaul transmission equipment.
- Core transmission equipment (depending on service).
- ATM core network equipment (depending on architecture and service).
- BRAS equipment (depending on service).
- IP core network equipment (depending on service).
- Operational systems and processes.
- Design and Development.

183. Unlike the retailing specific supply elements, many of these costs elements do have a strong geographic element to them affecting the ratio of fixed costs to marginal costs of supply. The physical cost elements in particular have strong variations across the country:

- The costs of last mile duct and copper varies greatly depending of the density of customer premises²⁶.
- The distinction between 'backhaul' and 'core' is not exogenous and is not purely a result of BT network design. It arises from analysing customer densities at a larger scale, i.e. at the scale of towns and cities rather than individual customer sites.

184. In general terms, the costs of the physical network which interconnects local exchanges is strongly geographic, depending on customer site densities at the scale of towns and cities.

185. While the costs of BT's last mile physical network is highly geographic, the price at which it is charged is not. This arises from **existing regulation** and is not a reflection of the underlying economics:

- Basic PSTN service²⁷ is covered by a Universal Service Obligation and it is the specific USO obligation on BT which enforces a uniform national tariff for the basic PSTN service.
- Third party access to these copper pairs is mandated by Ofcom under local loop unbundling (LLU) and line sharing (LS) obligations, and these are at regulated nationally uniform prices.
- The PSTN, with its regulated nationally average price, is the basis of narrowband Internet access, and therefore, as a direct result of the regulation of PSTN origination, narrowband Internet access has a single national price. This regulated nationally averaged narrowband service is price constraining on the broadband service both in the level of the price **and in its structure**.

²⁶ The local average cost per served customer site is, roughly, inversely proportional to the square root of the density of customer sites served in the locality.

²⁷ In formal terms 'access to the network' in the sense of the Universal Service Directive. In practice the geographic component of access is reflected in line rental.

186. Ofcom has effectively removed this key geographic aspect of costs from its analysis which underpins the assessment of the underlying competitive price level by presuming on the existing regulation. This is counter to Ofcom's own stated approach [2.16] which is to analyse the markets assuming regulation does not exist. To do otherwise, in Ofcom's own words 'would be a circular and incorrect approach to market definition'.
187. On the other hand, access infrastructure-based competitors (CATV, LLU operators and other cable/fibre operators) see only the geographic nature of costs and their entry profitability relative to the average prices imposed on BT. The effect of the regulated averaging of BT prices, along with the strongly geographic costs for competition, is to **accentuate** the geographic nature of competition, and hence the geographic nature of the markets. Competitors can profitably build in those areas of above average density i.e. the major cities as BT's averaged prices are well above the local build costs. However, competitors cannot profitably build in areas of low average density as BT has averaged prices below the local build costs (see report by Dr Dobbs on this issue).
188. In contrast to these fixed physical features which are geography and customer-location specific, the electronic equipment cost elements in the supply chain are driven by the non-geographic aggregation factors, as well as the protocol functionality factors. Consequently, the way in which the equipment is connected together and where equipment is placed geographically, is reasonably flexible. In practice, the location of equipment and the way it is interconnected is largely driven by the aggregation demand factors which means that there is no simple distinction between 'origination' and 'conveyance' (see below). The distinction between 'origination' and 'conveyance' is endogenous to underlying network design and different players will not conform to a single architecture.
189. On the general issue of geographic markets and competition, BT refers Ofcom to the detailed submission presented by BT in July 2003 on supply-side factors and the scope of alternative access and core networks in the UK. In 1998, Oftel stated²⁸ that:
- '.. the continued roll-out of the different types of networks (e.g. cable and fixed radio access networks) are likely to provide important competitive interactions. This also means that as the roll-out of competing networks progresses, the geographical scope of markets would tend to increase over time.'
190. On this basis it is difficult for BT to appreciate why national markets continue to persist in each and every Market Review which Ofcom has conducted.

3.3.4 Forward-Looking Costs And Wholesale Services

191. Ofcom acknowledge [2.194] that BT could site and interconnect its equipment associated with the wholesale broadband services in different ways, but goes on to say [1.21-1.23] that it is valid to maintain the implicit chain of inputs [1.21 to 1.23] as 'for the timescale of this review, he (the Director) considers that the vertical chain of network inputs he outlines in this consultation is likely to remain in practice for the vast majority of DSL broadband wholesale services are configured'.
192. BT considers that this approach is not appropriate for the following two reasons.
193. Firstly, a forwarding looking analysis as required by the regulatory framework [1.20] should really be based on modern equivalent assets (MEA) and not on BT's historical

²⁸ Effective competition review, Statement Oftel, February 1998 paragraph 4.42.

assets²⁹. Ofcom is not using the logical linking of components to define a service but a physical sub-optimal relationship. This issue is important when considering the relationship between DataStream and IPStream services.

194. This contrasts with the position that Ofcom took when examining the wholesale Partial Private Circuit (PPC) product. Here, the route each PPC takes across BT's network may not be optimal for that particular circuit, but regardless of the actual routing, Ofcom have chosen to assign a logical routing of each PPC.

195. Further, as noted in Section 2, Ofcom explicitly used LRIC in its assessment of market boundaries at the retail level for broadband services i.e. a measure of forward looking costs in the application of the SSNIP test. BT considers that there is a clear difference in methodology being applied between the retail and wholesale market boundary assessments.

196. The following text, for example, from the IRG³⁰ stresses this point:

'In applying LRIC cost modelling forward-looking costs are the appropriate cost base. Where the regulatory objective is to mimic the workings of a competitive market these forward looking costs should reflect resource costs. In a competitive environment operators may not be able to set the price for every product in order to fully recover its incurred or historic cost, since they have to respond to market prices, which can often lie well below historic costs. They cannot therefore work according to historic cost since reversing investments is, for the main part, either not possible or only possible at a loss. An operator should therefore only be able to recover costs necessary for maintaining future real-asset values in a competitive market. This implies that the basis for asset valuation is the replacement cost of an asset as derived from the application of current cost accounting (CCA) methodologies.

In practice, the concept of forward-looking costs requires that assets are valued using the cost of replacement with the modern equivalent asset (MEA). The MEA is the lowest cost asset, providing at least equivalent functionality and output as the asset being valued. **The MEA will generally incorporate the latest available and proven technology, and will therefore be the asset that a new entrant might be expected to employ.**' (emphasis added)

197. BT acknowledges that the assessments of LRIC, market boundaries and market power are complex and that the implicit or explicit timescales used when examining these may differ, along with the underlying contingent assumptions being made. Our point however, is that Ofcom has already presupposed a particular form of network architecture ('hierarchy of services') prior to such economic assessment itself and that in any framework of assessment be it dealing with: (a) market boundaries; (b) market power and entry; and (c) product pricing, this assumption may not be valid.

198. In the context of competitive entry, a particular point which we wish to stress is that the tendering procedure with ISPs and Altnets imposes an immediate price-constraining influence on BT prior to the actual physical entry of third parties in the production chain. This is especially important for broadband services from the growing number of end-users.

²⁹ Even BT current investment plans are not indicative of MEA as BT's investments are constrained by its existing network architecture. True MEA is based on a 'fresh start'.

³⁰ 'Principles of implementation and best practice regarding FL-LRIC cost modelling', 24 November 2000.

199. Secondly, the chain of inputs is specific to DSL-based services and a service using another technology (such as cable modem) has a notably different network architecture, and hence chain of network inputs.

200. As with the analysis of competing chains of production, Ofcom cannot logically sustain both of the following positions and in BT's view, Ofcom can either:

- Seek to justify a set of technology specific upstream markets, for example based exclusively on Cu pair, DSLAM, and ATM technologies and show that these markets are not price constrained by other alternative technologies such as cable modem; or
- Assume a broader technological base and set of network architectures which are price-constraining on each other, in which case it is not possible to define a clear chain of network inputs.

201. BT does not agree or accept there is a unique set of network inputs which can be used to define a set of upstream markets in a hierarchy in the manner Ofcom proposes. BT's analysis clearly places IPStream and DataStream in the same upstream economic market. There is no separate 'intermediate services' market. Experience in the marketplace bears out this conclusion and by separate cover, BT will provide Ofcom with evidence to show the high degree of substitutability between the two sets of services.

202. BT's position can be summarised as follows.

(i) IPStream And DataStream Are 'Parallel' Products

203. IPStream is not simply incremental on DataStream, as an MEA build for either service would place similar equipment in similar places (see Figure 4) and it is not possible to identify simple additional items which constitute 'the margin'. DataStream can be supplied directly across linked ATM networks (upper section of Figure 4).

204. But the same is true for IPStream. For example, given the current generation of BRAS equipment, it is economic to directly terminate DSLAMs on BRAS in the higher density nodes (middle section of Figure 4). In addition, BT incurred a very significant 'cost of learning' in developing the IP functionality underpinning the IPStream suite of services. This is but one example of Second Mover Advantage where the high development costs would now be significantly lower for an entrant.

(ii) Different Network Architectures Precludes Definitive Market Boundaries

205. As illustrated in Figure 4 (lower section), CATV data architecture does not use ATM in the access and has all the access IP functionality in the head end. The onward network from the head end is therefore an IP backbone. This is a completely different architecture to that based on DSL.

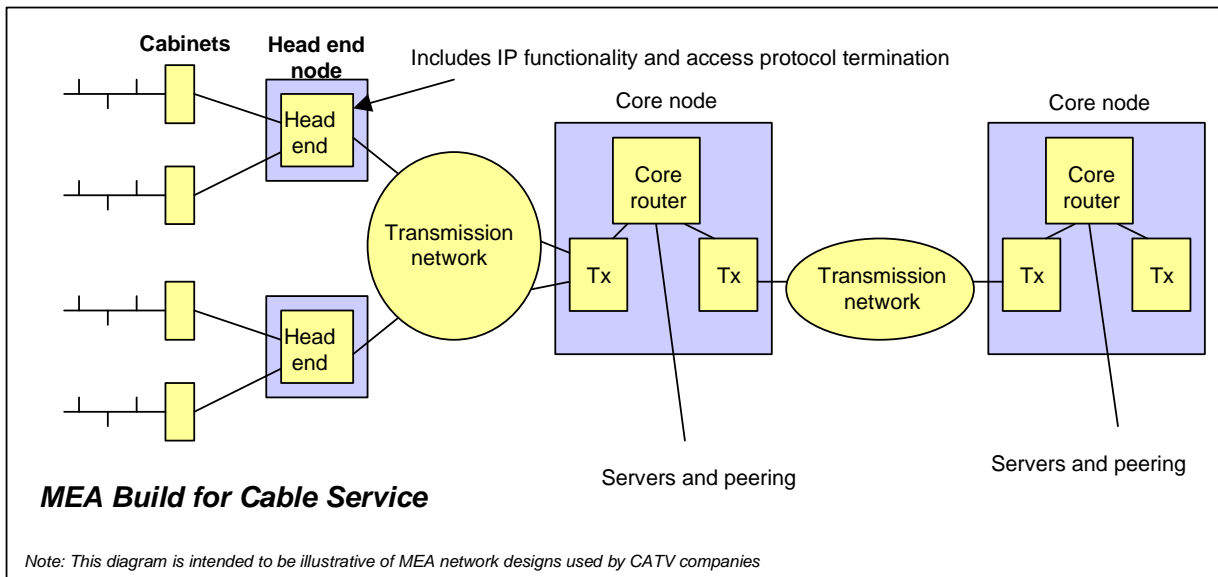
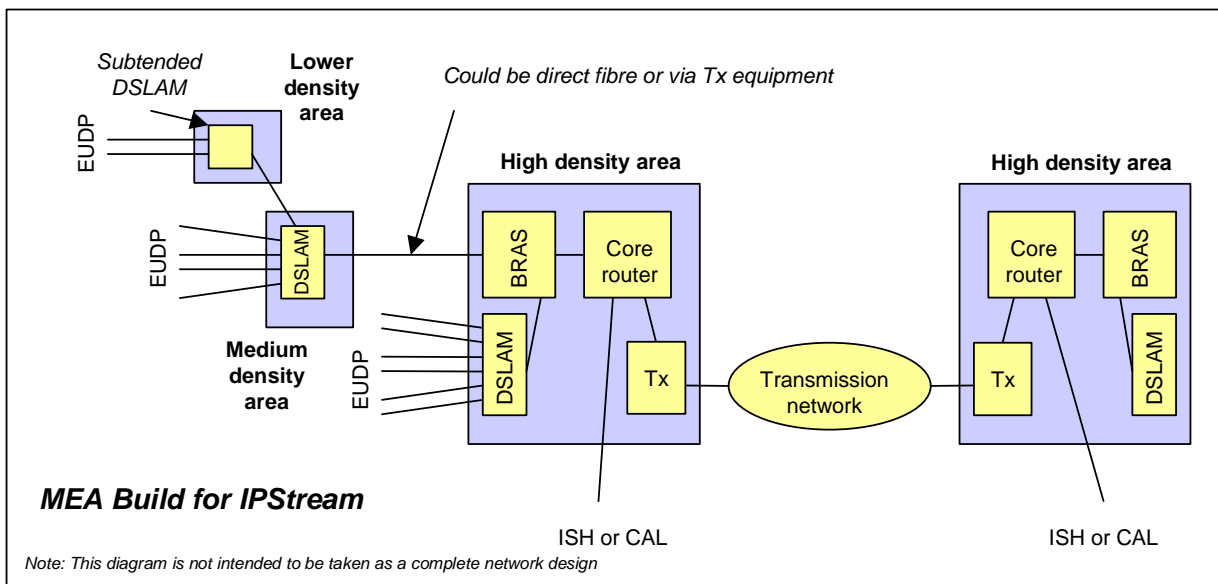
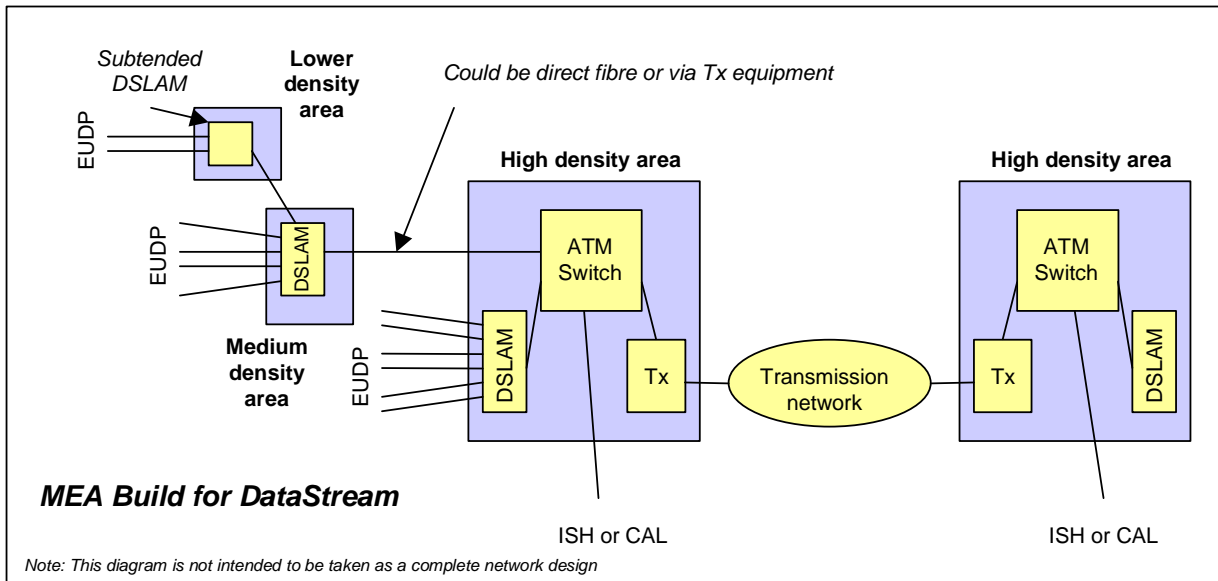
206. It is not possible to identify exactly equivalent services associated with DataStream Service A, DataStream Service B (i.e. Service A plus conveyance), and IPStream (i.e. DataStream service B plus IP functionality) when examining the CATV network architecture.

(iii) Option Effects Are Important

207. There is considerable cost of risk associated with forecasting the volumes of both IPStream and DataStream and this uncertainty has driven network design decisions. In BT's view the embedded options benefits of network design need to be taken into full account in comparing the prices of different services. Two examples show this.

Figure 4

Modern Network Architectures



208. Given the scaling of the DataStream VP bandwidth charge, a third party can buy IPStream until such time as they have sufficient volume to make the DataStream VP cost effective. Because BT absorbs forecast aggregation risk (Table 6) with IPStream and not with DataStream, BT implicitly includes with the IPStream price, the option value of moving to DataStream. An alternative way of looking at this is to see that, on a like for like basis and over the long term, third parties will have a higher fill on their VPs than BT will achieve with IPStream.

209. This is also important for BT in that our current network architecture was designed to give ourselves flexibility given uncertainty in how both the marketplace and technologies would turn out. This feature has meant that now Ofcom perceive a difference between DataStream and IPStream ('The Hierarchy Of Services') which in effect is regulation with benefit of hindsight. BT itself would not have designed its network as it now looks had we the opportunity to forecast with certainty.

3.3.5 Origination And Conveyance Services

Ref. 2.197-2.206

210. Ofcom identifies a separate market for broadband conveyance. BT finds the arguments advanced very difficult to accept. Ofcom's approach appears to be the following.

211. First, Ofcom [2.197] **defines** broadband conveyance to be distinct from other forms of conveyance suggesting that this exists as a separate economic market. Ofcom's discussion is in precise technology terms, in this definition broadband conveyance uses an ATM network.

212. Second, Ofcom argues [2.198-2.199] that the broadband origination and broadband conveyance are in different economic markets because they are complements not substitutes.

213. Third, Ofcom considers [2.200-2.202] whether broadband conveyance is one market or should be further subdivided into trunk and non-trunk markets. It is argued that this cannot be done as BT's ATM network architecture is flat and so such a division cannot be identified. In this case, Ofcom's analysis is now not just technology specific, it is also BT specific.

214. Fourth, Ofcom examines [2.203-2.205] the view of the Altnets that broadband conveyance is the same for ADSL and SDSL and, as a result, is essentially the same as leased line conveyance.

215. BT finds it very difficult to follow the logic of the analysis here. Ofcom agrees that conveyance for ADSL and SDSL is the same. Ofcom then also agrees that ATM conveyance is potentially substitutable with SDH conveyance. Ofcom then go on to conclude:

'An SMP assessment relating to conveyance across the ATM network that is used to support SDSL might therefore arguably be conducted in either or both of the leased lines or broadband Market Reviews. The Director's view is that it is only appropriate to assess the market for these services in one Market Review. Since such downstream products mainly relate to leased line markets, Director's view is that it is appropriate to review the associated conveyance in the Leased Lines Market Review. Meanwhile, it remains appropriate to review the broadband conveyance

associated with the provision of asymmetric downstream services in this Market Review.'

216. BT believes that Ofcom's logic seems to point clearly to the opposite conclusion. The paragraph starts by stating that conveyance services associated with ADSL and SDSL are fully substitutable, but finishes by placing them in different markets. The only inference that BT deduce from this text is that because there are two Market Reviews, therefore Ofcom feels there must be two conveyance markets. This is to artificially narrow the relevant markets and make it more likely to find BT with market power.
217. BT does not accept that this reasoning is consistent with any economic assessment of market boundaries. Ofcom considers [2.205] that the potential substitutability of ATM conveyance with SDH conveyance does not 'remove the previously identified breakpoint between the markets for broadband conveyance and leased line conveyance'. The only previously identified 'breakpoint' that BT can find is the one **defined** by Ofcom at paragraph 2.197.
218. Finally, Ofcom argues [2.205] that broadband conveyance and leased line trunk segments are not price constraining on each other. In making this statement, Ofcom offers no evidence, but, more importantly, does not consider how price constraining effects are impacted by whether conveyance/trunk can be independently viable from origination.
219. BT believes that in order for broadband conveyance to be a separate economic market, the answers to the following two question must both in the affirmative:
- Is **broadband** conveyance distinguishable from other forms of conveyance?
 - Is broadband **conveyance** distinguishable from broadband origination?
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.
221. Whether broadband conveyance is distinguishable from broadband origination requires a more precise definition of 'conveyance' and 'origination'. In the following discussion, we find that:
- 'Conveyance' is not well defined in terms of its network functionality.
 - Network structure is endogenous to a particular network design and conveyance and origination flow out of the particular network structure chosen.
 - Broadband conveyance is not independently sustainable as an economic entity by itself.
222. BT believes it is crucially important to take the following into account when considering whether conveyance is a separate economic market, and if so the scope of that market:
- The factors (and implied functionality) of interface aggregation, geographic aggregation, usage aggregation, and risk aggregation, which are largely separable. However, there is a tie between these to the extent that, with given traffic densities, the opportunity for interface aggregation, usage aggregation, and risk aggregation will increase with greater geographic aggregation.
 - The point that any identified market needs to be **independently economically sustainable** otherwise the activity needs to be part of a broader economic market and the competitive pressures assessed accordingly.

223. Within the context of **access** services such as wholesale broadband access, 'conveyance', taken with its normal English language meaning of transporting from one physical location to another, points principally to geographic aggregation. 'Conveyance' allows traffic to be consolidated from a large number of nodes into a relative few number of nodes.
224. Within the context of **end-to-end** services such as leased lines, 'conveyance', again taken with its normal English meaning, points to the functionality of both geographic aggregation and geographic interconnection between points of geographic aggregation.
225. The factors which drive the geographic aggregation versus geographic interconnection are very sensitive. The difference in factors which point to 'flat' network structures and 'hierarchical' network structures are small and as a result, there is no clear network topology 'blueprint'. This is why Ofcom finds that its analysis based on BT's ATM and SDH networks do not overlap. In the case of BT, the latter was hierarchical while the ATM network was flat. But this is a function of the choice of network topologies and has **no bearing on the assessment of relevant economic markets**.
226. There are at least four largely separable aspects of network inputs associated with different forms of aggregation which operators can combine in a variety of ways:
- The physical transmission infrastructure of duct and fibre.
 - Nodal accommodation.
 - Transmission equipment (for example SDH and/or DWDM equipment).
 - Service switching/routing equipment.
227. Operators mix and match these in a wide variety of ways. For example, 'conveyance' could be provided by an operator renting leased lines, leasing accommodation, and owning and operating service switching equipment. Alternatively, conveyance could be provided by a network infrastructure owner offering leased lines and accommodation space but not offering service switching. Examples of both exist, and they are both 'conveyance' but consist of activities which are actually complementary as the former is undertaking switching and no transmission and the latter does transmission and no switching.
228. In practice, any real distinction between 'origination' and 'conveyance' is endogenous to any one operator's network design. Given different operators, as identified above, have different drivers on their network design and these drivers have very sensitive effects on the network design, BT believes it is simply not practical or realistic to try and identify a more general distinction between 'origination' and 'conveyance'.
229. Ofcom has fallen back on BT's ATM network design which BT believes is, again, tautological analysis. Effectively, Ofcom has **defined**, rather than analysed, the market boundary to be BT's network and services and not surprisingly, finds BT with market power in the supply of its own services. BT cannot accept this is a valid economic analysis.
230. In practice, there are a wide set of possible supply side and demand side substitutions which do not lead to the identification of a single independent 'broadband conveyance' market. As any market boundary definition is dependent on the initial service under consideration, different starting points will lead to different market boundary definitions. As a result BT believes market boundaries are broad, non-congruent, but widely overlapping. In other words, the competitive products which price constrain the conveyance price components of BT wholesale broadband products are not exactly the same as those that constrain for example, Energis or ntl, but there are overlaps.

231. Finally, BT does not believe that the 'broadband conveyance' market as defined by Ofcom is independently sustainable. By this, we mean that it is not economically realistic for an undertaking **only** to provide 'broadband conveyance'. BT believes that the economies of integrating this 'broadband conveyance' with some other operation will always produce an economic advantage compared to an operator operating this exclusively.

232. For example 'broadband conveyance' can be, and is combined with:

- ISP retailing, for example Thus/Demon.
- Business service retailing, for example, MCI, AT&T, and Equant.
- Origination, e.g. ntl, Telewest, Bulldog, Easynet.
- Other conveyance services, e.g. Energis, C&W.

233. BT suggests, that the most appropriate approach is examine the extent of actual and potential competitive entry by players approaching 'conveyance' from the different directions outlined above. This is effectively testing whether there are sufficient effective 'links' in the many chains of supply side substitution for competitive players to move into the **broadly and loosely** defined space of 'conveyance'. BT's suggested results of such an analysis is given in the section on market power below.

3.4 Conclusions On Wholesale Market Boundaries

234. BT draws the following conclusions on the nature of wholesale services.

(i) Geographic Aspects

235. Key points include:

- Aggregation of physical interface, of geographical locality, of usage and capacity, and of forecast volume risk are prime demand side drivers for wholesale broadband services.
- Geographic dependant costs, which depend on the local density of customers, and are principally the physical infrastructure costs of the last mile and backhaul, are prime supply side drivers for wholesale broadband services.
- Despite the highly geographic nature of BT's last mile costs, pricing associated with this is heavily constrained to be nationally averaged by Ofcom determination of PSTN prices (line rental and call origination which are the basis of flat rate dial Internet and Intranet access service and also LLU, all of which are nationally averaged by Ofcom.
- Underlying conditions of competition are not homogenous throughout the UK.

(ii) There Is No Separate Intermediate Services Market

236. The reasons are:

- There is no clear set of network inputs by which a set of wholesale services can be said to be incremental on each other. IPStream is not incremental on DataStream and these are parallel products in the same market.
- Any inferred cable modem based 'intermediate' service is also a parallel product in the same market place.
- Other features of functionality needed by customers can be sourced in competitive downstream markets.

(iii) The Distinction Between Origination And Conveyance Is Not Demonstrated

237. The reasons are:

- There are many possible demand side and supply substitutions which mean that 'broadband origination' and 'broadband conveyance' are price constrained by a wide

variety of services including those based on SDSL and through SDSL to leased line and data services.

- Market boundary definitions are dependent on the initial services under consideration and are broad, non-congruent, but widely overlapping.
- There is not a separately identifiable 'broadband conveyance' market, and certainly not one defined by the details of BT's ATM network design.

4. SIGNIFICANT MARKET POWER

4.1 The Analysis Does Not Encompass A Full SMP Assessment

238. The Commission Guidelines [paragraph 73] define SMP as follows:

‘In an *ex-post* analysis, a competition authority may be faced with a number of different examples of market behaviour each indicative of market power within the meaning of Article 82. However, in an *ex ante* environment, market power is essentially measured by reference of the power of the undertaking concerned to raise prices by restricting output without incurring a significant loss of sales or revenues.’

239. BT does not accept that Ofcom’s SMP assessment demonstrates that within the Review period, BT would have the capacity to ‘milk the market’. Nor has Ofcom shown that BT’s past and prospective behaviour could put it in a position in which it could act to raise barriers to entry by third parties or otherwise enable a punitive level of retail pricing and thereby make excessive returns at the wholesale level.

240. This part of our response addresses the indicators of market power which Ofcom has used. A general theme, is that, as with market boundaries, Ofcom seems to take each indicator in turn rather than looking at them in total. BT’s comments are on the basis of competitive pressures which would be expected to act jointly in constraining BT or any other operator.

4.2 Indicators Of Market Power Are Applied Selectively

Ref. 3.9-3.13

241. Ofcom [3.12] dismisses BT’s assertion that indicators of SMP are being applied in a selective fashion. Ofcom argues that it is reasonable to concentrate on past and prospective market shares (essentially volumes of end-users) with some moderating influence of the other indicators of SMP.

242. BT maintains its stance on this issue and in particular, considers that Ofcom is not applying criteria in a reasoned way between different Market Reviews. In particular, it appears to BT that for mature services, Ofcom uses *ex ante* evidence of profits above the cost of capital as the primary indicator of SMP almost irrespective of market share, and market share (actual or potential) for new services irrespective of potential profitability.

243. As noted above, Ofcom sometimes includes ISDN as a broadband service and sometimes excludes it. The ISDN service was launched in the 1980s on a highly speculative basis. BT spent (after privatisation) enormous sums of money on this network e.g. C7 upgrade, and it was heavily loss-making for at least a decade or more. ISDN is now at the tail end of its product lifecycle, the product development costs have been written off and prices cover incremental costs by a margin which Ofcom believes is above BT’s regulated cost of capital³¹. ISDN is now classified by Ofcom into a separate economic market and BT ascribed with SMP. But Ofcom is looking at profitability in a selective period of (what was) an innovative and uncertain investment and whose profitability over its lifecycle has not been established.

³¹ Fixed Narrowband Retail Services Market, Statement, Ofcom 26 August 2003, section 3.21 and Annex B.

244. Professor Lind points out³² that ‘Observing high accounting profits in the mature phase of a product’s life conveys no useful information on whether excess profits are being earned over the lifetime of the project. Economists refer to such profits as quasi-profits. They appear as if they are real (excess) profits but in fact they are only an artefact of taking a snapshot at a particular stage of the product lifecycle’.
245. He also notes that ‘economic theory only holds that firms operating in competitive conditions make zero economic profits **in equilibrium** ... In many dynamic markets of the new economy .. equilibrium may never be reached as each product is superseded by a new and better product before the market has reached the long-run equilibrium for the initial product. In such markets, we are unlikely to find firms consistently earning zero economic profits (above the cost of capital)’. He also notes that the UK departs from practice in the US and EU in this general area. BT notes that excessive profits measured *ex ante* is **not** an indicator in the Commission Guidelines [78] for NRAs to use for the assessment of market power.
246. If Ofcom does wish to use profitability as an explicit indicator, then BT considers it should be used consistently and not confined to *ex ante* assessments with benefit of retrospection. In the context of broadband, Ofcom undertakes no such forward-looking assessment of prospective profitability but restricts its comments [Annex B] to the statement that - ‘The Director does not believe that there exists any evidence of excessive pricing of wholesale asymmetric broadband services, whether these prices are explicit or implicit within retail service prices’.
247. Ofcom does not however countenance an alternative assessment that BT’s wholesale prices – absent regulation – might indicate no market power. This is because Ofcom freely admits it does not know what BT’s cost of capital should be for broadband services [4.40]. But if that is the case, then Ofcom is not able – or possibly willing - directly to address the issue of profitability. But the ability to earn supra-normal profits is the defining attribute of dominance itself, as set out above in the Commission Guidelines. This is further emphasised in *United Brands* where the Courts clearly set out that in the context of excessive pricing, the burden of proof is on those making the allegation. In similar context, the burden of proof is on Ofcom to show that BT is able to price excessively through its position in the marketplace.
248. Apart from the specific issue of the use of market shares and profitability, BT considers that Ofcom’s analysis of the other potential indicators is fundamentally flawed as it rests on incorrect assumptions and assertions. So while one indicator taken in isolation might suggest that BT has market power, the actual impact of that source of market power is considerably less when potential competition is taken into consideration including BT’s commitment to offer services absent regulation. We elaborate on these points below.
249. In summary, this method of selectively using indicators for innovative activities which has the impact of truncating the potential returns to investment made by BT. In a similar context, Ofcom proposes that mature services can be regulated on a LRIC basis but innovative services on retail minus. If however the former is on the basis of an *ex ante* outcome and not at the *ex ante* risk adjusted cost of capital, it conjoins the misapplication of assessment of market boundaries, market power and inappropriate remedies.

³² The (mis)use of profitability analysis in competition law cases. Charles River Associates Discussion Paper 9, December 2003 (author Professor R Lind).

4.3 Market Shares By Themselves Do Not Indicate Dominance

Ref. 3.14-3.45

4.3.1 Case Law Is Restrictive In The Use Of Market Shares.

250. BT wishes to reiterate its observation that case law is extremely cautious about the use of market shares as an indicator of dominance and especially in nascent and dynamic markets. This is true both for EU law and in the UK, where the OFT³³ has stated that:

‘The (Competition) Act does not set any market share thresholds for defining ‘dominance’. Market share is an important factor but does not, on its own, determine whether an undertaking is dominant’.

251. In this instance, Ofcom does not actually forecast a specific market share for BT but rather relies on capacity to serve customers. However, there are a number of difficulties with this analysis as discussed below. Further, Ofcom [4.47] emphasises 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’. Market shares are hardly likely to be a good indicator of market power in such circumstances.

252. The other sources of market power which Ofcom identifies do not in any way at all enable BT to acquire or retain market power. Rather, it is the case that Ofcom is mis-identifying market power from BT simply undertaking an activity in its own right while other operators appear to be reluctant to take equivalent risks.

4.3.2 BT’s Broadband Roll-Out Has Reflected Differing Commercial Risks

253. To understand the different risks associated with different geographic areas, it is useful to provide a rough categorisation of the history of broadband roll-out:

254. BT and cable launched their broadband services in mid 2000. The enabling of BT’s network has to be at the exchange-level granularity, and so BT adopted a phased roll-out of exchanges. This was based on the costs of enabling an exchange balanced against the projected revenue from broadband customers. By June 2002 BT had enabled 1,115 exchanges, covering 66% of the households in the UK. These were large exchanges in the more densely populated parts of the UK, which were unsurprisingly the same areas where the cable companies had built their networks.

255. In targeting further roll-out, BT entered a second phase by introducing its Registration scheme on 1st July 2002 to identify exchange areas where there was potential high demand. In order to manage the financial risk to BT, trigger levels were set for many exchanges which reflected the cost of enabling that particular exchange. Triggers were published for the most ‘attractive’ exchanges where a relatively low number (in percentage terms) of registrations were required. Trigger levels were progressively set, and by September 2003, exchanges either enabled or with trigger levels, accounted for about 90% of households.

256. These trigger levels became more stretching, with original targets averaging about 5% of homes in an exchange area, rising to an average of 12% by mid-2003. These areas became progressively less urban in nature and extended beyond the areas where the cable companies had chosen to build.

³³ OFT Guideline 415 paragraph 2.11.

257. In November 2003, BT announced triggers for a further 2,300 exchanges (leaving only 600 exchanges, accounting for about 1% of households, without a target trigger level). Although these trigger levels were higher, averaging about 25% of households, there is still substantial risk associated with enabling these exchanges due to uncertain additional future growth and uncertain revenue per customer (including the mix between DataStream and IPStream customers). These are almost exclusively outside the current Cable TV coverage areas.

258. At present, in addition to the 1,115 original exchanges, 1,056 exchanges have been enabled as part of the pre-registration scheme, with almost 800 being in the 'in-built' phase having reached their trigger level. This will take the coverage of homes in enabled areas to approximately 90%. It must be stressed however that both the competitive conditions and the financial risk vary considerably between exchange areas.

259. As discussed above in the section on geographic market boundaries, if the conditions of competition are not homogenous in the first two phases described above, they are just as different in the third phase which is the effective basis of Ofcom ascribing BT with market power from our potential ability to reach more end-users.

4.3.3 BT's Roll-Out Programme Is Only A Target

260. [text omitted]

4.3.4 Future Market Shares of Cable Companies May Be Higher Than Shown

261. Ofcom has based their calculations of future potential market shares on the number of premises. This is made up of 24.9m households and 2.4m business sites. Ofcom have calculated that BT could potentially serve 26m of these (99% roll-out, and 97% of these within reach of ADSL).

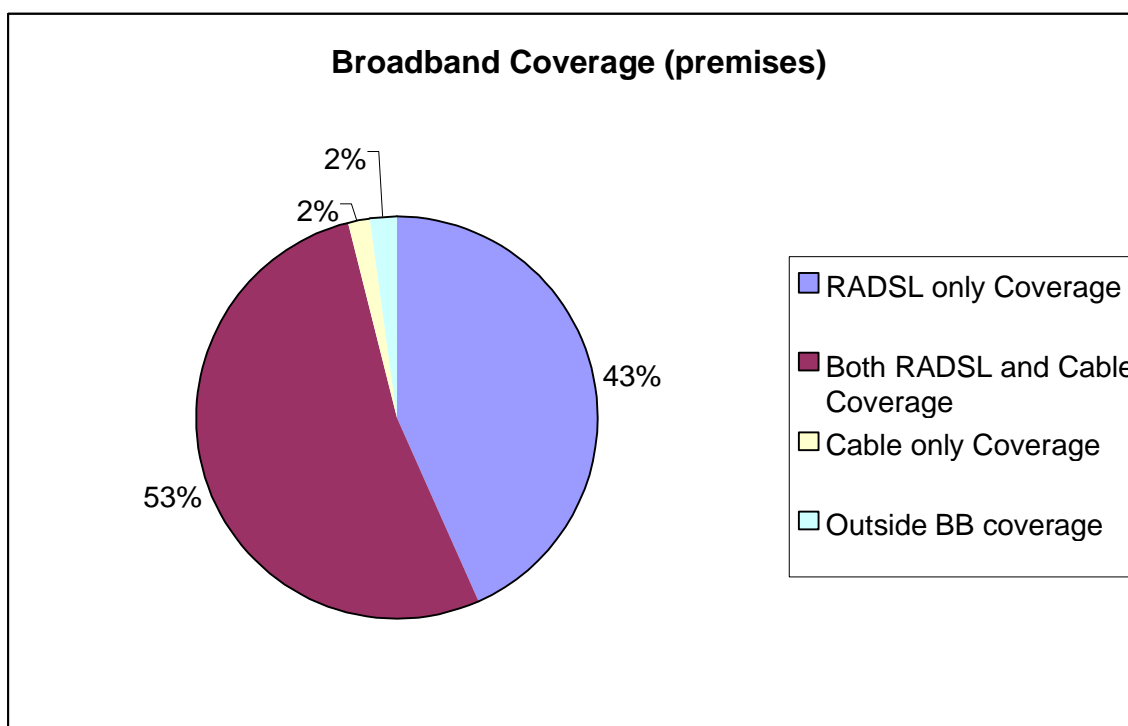
262. In contrast, Ofcom only considers the residential households passed by the cable companies, totally ignoring all the businesses they can serve. ntl alone claims over 1 million business premises are located within their broadband network³⁴. Telewest also has a significant business division, although it does not publish the number of business passed by their network but based on its household coverage, this is likely to be of the order of 500,000 business sites. Addition of these business sites gives a total of 14.8m premises addressable by cable companies if they enable their whole networks.

263. Using these assumptions the potential availability of broadband for total premises (households and businesses) can be calculated assuming BT completes its roll out programme over the next two years or so. This is shown in Figure 5 below in which it is assumed that:

- BT achieves its goal of 99% households in activated exchanges.
- Service availability within an exchange is 96%.
- All cable areas are within enabled BT exchanges.

34 ntl Business supports drive to boost take up of broadband in the County Borough of Neath Port Talbot, NTL press release, 11/12/03.

Future Potential Broadband Coverage Of UK Premises



264. The diagram demonstrates that the bulk of end users will still have choice between networks.

265. ntl also claims, in its press releases, that their network covers 11 million homes, which represents nearly 50% of the UK. This is 2.6 million households more than the equivalent figure used by Ofcom. If this alternative figure is used, then the percentage of households who will only be served by BT drops to 34%, assuming there is no overlap between ntl and Telewest. (On this matter BT does not agree that the cable companies should be shown separately. If a national market is assumed, then they should be aggregated and only for a local market is it reasonable to show them as distinct.)

266. Additionally, there are no technical or legal restrictions on either ntl or Telewest expanding their network into adjacent areas. This has been achieved successfully by Kingston, who have expanded outside their traditional area, increasing the number of homes passed by about 5%.

267. The current market share ratios of BT to cable of 55% to 44% clearly would be unlikely to suffice for a finding of SMP even if the most of the other indicators of SMP had some merit. BT estimates that even if all remaining exchanges were enabled in the period of the Review, BT's UK market share would be highly unlikely to reach two-thirds of the total³⁵. In other words, the growth in market share from DSL rollout will not be as rapid as in the recent past.

³⁵ Calculated using Ofcom's shares of 44% for cable and 55% for BT assuming penetration rising both in cable areas and outside cable areas and assuming BT acquires 100% of the (then) remaining 20% of all broadband customers who do not currently receive broadband service outside the cable areas.

268. BT has also estimated that the bulk of its rise in market share (since it stopped falling), has been from successfully competing against cable companies in their own franchise areas. This is competition on the merit and not due to higher customer reach *per se*.

4.4 BT Would Offer Wholesale Services Absent Regulation

Ref. 2.169

269. Ofcom states [2.169] that absent regulation, 'it is questionable' whether BT would offer a wholesale product and even if it did, there would be 'no obligation (on BT) to continue to make such a product available or to ensure that it was commercially viable'. BT makes the following comments in response.

270. Firstly, BT has already publicly stated that it will offer wholesale services absent regulation. BT offered services prior to the ATM Direction where the principle of offering services to third parties was not the issue, but rather the terms and conditions. Ofcom cannot undertake its market analysis on the basis of something which is simply not supported by the facts. The requirement to offer services to third parties is central to the success of BT's broadband programme. Given that ISPs and Altnets can and do contract with each other, this does not preclude PECNs from entering the marketplace. BT does not have a business case without selling to third parties.

271. For the avoidance of any doubt, BT repeats its position as follows:

'In the absence of SMP designation, BT will continue to supply transparently a comprehensive range of broadband network services in order to meet the diverse needs of ISPs and other third parties including in-span and customer-end handover. These services will be available on the same terms to Altnets (PECNs) including both a near end handover service (e.g. DataStream service A or equivalent) and far end hand-over (e.g. DataStream service B or equivalent), allowing them to create competitive and/or alternative services for ISPs and others.'

272. Secondly, regarding the point about 'commercial viability', BT sees no requirement absent regulation or even under regulation to ensure that its own offerings have to be tailored to ensure that any third party – ISP, Altnet, or end-user – can be guaranteed a profit margin. The third parties have to be efficient and viable on their own terms and in the market space in which they are choosing to compete. The market space itself has to be meaningful in terms of the value-add of production, including where economies of scope allow common platforms or costs to be recovered more efficiently. BT has to reflect its own commercial risks in the offerings it makes and be aware that different customers may be competitors as well as customers themselves. However, there is little point in BT offering services to third parties which are not then taken up commercially.

273. The Ofcom suggestion that services may not be viable, therefore is either misplaced in that it is not in BT's own interests to launch such services, or, implicitly, there is the suggestion that Ofcom is saying that BT would act to abuse a dominant position by (for example) refusing to supply. BT suggests that it is not reasonable to infer a dominant position from the assumed abuse of a dominant position when the dominant position itself has not been independently established.

4.5 It Is Not Shown That BT Can Price Above The Competitive Level

4.5.1 The Competitive Price Level Is Not Established

Ref. Annex A Page 155 'Price Trend'

274. As noted above under market boundaries, Ofcom cannot establish what the competitive level should be at either retail or wholesale levels for broadband Internet services given both are nascent 'markets'. Not only that, Ofcom accepts [4.40] that it cannot determine the *ex ante* cost of capital. The presumption that Ofcom can deduce that BT can price above the competitive level – when Ofcom is unable to set an appropriate benchmark – suggests that any finding of SMP cannot be well founded.

4.5.2 There Are Important Linkages Between Market Boundaries And Market Power

275. As noted above, the definition of individual SMP is essentially the same as that used in the HMT. (In the latter the variable is price while in the former it is quantity; market power can in fact be assessed under either dimension of price or quantity.)

276. Ofcom's assessment of SMP proceeds as if the market boundaries were precisely determined. Yet most respondents to both the retail and wholesale Reviews argued for much wider boundaries. If the boundaries are only weakly determined and not robust, then it is very much less likely an individual firm will have market power within such boundaries. If it is plausible that the true market boundary is much wider, then BT will have a lower market share in this market.

277. If for sake of argument BT is correct and the true market boundary should include unmetered narrowband Internet access, then the largest market influence (at the wholesale layer) becomes Ofcom itself which regulates the origination charges. It is relevant to note that Ofcom recognises that PSTN, ISDN and Leased Lines do form some competitive constraining influence on broadband access.

278. Putting to one side all the other issues of financial risk, BT suggests that this undermines Ofcom's assertion that dominance can be ascribed to BT. If the market boundaries are not robust (and in BT's view Ofcom incorrectly assesses them too narrowly) then even greater doubt must surround the SMP designation. Ofcom does not appear to address this matter and does not undertake even the most simple form of sensitivity testing such as the impact of including narrowband services.

4.5.3 BT's Business Risks Are Material

279. Although the market is nascent, dynamic and fast changing with new technologies already appearing, yet it is assumed that BT can 'make a monopoly profit'. Yet the higher the assumed *ex ante* cost of capital, the lower the benchmark competitive price level. In practice, Ofcom can neither establish whether current prices are too high or too low, nor adduce any evidence that BT is able to implement a dynamic pricing strategy which currently, or in the future will enable the exercise of market power.

280. BT maintains that it is not acceptable for Ofcom to argue that because Altnets (may) face **even higher** risks than BT to enter the marketplace, then it follows that BT itself has market power. Yet that is the underlying presumption of Ofcom's assessment of entry barriers.

281. [text omitted]

282. [text omitted]

4.6 There Is No Evidence That Barriers To Entry Are Materially Different For BT And Altnets

4.6.1 Sunk Costs Do Not Necessarily Confer Market Power On BT

Ref. 3.46-3.54

283. Here sunk costs are being used in a 'catch-all' fashion which means that almost by definition, BT must have market power. However, the point remains that barriers to entry do not by themselves confer market power, they only potentially enable the maintenance of pre-existing position of market power from an operator: (a) attaining a price level which no entrant can match³⁶ from economies of scale/scope (the sunk costs being 'fixed'); and (b) benefiting from a willingness to pay which permits prices to be 'above the competitive level'.

284. In terms of the materiality of sunk costs it is not at all clear to BT what actual analysis Ofcom has undertaken here to show that the costs of entry are materially greater for Altnets compared with BT. No details are provided of what trade-off exists for the costs of expenditure by Altnets compared with potential revenue. If Ofcom has undertaken a financial assessment of the risks of entry by an Altnet, it would be helpful if the key features and conclusions be made public for detailed scrutiny.

285. For the reasons discussed below regarding countervailing buying power, BT does not accept that the market is not contestable. Sunk costs are a barrier to entry but they are not indicative of the first mover necessarily having market power and as a consequence, nor do they demonstrate that competitive entry is not feasible. It is not reasonable for Ofcom to rely on the generality that the existence of **any** sunk costs confers market power. Ofcom also recognises [3.52] first mover disadvantages suggesting that entrants have advantages over BT and cable companies.

286. BT notes that in this Review, Ofcom does not on this occasion include the implicit threat of predation as a barrier to entry from the presence of sunk costs, as for example in the narrowband retail Review [3.14]. This indicates that Ofcom believes that sunk costs are not giving BT or the cable companies some extra advantage to deter entry.

287. Ofcom does not acknowledge that backhaul has already been mandated on BT as a regulated access product. We discuss the relevance of this and other aspects of network infrastructure requirements in the section below.

4.6.2 Altnets Do Not Need Ubiquity To Enter The Marketplace

Ref. 3.100-3.114

288. Ofcom sets out a case that Altnets need ubiquitous presence at BT's ATM nodes to enter the market for conveyance and more generally to enter the 'market' for broadband asymmetric origination (the sunk costs arguments above). Ofcom argues [3.107] that presence at BT's serving ATM switches would still not generally enable Altnets to

³⁶ Putting to one side the issue as to whether sunk costs enable a strategy of entry deterrence.

economically take ATM traffic as currently they are using IECs to carry narrowband traffic. Ofcom also quotes Energis claiming that at the current structure of BT's pricing, it prefers to take traffic at a few nodes rather than expanding to multiple nodes.

289. BT does not accept at all Ofcom's presumption of a requirement to have presence and capability at **all** ATM nodes as absolutely necessary for to enter the marketplace as ISPs can acquire the residual services directly from BT by purchasing alternative origination and conveyance products.

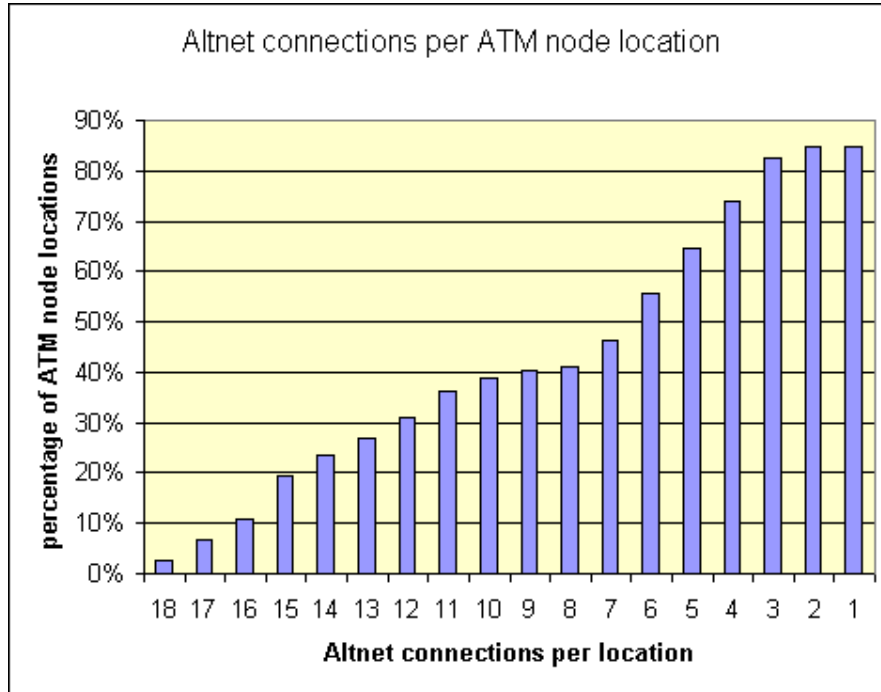
290. BT accepts that our previous submission was unable to differentiate between those points of interconnect where the link was provided by BT, and those where the other operator had built network (ISH). Additional data have now been obtained which permits this distinction and we maintain that our conclusions still hold; Annex 1 gives a detailed breakdown of the relevant information.

291. With this knowledge, it is now possible to only consider narrowband ISH interconnects where the other network provider installs a cable just outside the BT exchange building, typically in a footway box. Fibres in this cable are then spliced onto BT fibres, which then enter the BT building to provide the interconnect circuit. **[text omitted]**

292. Figure 6 below gives a summary of Altnets capability to take traffic using ISH:

Figure 6

Altnet Connections Per ATM Node Location



293. The key points which this analysis demonstrates are the following:

- In total there are 24 Altnets with ISH at some of BT's ATM nodes.
- Some of these nodes already have 18 Altnets present.
- Three Altnets **([text omitted])** are present at least at 90 out of 119 ATM nodes.
- The 15 nodes without existing Altnets presence are all in urban areas where cable companies are present including 4 nodes in central London.
- For three of these nodes, Altnets could expand their networks at relatively little cost.

294. BT can see no evidence at all of any material barrier to entry to Altnets taking off traffic from BT's ATM network. If anything, our analysis understates the capability of Altnets as it assumes that if they take LLU or line sharing, they are restricted taking backhaul to these ATM nodes which may not be the case in practice.

295. In summary, there is a slight but weak argument that BT has market power at 15 out of 119 ATM nodes but this is not presumptive of SMP as such and in fact it is extremely likely that entry could occur on a near universal scale over BT's network. Further, as discussed, in practice Altnets would not need ubiquity to enter as BT has stated that it would continue to offer services on a transparent basis absent regulation.

4.6.3 BT Maintains Its Position On The Potential Impact Of LLU

Ref. 3.55-3.58

296. Ofcom maintains that LLU is only a 'medium to longer term' competitive constraint. Ofcom argues that the independent forecast is not realistic and that BT provided 'no evidence in support of the forecasts it provided' and that if even correct, it would only represent '5% of the relevant market' [3.58].

297. In passing, it should be noted that Ofcom's own market boundary assessment is over the medium to longer term period as Ofcom has used LRIC to determine which services should enter the economic market. On that basis, it would be reasonable to consider supply-side entry over the same period.

298. In response to Ofcom's disregard for LLU, BT makes the following points:

- The projection was undertaken at a time when regulatory intervention was much less intrusive than now. It is highly likely that Ofcom's own operation of the margin squeeze test will have significantly dampened the incentives for third parties to take unbundled loops or to line share. Ofcom's assessment has to be on the basis of the competitive pressures that would exist absent regulation. The issue is whether Ofcom in regulating BT is helping or hindering entry and risk-taking by those who wish to enter offering alternative infrastructure-based services.
- The attainment of a 5% level of market share is not a trivial level of entry unless Ofcom takes a partial view of how competition works i.e. that market power has to be demonstrated from a single constraining source and not the collective impact of many sources.

299. In summary, BT maintains its position that LLU and line sharing are the only essential inputs in the production chain and which have been unbundled. Entrants such as Easynet have been able to launch successfully and larger operators could enter within the Review period if they chose to take the equivalent commercial risks to BT.

4.6.4 No Evidence On Economies Of Scale And Scope Is Presented

Ref. 3.61-3.65, 3.115-3.118

300. In the access element, Ofcom makes a number of assertions about the importance of management of DSLAMs and backhaul as being significant entry deterrents. Ofcom presents no evidence that management of DSLAMs is characterised by economies of scale. If Ofcom believes that entry will not take place because these economies of scale are so high, it suggests that the whole policy of line sharing was never going to work and the policy was doomed from the start.

301. In any case, BT cannot see that Ofcom's supposition is correct – the equipment vendors themselves provide the service guarantees to DSLAMs and this is factored into the prices charged to their customers (including BT). Further, BT understands that at least some vendors offer contracts on a uniform 'PAYG' principle which means that small entrants with only a limited customer base are not discouraged from entry. For example, the charges are on a line card basis.

302. It is the case that end-user customers are growing in number and this represents an ideal entry possibility for Altnets who have all the technical capability needed to start up a substantive programme of roll-out in BT's exchanges. As discussed below, their position

is greatly enhanced by the fact that BT as an ISP is not dominant downstream, as Ofcom [3.118] appears to accept. In summary, the case for barriers to entry in the purchase and deployment of DSLAMs is not at all evident.

303. Ofcom characterises Altnets as weak 'new entrants' . This is does not reflect the fact that many 'new entrants' are not at all new eg C&W. Other market players may be linked to incumbents in other countries with their full financial backing such as France Telecom (Freeserve) and Telefonica (Mediaways).

304. BT cannot see how Ofcom can characterise the situation of preponderance of economies of scale and scope when its market boundaries assessment explicitly downplays such economies. Indeed, in Ofcom's market boundary assessment, at the upper bound of the cost to price ratio of 0.8, economies of scale and scope hardly exist. This ratio of course includes retail costs but BT has not seen any evidence that such economies are any less or any greater at this layer.

305. Ofcom has [3.55] in any case mandated on BT the provision of LLU (broadband) backhaul as a cost-based unbundled wholesale product. In the previous consultation Ofcom also recognised the availability of alternative products such as SHDS and BT is aware of many LLU operators using this product. BT's preliminary assessment is that these products enable broad parity of treatment between BT and Altnets in terms of conveying traffic from DSLAMs to switches.

306. BT maintains that Ofcom has not demonstrated that there are barriers to entry from BT being able to access inputs at a cost below that of its competitors.

4.6.5 Countervailing Buying Power Is A Strong Force

Ref. 3.66-3.68

307. BT strongly disputes Ofcom's claim that countervailing buying power is not important. There are a number of strands to our position which can be summarised as follows, with detail in the section below:

- The distinction between wholesale broadband services and 'intermediate services' is completely artificial as outlined above. BT presents in a confidential separate note, evidence showing that ISPs are switching between IPStream and DataStream services according to relative prices. Altnets directly or indirectly are participating in this process.
- The experience of AOL and Freeserve is that they fully engage with Altnets in competition against BT and there is no reason why they should not exercise their strong downstream positions in this manner.
- Further, both of these ISPs have strong backers with good technical knowledge and are perfectly capable of designing a strategy of tendering a roll-out programme down to a localised level involving the replacement of BT as primary network provider of origination and conveyance services for broadband end-users.

308. BT expects that over the Review period, and as end-user numbers grow, ISPs will take full advantage of their strong downstream position to force down the price of network services. The only reason why the market has not seen more evidence to date is because: (a) BT does not have market power and has had to price competitively to retain this business; and (b) Ofcom is providing Altnets with real options benefits enabling them with reduced risk.

309. BT believes that the impact of this countervailing force will grow during the Review period and be fully reflected in prices being charged at the wholesale level.

4.6.6 Access To Capital Is Treated Differently In This Review

Ref. 3.69-3.70

310. In the Review of Wholesale unmetered narrowband Internet termination services in August 2003, Ofcom stated the following:

‘3.21 Some respondent agreed with Ofcom’s initial view that BT’s large overall size and relatively strong financial situation may give it some advantage when it comes to funding new network infrastructure and attracting customers.

3.22 However, no additional information was provided to support the argument that financial strength would give BT a significant and sustainable or decisive advantage in the market. While BT has recently had a stronger balance sheet than many other operators, the situation can change rapidly, for example when other companies complete financial restructuring, with substantially reduced debt levels’.

311. In contrast, in this Review, where Ofcom wishes to maintain regulation rather than remove it, the cost of capital for new investment is thought to be ‘a potentially important advantage for BT as would be potential access to any other input at costs unattainable by competitors’.

312. BT maintains that Ofcom cannot run this argument both ways. In particular, if Ofcom puts the burden of proof on Altnets to demonstrate that cost of capital is **not** material in the case of Internet termination, by the same token it should demonstrate that it **is** material in the case of wholesale broadband services.

313. As far as BT can tell, Ofcom has undertaken no empirical review at all of the cost of capital and so its suppositions are purely conjectural. On the other hand, the evidence which BT quoted was a substantive body of research by a highly distinguished set of researchers³⁷.

314. BT would like to reiterate the point that there is a global marketplace for DSLAMs and we do not have a privileged position in terms of their purchase or maintenance. The other inputs are essentially all regulated or fully competitive.

4.7 The Consultation Document Appears To Cast Doubt On SMP

Ref. 2.168-2.179

315. BT notes that Ofcom [2.173, 2.175] appears to undertake a SSNIP test at the wholesale level directly and finds that cable constrains copper directly³⁸. If this is the case absent regulation, it would appear to suggest that BT should not be ascribed with market power.

316. BT agrees with this conclusion even though Ofcom at this stage ignores the potential switching at retail levels to the other services which were examined previously such as ISDN and leased lines. In a sense, BT and Telewest have come to the same conclusions

³⁷ ‘A Study Into Certain Aspects Of The Cost Of Capital For Regulated Industries In The UK’, S. Wright, R. Mason and D. Miles, February 2003.

³⁸ The precise details are not supplied by Ofcom.

working independently – Ofcom has not shown that BT has SMP. Ofcom would appear to confirm this conclusion from their own analysis.

317. The point which we would like to make, is that as the definitions underpinning the HMT and SMP are essentially the same (as discussed above), Ofcom’s analysis indicates that BT cannot enforce a profitable price increase at the wholesale layer. In that case there is no possibility of BT having SMP, if the benchmark of SMP is taken as the ability to profitably raise prices (and reduce output) by 10%. If Ofcom wishes to argue that a lower threshold of price increase for SMP be used, then this needs to be stated and it should be demonstrated that the other indicators of market power such as shares, barriers to entry etc are sufficient for this lower threshold to be justified.

318. As discussed above, BT does not recognise the ‘intermediate services market’ so we do not see the relevance of a separate SSNIP test for these services which Ofcom undertakes.

4.8 There Are Many Sources Of Competitive Entry

4.8.1 Framework

319. In BT’s view Ofcom looks at potential entry in a very static fashion around specific and narrow markets which fails to capture the nature of competition. BT sees competition and competitive entry from a number of different directions. The following provides an outline discussion on the major sources.

4.8.2 Retailing Internet Service Providers (ISPs) Securing Upstream Supply

320. [text omitted]

321. [text omitted]

322. [text omitted]

323. [text omitted]

324. [text omitted]

4.8.3 Business Service Solutions Providers Securing Supply

325. [text omitted]

326. [text omitted]

327. [text omitted]

328. [text omitted]

4.8.4 CATV Companies Widening Supply And/or Channels To Market

329. [text omitted]

330. [text omitted]

331. [text omitted]

4.8.5 Other Fixed Operators Securing Supply and Channels to Market

332. [text omitted]

333. [text omitted]

4.8.6 Mobile Operators Developing 3G Services

334. [text omitted]

4.8.7 National Infrastructure Owners Developing New Revenue Sources³⁹

335. [text omitted]

336. [text omitted]

337. [text omitted]

338. [text omitted]

339. [text omitted]

340. [text omitted]

341. [text omitted]

342. [text omitted]

343. [text omitted]

4.8.8 Overall Assessment

344. Ofcom has focussed almost exclusively on the entry ability of Altnets to provide service between BT's DataStream service and the ISP retailers via a regulated margin between DataStream and IPStream. BT considers that this focus is misplaced for the following reasons.

345. Firstly, the ability of Altnets to make an economic offer in this 'slice' depends heavily on very low marginal cost for the supply of the wholesale service as an offset for the costs associated with two sets of inter-business interfacing, i.e. BT-Altnet-ISP, rather than a single BT-ISP inter-business interface or LLU-ISP interface. The viable scenarios are highly dependant on each individual Altnet's individual circumstances.

346. Secondly, this focus and regulatory stance very significantly undermines the investment case for access infrastructure (including CATV, LLU/LS based solutions, and fibre access) which provides a much more stable basis for long-term competition. BT is in absolutely no doubt at all that the recent relatively slow pace of genuine access based infrastructure competition is a direct and inevitable consequence of Ofcom intervening through the margin squeeze test framework. This has also had a very destabilising influence on ISPs in their own business strategy planning.

347. BT sees at least two viable means of entry into the broad and loosely defined area of wholesale broadband access:

- Building of access infrastructure (e.g. LLU, fibre access networks, 3G, fixed radio, satellite, power line, etc) followed by (or in conjunction with) building a core network and offering retail services.
- Providers of business service solutions extending physical network infrastructure in areas of high customer site density (i.e. the major cities) and using leased access services outside these areas – from downstream working upstream.

348. Based in this analysis of market entry, BT assesses market power as follows:

³⁹ BT refers to the Confidential Annex on purchasing of wholesale services.

- The major city centres are fully competitive with a significant number of players offering fibre access (detailed information was submitted to Ofcom in July 2003).
- The areas where CATV companies have built and offer cable modem services are fully competitive. These are also the areas with highest consumer demand.
- Areas with no competitive access build, BT holds a *de facto* monopoly on supply for fixed access, but does not hold market power as a result of existing regulation of PSTN services and higher network costs makes its financial return more risky and no opportunity at all for an excessive profit.

4.9 The Draft Decision On SMP Is Not Well Founded

Ref. 3.76

349. In BT's view, Ofcom's market boundary analysis is reliant on very weak evidence, and is not at all robust. In parallel, the SMP analysis appears to be reliant on projected market shares based on a very narrow market definition with only limited empirical assessment given to other factors where their materiality is not demonstrated, only asserted. There is no evidence that absent regulation, BT would be able to exercise market power.

350. Ofcom conducts the SMP assessment purely with respect to BT's network assuming a strong initial position on the part of BT to start with which is absent in reality. There is no recognition of competing networks, both regulated within BT and from cable companies. As such the assessment falls far short of the necessary standard required under the Directives.

5. REMEDIES

5.1 BT Does Not Believe That The Principle Of Proportionality Has Been Applied⁴⁰

5.1.1 There Is No Regulatory Options Appraisal

Ref. 4.17

351. Ofcom argues [4.17] that - 'The Director has also taken full account of his (Access) Guidelines. In the June 2002 Regulatory Option Appraisal Guidelines, Ofcom stated the following:

'In what situations should ROAs be undertaken?'

The following paragraphs explain the circumstances in which ROAs should be conducted:

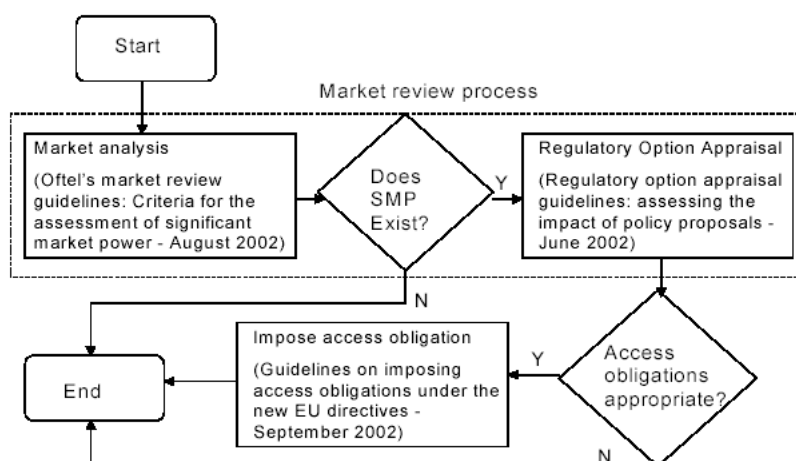
1.7 Significant effects. While Ofcom staff may choose to use ROAs as a general decision-making tool, they should always be done where proposals for regulatory action are likely to have significant effects. In practice this means that they must be carried out at least in the following circumstances:

- policy issues (including major policy issues arising in casework) upon which Ofcom is consulting or is likely to consult (formally or informally);
- occasions where particular stakeholder groups may be disproportionately affected.'

352. The ROA Guidelines set out a whole series of steps which Ofcom proposes to undertake which come between the finding of SMP and the actual imposition of remedies, as shown in the diagram below (Figure 1 in Ofcom's AID Guidelines):

Figure 7

Regulatory Options Appraisal



353. BT can think of no better example than broadband where stakeholders including BT will be materially affected. No ROA has been undertaken but rather Ofcom repeats

⁴⁰ BT's comments are without prejudice to our position that no *ex ante* regulation is justified.

assertions of the need to apply *ex ante* regulation. While Ofcom notes the arguments for the potential costs of failure to regulate [4.10], the corresponding costs of regulators failing to apply *ex ante* regulation properly also will result in large costs⁴¹. The Ofcom (Ofcom) ROA Guidelines are an excellent blueprint for examining these issues which BT supported. In practice, they have simply not been addressed and Ofcom cannot therefore demonstrate proportionality.

354. BT's comments in this Section are therefore without prejudice to our position that the economic rationale underpinning designation of SMP on BT has not been demonstrated, and the case for **any** *ex ante* regulation has not been established.

5.1.2 There Is No Examination Of The Issue Of Legacy Networks

355. The ERG⁴² has argued (page 71) 'where there is a risk of dominance being leveraged due to the control of a necessary input into the emerging market. This may arise if elements of legacy technology are used to deliver the new services'.

356. At the current point in time BT does not believe that broadband Internet access is an emerging market as it does not have the characteristics of distinctiveness which the ERG [3.31] defines⁴³. Broadband Internet access in the UK falls within existing market boundaries and there is no evidence that additional regulation on broadband access is needed to ensure that effective competition and consumer choice is needed in the downstream retail markets. Regulation of broadband services is therefore not proportionate in the manner in which Ofcom claims [4.7].

357. However, if it is assumed to be an emerging market as seems to be the case in Ofcom's view, it should merit consideration as to whether 'legacy infrastructure' is involved or not. Ofcom does not do this nor distinguish where BT has used infrastructure which is used for other regulated services and for services outside direct *ex ante* regulation.

5.1.3 BT Is Required To Supply Services Unrelated To The Downstream Market Analysis

Ref. 4.222

358. The additional functionalities under the ATM Direction have three elements which are: (a) scalable VPs; (b) amendment to limits on EUDPs; and (c) additional classes of service. Ofcom argues [4.222] that the additional functionality services 'will primarily allow for the creation of innovative intermediate services that will in turn allow the provision of innovative and differentiated broadband internet access retail services'.

359. The introduction of classes of service of cbr and vbr (rt) have essentially nothing to do with retail Internet access or Ofcom's market analysis. These are complex and expensive developments which have a major effect on the BT portfolio including voice and leased line products and which link into the symmetric broadband access 'market'. It is not a justification to argue that because BT has been assigned with SMP in related upstream and downstream markets, this gives carte blanche to any access request over DSL. These investments are risky in their own right with uncertain demand and financial viability.

⁴¹ Ref ETNO report by CASE Associates.

⁴² Draft ERG/EC approach on appropriate remedies in the new regulatory framework, November 2003.

⁴³ This is in the strict economic sense in which the ERG has used this term. There are of course a number of technologies which might be described as forming an 'emerging market' in the more conventional understanding of this phrase.

5.1.4 Insufficient Attention Is Given To BT's Concerns On Handling Multiple Conflicting Requests For Access

Ref. Condition EA7 – Requests for new Network Access

360. In common with our responses to the other Market Reviews, BT continues to be concerned about the short timescales proposed for responding to new access requests. In addition, BT is concerned that the inappropriate use of the process by individual requestors could impede the development of this market in the most efficient way, and hence be detrimental to end users as well as imposing a high cost burden on BT.
361. The basic concern, is that if individual requests are made, that this could well result in variations in requirement that will be less efficiently met than by accommodating a wider common requirement. Equally, there may very likely be conflicts in terms of BT's capability and capacity to meet these demands with pressure on the development of key systems in particular. Without some form of co-ordination, a situation could easily occur where a request could be considered reasonable because BT has the capability to meet the request at that particular point in time, but this might then impact on subsequent requests, which may be more beneficial to the development of the market but when BT no longer has the capacity to consider them.
362. BT accepts that in some circumstances market demand for a particular request is clear. However this is not always the case and a recent questionnaire to DataStream customers highlighted a varying and conflicting degree of interest in a range of proposals.
363. BT proposes that to assist the optimisation of its development resource, and to demonstrate demand, it would be helpful for requesting operators to gain the support of a number of other operators. A list of operators prepared to commit to a request will potentially add weight to any request. BT accepts that for commercial reasons some operators may not want to take this route. However, a demonstration of reasonable demand will remain a key consideration in evaluating requests.

5.2 The Obligations To Provide Access Services Is Not Bounded Or Defined

5.2.1 The Issue Of Eligibility

Ref. Condition EA1 'Requirement to provide Network Access on reasonable request'.

364. This Condition would require BT to provide Network Access to a Third Party which reasonably requests such Network Access in writing or as directed by the Director (Ofcom).
365. Part 1 of the Schedule to the Notification, paragraph 3, states that 'Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them and otherwise any word or expression shall have the same meaning as it has in the Act'. As 'Network Access' is not defined in the Schedule, it must therefore have the meaning set out in section 151(3) of the Act. Here, Network Access is defined as meaning access and interconnection services provided to other communications providers.
366. It is BT's understanding that the term 'Network Access' as used in Condition EA1 and other Conditions should not apply to services supplied to retail end-users. In the interests of transparency, and to avoid misunderstanding, we suggest that Ofcom amends the

definition of 'Third Party' in Part 1 of the Schedule from 'a person' to the following. 'Third Party' means a person providing a Public Electronic Communications Network.

367. This amendment would bring the Network Access conditions applying to Wholesale Broadband Access markets in line with those already set or proposed in all of the other wholesale Market Reviews.

5.2.2 The Scope Of Access

Ref. Condition EA1 'Requirement to provide Network Access on reasonable request'.

368. BT refers to the discussion in Section 3 on wholesale market boundaries. We set out our position that either Ofcom can undertake its market assessment across the entire spectrum of the potential for broadband services to offer input to a wide range of downstream markets, or alternatively a narrow linking with commensurate obligations but not a combination of the two, namely narrow market analysis and unbounded access obligations.

369. There is also specific lack of clarity as to how BT's ADSL and SDSL services will respectively come under the Conditions of asymmetric broadband access and leased lines (symmetric access). For example, BT's ADSL services up to 256Mbit/s are in fact symmetric in nature, as the upstream and downstream rates are in essence the same; hence it is BT's understanding these services are not covered by this Review. At some point in the future, high bandwidth VDSL services are likely to be asymmetric yet they may be more appropriately aligned to the economic market encompassing SDSL.

370. In summary, BT is of the view that Ofcom has not clearly defined the scope of broadband services and reliance on current low level bit stream services is not acceptable as a basis of all embracing obligations extending beyond the market analysis.

5.2.3 Relationship Between Conditions EA1 and EA7

Ref. Relationship between Condition EA1 and Condition EA7 'Requests for new Network Access'.

371. BT understands that Condition EA1 applies only to the supply of existing services and not to new services requested by other communications providers, which are covered by Condition EA7. BT would appreciate confirmation of this point.

5.2.4 Intellectual Property, Network Information And Confidentiality

Ref. Condition EA7.3 The Dominant Provider to provide Third Party with information.

Ref. Condition EA3.2(a) A description of the Network Access including technical characteristics

372. BT has a number of concerns regarding this Condition and associated commentary [4.184] and we refer to our submission to the previous Consultation on this matter. BT is not always in a position to supply the IPR which vendors themselves retain in that the vendors do not always make it available to BT. BT may be in no position to minimise the IPR which vendors retain.

373. Further, Altnets may use such an obligation to go on 'fishing expeditions' to try to understand the details of BT's own network without any real desire to request services.

374. Condition EA3.2 (a) also has the potential to lead to considerable disputes in the future as operators continuously strive to know more about BT's network. The current regulation only requires BT to provide what is necessary to establish Interconnection and BT suggests that this should suffice.

5.3 Some Conditions Are Too Restrictive

5.3.1 The New Requirement To Show Internally Provided Services

Ref. Condition EA3.3 'Where the Dominant Provider provides to itself Network Access in a manner that differs from that detailed in a Reference Offer to any other person, it must publish such a Reference Offer which includes at least Condition EA3.2 (a)-(p)

375. BT sees no purpose in this requirement given that Ofcom can investigate any suspected breach of treatment under the Competition Act and regulatory dispute procedures. Additionally, the existence of Accounting Separation for broadband provides sufficient financial information concerning the components deployed. The proposed Condition therefore provides an unnecessary burden and BT requests it be dropped.

5.3.2 The Issue Of Undue Discrimination

Ref. Condition EA2 – Requirement not to unduly discriminate

376. BT refers to the comments made on this Condition in the previous Consultation including the ability of BT to be able to appreciate the 'materiality' of any differences in downstream markets where our own market knowledge may not be complete and where a burden of proof is unreasonable when placed on BT. The burden of proof remains on Ofcom to show why discrimination is undue.

377. 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 therefore proposes that the issue of 'materiality' is contained in Condition EA2.1 and Condition EA2.2 is dropped. BT also has concerns that the term of 'matters connected with Network Access' is vague and undefined in scope.

378. BT is concerned that no operator will ever be able to gain First Mover Advantage from their innovation over the BT network if these proposals are implemented whereby notification of three months enables all third parties to replicate a new service at time of launch.

379. Finally the issue of discrimination is important in relation to the provision of access services which may be used as inputs into downstream services which form no basis of the regulatory regime. BT considers that it should have full freedom in such circumstances to innovate and provide services as it chooses outside specific rules on discrimination.

5.3.3 The New ATM Direction

380. BT will reserve its comments on the MST for the appropriate consultation. We also have commented on the issue of Alternative ATM Service Categories and the more general issues that we do not consider SMP designation is justified for either origination or conveyance.

381. BT perceives 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 is redundant.

5.4 BT Has Some Comments In Detail On Notifications

Ref. Condition EA3 'Requirement to publish a reference offer'

382. BT is in favour of publishing a reference offer for widely available services. However, there are circumstances where a third party reasonably seeks a contract which has some variations from the basic terms and conditions. BT would like to have some flexibility here without having to issue completely new sets of offers.

Ref. Condition EA3.7 The Dominant Provider shall send a copy of the current version of the reference Offer to any person.

383. BT considers that Condition EA3.6 (a) is sufficient to cover this need and EA3.7 is an onerous administrative overhead. A compromise might be for BT to provide a facility to enable the relevant document to be downloaded from the web site which provides a timely solution for the customer and less cost to BT.

Ref. Condition EA6 – Requirement to notify technical information

384. BT is disappointed that Ofcom has concluded that there is no difference between interface notification and technical notification of the features of the product. BT believes that it is unreasonable to provide 90 days notifications for interfaces widely standardised through bodies such as ETSI and widely available in the marketplace. These interfaces are generally widely understood and deployed in industry hence their introduction should have minimal impact on other parties.

385. A large number of the developments being made by BT for wholesale broadband services are to meet the requests of other operators. The implications of the requirement for long technical notifications is that all of these enhancements will now be subject to three-month notification. This means that no contracting party can gain any downstream advantage from the results of their own innovative ideas. This does not apply just to BT but the whole industry.

Ref. Condition EA6.4 (c) Publication of notifications

386. BT makes its technical notifications freely available on its web site and in this context the new requirement to provide technical updates to those that request them is an onerous and completely unnecessary administrative burden. BT is also not aware of any complaints or otherwise some form of market failure with respect to the current arrangements and we suggest that this new requirement is dropped.

5.5 The Margin Squeeze Test Proposals⁴⁴

5.5.1 BT's Stated Position Regarding The MST Is Misrepresented

Ref. 4.43

387. Ofcom states that 'BT does not believe it should be subject to any pricing rule, but if one is to be imposed .. retail minus is preferable ...'. In our response of July 7th 2003, BT set out a range of four options for the control of access pricing as follows:

'Alternatives To The Margin Squeeze Test

301. The following are the possibilities which BT has been able to identify under the presumption of an SMP designation:

- No price control but a general obligation not to discriminate unduly.
- A limited application of the margin squeeze test, subject to much more precise parameters and a template with periodic rather than continuous monitoring. All ISP services would be excluded and dealt with under the Competition Act.
- Input prices to be specified as 'cost-based' with various options for BT and/or Ofcom to agree a methodology.
- Some form of safeguard cap whereby BT would agree to provide certain services which would not increase in price over a specified period.

302. In light of the strong competition in the UK, BT's preferred position is the first option above. We do not believe that a margin squeeze test should be applied *ex ante*.

303. In the absence of margin squeeze tests, BT would propose that Ofcom handles complaints under the Competition Act. BT would like to explore these alternatives with Ofcom to find a way forward from the current unacceptable system.'

388. BT was careful not to favour any one solution over any other but made clear that if one was to be applied, then the generic requirement for 'no undue discrimination and reasonableness' should suffice under the application of competition law. If some other inference was made from ambiguous text which BT submitted, we would like to make clear our opposition on principle to the MST and in no sense at all do we support its application in the manner in which Ofcom is now proposing. Nor do we necessarily favour it over any other proposal other than in the context of our preferred position.

389. BT notes that Ofcom [4.57] continues to argue that an implicit margin squeeze test has to be passed for all other broadband services which are not explicitly governed by Ofcom's own margin squeeze test. BT is unclear how it is supposed to be able to cope with this proposal, in that a multiplicity of explicit and implicit tests under *ex ante* regulation and competition law will not merely proliferate, but be as unworkable as the current system.

390. BT reiterates its point that it may have no direct or indirect knowledge as to how third parties (and not just those with rights for interconnection) will or could use its broadband access services. Ofcom has already mandated a range of access products on BT which have no bearing on its market assessment and which come into the ATM Direction.

⁴⁴ BT wishes to reiterate its request that the consultation on the MST should cover the fundamental principles and not be limited to a narrow discussion on parameter values.

391. If Ofcom continues with the MST proposals, it will be essential for the following to be clarified:

- The precise range of upstream and downstream markets which will be affected.
- Whether the MST will be an explicit test or an implicit test.
- Which methodologies will be acceptable for both of these.
- How such a resulting situation will be reconciled by the standards of competition law and how compatibility will be ensured.

5.5.2 BT Does Not Accept That Ofcom Should Artificially Assist Entrants

392. Both BT and many other access infrastructure providers set out in considerable detail in the broadband consultation and the Access & Interconnection Directive consultation (July 2002) why the retail minus formula does not incentivise infrastructure build and has the effect of diluting the *ex ante* returns to the access operator. There are three basic reasons for this: (a) the granting of options rights to third parties; (b) the creation of artificial 'markets' which have no commercial basis; and (c) the use of an 'efficient entrant' standard in the calculation of the margin.

393. Ofcom's emphasis on looking primarily at IPStream and DataStream sets of services is flawed in that, as discussed in the section on market boundaries, BT considers that they are part of the same economic market and not two stages on the 'ladder'. Any margin which Ofcom sets between them will inevitably be artificial and not founded on correct economic analysis. Ofcom's 'intermediate services market' does not feature in the Commission's Recommendation or the Memorandum.

394. BT will present Ofcom with further argumentation on options benefits during the MST review. We consider that the combination of the creation of artificial markets and options benefits will have the impact of simply transferring margin from BT to its competitors. Ofcom is concerned about the cost of Altnets extending their presence to all of BT's ATM nodes, a cost which is probably in the low millions of pounds⁴⁵ but this is small in comparison with risks which BT has taken from investing £1bn plus (and growing) in broadband Britain⁴⁶.

395. BT strongly resists the use of an 'efficient entrant' standard for the reasons set out by CASE Associates in our previous submission – in economics the correct principle is actually the lower of either the entrant or the integrated operator. The use of an artificially high standard is not warranted under Competition Law nor is it enabling the attainment of efficient investment and innovation, goals which are tasked to NRAs in the Directives.

5.5.3 The MST May Apply To Services Outside The Regulatory Regime

Ref. 4.226

396. It was BT's understanding that Ofcom's proposals would limit the role of the MST to services at the 'network' layer. However the current proposals contain no such assurance and indicate that Ofcom may include tests down to the ISP level.

397. BT strongly objects to this eventuality. Ofcom is already examining BT's ISP pricing in the 'Freeserve case' under competition law. *Ex ante* regulation is only supposed to apply under the Commission's three tests where competition law will not suffice. Further,

⁴⁵ This also ignores the possibility of third parties coming to agreements with each other.

⁴⁶ "So far, we have invested, I think, over £700 million and I think there is another 200, £250 million to go forward, at least, to make sure that you get that door-to-door carpet of availability you were referring to." Ben Verwaayen. (Source: Oral evidence Taken before the Trade and Industry Committee on Tuesday 11 November, 2003.)

application of the MST between broadband access services and multiple downstream markets, is implicitly regulating the margin between downstream services which are not part of the regulatory regime at all subject to *ex ante* regulation.

5.5.4 Continuation Of The MST Will Slow Down Innovation

398. Ofcom recognises the pace of innovation in this sector. If the proposal goes ahead, BT will need regulatory clearance for all of its new 'intermediate' services indicating very prolonged periods of uncertainty. This will be highly intrusive regulation where regulatory forbearance is clearly justified, especially given the nascent nature of the marketplace.

5.5.5 BT Is Unclear How Different Pricing Rules Will Apply In Practice

399. In the Leased Line Review, Ofcom [6.94] intends to apply cost orientation and potentially to determine prices for SDSL as part of the regulation applying to PPCs. and the retail minus formula is proposed for ADSL services. However, these services can and will be supplied across common infrastructures including the same DSLAMs.

400. It is unclear to BT how Ofcom can reconcile these positions given that BT will have to factor in costs and revenues from one set of services to derive the 'minus' for another set of services.

5.5.6 The MST Cannot Cope With Underlying Uncertainty And Risk

401. Margin squeeze issues become extremely difficult to address when there is a high degree of uncertainty in market conditions, including in particular the treatment of long lived capital assets. This becomes even more complex when the practical impact of the margin squeeze and regulation is to confer real options benefits on third parties⁴⁷.

402. The proposed solution of 'fixing a margin' will not address these problems but at the very minimum an MST should be forward-looking, as the discussion on wholesale market boundaries suggested including the IRG analysis. BT will be addressing these issues in detail in the forthcoming MST consultation.

5.6 Commentary On Conditions For Kingston On Hull

Ref. Condition EB2.2 – Requirement not to unduly discriminate, 4.73-4.89

403. No evidence is provided or reasoned argument made to justify the difference in the undue discrimination treatment between BT and Kingston. Given the absence of appropriate justification, BT proposes that Conditions EA2.2 and EB2.2 should be aligned.

Ref. 4.131, Transparency as to quality of service

404. The justification provided as to why an equivalent condition to EA5 should not apply to Kingston is that there are no wholesale customers at present to make such figures statistically meaningful. On the contrary, BT is of the view, that within the Hull area it would be statistically meaningful and beneficial to consumers for quality of service information to be made available. Moreover, at a minimum, Ofcom should incorporate the words of Condition EA5 in Condition EB3 so that 'the Directors intention' [4.131] is triggered when a contract is signed,.

⁴⁷ As a particular example, the impact of the inherent options benefit that third parties hold in being able to switch from IPStream to DataStream as their volumes increase, as discussed in section 3.3.4, affects the values of the usage factors 'ai' in Ofcom's proposed MST formula [4.229]. Assuming 'average' values will not adequately reflect underlying uncertainty and risk.

Requests for New Network Access

405. Ofcom implies that the reason for not regulating the Kingston SOR process is that nobody has used the scheme. This conclusion does not highlight whether the existing Kingston process is satisfactory, but it does raise the more serious concern as to why the scheme has not been used. In BT's case, historic restrictions from the BT Licence limited opportunity in the Hull area; however, for Altnets it is not clear why they are not demanding for wholesale services. BT anticipates problems with the Kingston process going forward and invites to Ofcom to align the regulation of BT and Kingston.
406. BT requests that Kingston be obliged to offer an equivalent to wholesale broadband access product given the absence of competitive pressures and super-dominance of the local operator.

THE PRESENCE OF ALTNETS IN RELATION TO BT's ATM NETWORK

1. [text omitted]