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Trade and Industry Committee

UK Broadband Market

Second Report of Session 2003–04

Volume I

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Footnotes

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Summary

The Government has set targets for both the competitiveness and the extensiveness of the UK broadband market. However, in the short term there may be a trade-off between these goals, and focussing on rolling out broadband may be at the expense of competition. We agree that the Government is right to aim to make the market both competitive and extensive, but it is important that both it and the Regulator make clear which is to take priority in the immediate future. We note at this stage that if the priority is towards competitiveness there will be a greater role for the public sector to play in ensuring extensiveness.

For take-up of broadband to rise in the UK, potential users need to be convinced of the benefits that they can gain from it. This will require a continued increase in the quality of the goods, services and products that can be accessed via it. Content cannot be entirely separated from infrastructure matters and, to ensure that this content continues to develop, the speeds that constitute broadband will have to steadily improve as well. As yet, it is not clear that the market will deliver this: while companies are developing higher speed products, much of the growth has been in the cheaper, lower speed products. However, we are not advocating the type of public investment in high speed infrastructure seen elsewhere in the world. The Government's role is to facilitate the roll-out of broadband so that it is available to those who can benefit and to make certain that the regulatory framework ensures that commercial decisions by private companies are aligned with the wider economic and social needs of the country.

1 Introduction

Background

1. Broadband is the technology that allows permanent or 'always on' access to electronic communications at much faster speeds than have been available with traditional 'dial-up' narrowband internet connections. Broadband has been seen as a vital component of the 'knowledge economy' that the Government has emphasised so strongly, and is also seen as a driver of economic growth and competitiveness. In its written submission, the DTI cites evidence that suggests that the use of broadband could result in productivity savings of £3.5 billion and £1.2 billion cost savings for Small and Medium-sized Enterprises (SMEs) in Britain. [1] One recent report went as far as to suggest that broadband could have a similar economic impact to the introduction of electricity.[2] Whilst not subscribing to such a dramatic view, we have no doubt that broadband will have a far-reaching impact and that it is important that the UK is able to capitalise on the opportunities that it creates.

2. For businesses, broadband can transform the relationship between a company's employees, and between a company and its suppliers or customers. The British Chambers of Commerce concluded that:

> "[b]roadband has the power to transform business, not just though faster downloads or emails and attachments, but also by enabling companies to be more productive and competitive by using e-enabled applications. A broadband connection opens up a wide range of opportunities for businesses, including enabling them to link directly to their customers and suppliers, to access key accounts from multiple locations, and to communicate effectively from a distance via video conferencing. A broadband connection can also help business control costs by outsourcing key business functions such as payroll, accounting and training".[3]

3. For domestic users, broadband opens up a range of leisure possibilities such as on-line gaming, and film and music downloads. But it also allows for easier on-line shopping or banking and has the potential to enable access to an array of information about public services. It also offers much greater possibilities for homeworking.[4] Such is broadband's perceived importance, we went as far as considering whether a Universal Service Obligation (USO) might be necessary to ensure that every household can access broadband—this is discussed in more detail in Chapter 3.[5]

1 App 9

2 Broadband Industry Group, *The Economic Impact of Competitive Market for Broadband* (November 2003), p. 21–22

3 British Chambers of Commerce, *Business Broadband: A BCC Survey* (September 2003), p. 1. See also Broadband Stakeholder Group , *Third Annual Report & Strategic Recommendations* (January 2004), Chapter 3.3 (hereinafter '*Third Annual Report*')

4 Broadband Stakeholder Group, *Third Annual Report* (January 2004), Chapter 3.2

5 iSociety has conducted a detailed study of domestic broadband use. J. Crabtree & S. Roberts, *Fat Pipes, Connected People: Rethinking Broadband Britain,* iSociety (October 2003)

4. The Government's expressed aim is to create the most extensive (or widely available) and competitive broadband market in the G7 by 2005.[6] In this Report, we examine the current state of the UK broadband market against this aspiration, and the role played by the Government, the regulatory regime and the companies involved in the sector, in achieving it.

Broadband Technologies

5. Broadband can be accessed by a variety of means. The most widespread means is by Digital Subscriber Line (DSL) which allows broadband to be delivered via the telephony network once the local exchanges have been suitably enabled. The most common form of DSL is Asymmetric (ADSL), meaning that download speeds are quicker than upload speeds. Broadband is also commonly available through the same cable network that carries cable television and through radio links (known as Fixed Wireless Access).

6. Satellite is an established technology for delivering broadband, though in the past it has proved too expensive to be a truly mass market product. However, if satellite broadband becomes available through Sky TV mini-dishes, it could become a mass-market product. The difficulty is that, as these dishes are made for receiving rather than sending signals, uploading will have to be via another means such as a dial-up connection and will therefore be much slower.[7] Two way satellite broadband is, however, increasingly available and, whilst the initial costs of equipment and installation may be higher than for some other technologies, monthly charges are now closer to those of ADSL and cable.[8] New commercial developments are increasingly likely to have fibre connections that can carry broadband, though, because of the cost, usually only in areas that are likely to have particularly high demand. Dedicated Leased Lines, frequently fibre, are available for exclusive use; but, again, because of the cost, they are generally only used by large companies or by smaller specialist companies who have a sufficiently high demand to justify the cost of a dedicated line.

7. There are also some emergent technologies that will allow other means of broadband access. Currently companies are holding commercial trials sending broadband along powerlines, though there is no immediate prospect of this coming to market.[9] Third Generation mobile phone (3G) technology is now available and is promised to deliver internet access at speeds up to 300 kilobits per second—many times faster than traditional dial-up connections.[10]

Defining Broadband

8. Whilst broadband is a term that is much used and has been the subject of considerable attention, we found that there is disagreement about what actually constitutes broadband. Oftel used a number of definitions before they settled on 'always on' and with speeds in

6 App 9

7 See App 24

8 Broadband Stakeholder Group, *Third Annual Report*, p.49

9 App 23

10 App 22

excess of 128 kilobits per second (kb p/s)—less than three times faster than the 56 kb p/s available through narrowband. This criterion was subsequently modified to 258 kb p/s.[11] But more recently still, they have abandoned attempts to specify a speed and now define broadband as being always on, allowing voice and data services to be used simultaneously, and being faster than narrowband. This redefinition acknowledges that, because what constitutes broadband evolves over time, the speeds that may constitute broadband in one year will have ceased to do so in the future. However, it also means that, in the context where some countries have invested in infrastructure that can deliver speeds many times in excess of those available in the UK, international comparisons of, for example, the extent of roll-out or price, may not be on a like-for-like basis.[12] NTL were prevented from marketing an always on, 150 kb p/s service as 'high speed broadband' but seem to have found a market for it as 'entry level broadband'.[13] But the received industry definition, and that which consumers evidently seem to expect from broadband, is always on and 512 kb p/s speeds; though with the increasing availability of 1mb p/s products, this will inevitably be revised.[14]

9. This is not merely a semantic distinction. Speeds being rolled out in a number of other countries are considerably in excess of even the 512 kp p/s 'industry standard'. By contrast, we were told that some UK service providers are already bringing in measures to try to limit the volume of material downloaded each day because of constraints of available bandwidth.[15] Moreover, different speeds can prove a constraint on the range of services available. Speeds of 130 to 300 kb p/s offer services such as audio streaming and high speed, multi media web browsing. At 500 kb p/s, video conferencing becomes a possibility. Speeds of 1 megabits per second (mb p/s) allow for more sophisticated, three dimensional graphics and peer to peer working, and at 2 mb p/s real time films are available. Above 8 mb p/s, high definition television can be accessed.[16]

10. Average German and Dutch broadband speeds are 768 kb p/s; in Canada, 980 kb p/s; 1 to 2 mb p/s in the USA; and in Japan 12 mb p/s.[17] NTL claimed that there was, as yet, a limited demand for the sorts of high speed broadband products available abroad—higher speed packages are available in the UK, but at such a premium they are not a mass market product. But even accepting this, it would be mistaken to concentrate on rolling out broadband without regard to the speed of the service that is being rolled out: without the capacity to provide the most up to date services, the UK may find itself at a disadvantage economically.[18]

11 App 8

12 Oftel Wholesale Broadband Access Market (16 December 2003)

13 App 8; App 19; App 20

14 App 14

15 Q 13 (Consumers' Association)

16 *Ibid*.; App 8

17 App 14. BT has recently introduced a 1 mb p/s wholesale product.

18 As well as total bandwidth, speed is also dependent on 'contention ratios'—the number of users who are sharing it.

Acknowledgements

11. In the course of this inquiry we have heard oral evidence from AOL (UK), British Telecommunications plc (BT), the Consumers' Association (CA), the Department of Trade and Industry (DTI), Freeserve, NTL, Oftel, and the UK Competitive Telecommunications Association (UKCTA). We also received numerous written submissions—these are listed on page 28 below and those directly cited are appended to this Report. We are grateful to all those who contributed. It should be noted that, since the start of this inquiry, Oftel has been subsumed into a new industry regulator, Ofcom. References to 'the Regulator' in this report are to Oftel, unless otherwise stated.

2 Competition in the UK Broadband Market

The Retail Broadband Market

12. In aiming to make the UK the most competitive broadband market in the G7, the Government has established a set of indices, based around competition and choice in retail and infrastructure as well as price, by which this can be measured.[19] On the basis of these indices, the Government claims that the UK is now the third most competitive market for broadband in the G7.[20]

13. If judged by the number of internet service providers (ISPs) operating in the broadband retail market, the UK can clearly be considered competitive. A wide variety of companies is competing to provide the interface between the customer and network, from large internationally owned companies such as Freeserve and AOL, to much smaller ventures. The Internet Service Providers Association (ISPA), the ISP trade body, has almost 90 members, whilst, in its submission, Energis estimates that there are 200 in total.[21]

14. It is important to note, however, that competition should be judged not only by the number of suppliers, but also by the degree of product differentiation in the market; and in this area, we were told, there is far less choice, as the ISPs are constrained in what they can offer by the limited wholesale market. It is true that prices have fallen significantly over the last year—however, this has been as much the product of regulatory intervention as of market forces.

The Wholesale Broadband Market

15. For the reasons outlined in paragraphs 5 to 7 above, whilst other technologies can deliver broadband, at present they are too expensive, too limited in geographical coverage, have significant disadvantages or are at too early a stage of development to be serious rivals to the ubiquitous fixed line telephony network. Therefore, in practice, the mass broadband market is currently confined to ADSL via BT's telephony infrastructure, and to cable. Only BT is obliged to provide access to its network—the main cable operators, NTL and Telewest, are not deemed to be nationally dominant and able to act independently of the market. Consequently the regulator has no mandate to force them to make their network available to other service providers in the way that BT has had to. AOL has negotiated a deal to offer a broadband service over NTL's network, but this is a commercial arrangement between the companies: NTL is not under the same obligation as BT to make its network available on demand.[22]

16. BT allows access to its network through the sale of two wholesale packages—IPStream and DataStream. IPStream is BT's 'end to end' product. DataStream, by contrast, allows

19 App 9

20 Stephen Timms MP, Speech to the Broadband Stakeholder Group Conference (October 29 2003)

21 App 16; App 13

22 Q 222 (Oftel)

operators with their own networks the ability to transfer broadband traffic from BT's network onto their own. By enabling these other companies to pass any efficiency savings or innovations onto ISPs by offering wholesale alternatives to IPStream, DataStream thus offers the potential for greater price competition and product differentiation in the wholesale market. This, in turn, can enable the ISPs to offer a greater variety of broadband products in the retail market.

17. Prior to June 2002, BT only offered an IPStream, 'end to end', wholesale product but the company was forced by the regulator to introduce the DataStream product to bring about an increase in competition and diversity in the wholesale market and, therefore, promote competition in the retail market.[23] To date, however, DataStream has failed to have the competitive impact that had been hoped for. Its failure to do so was attributed to the different regulatory regimes that IPStream and DataStream are subject to, and the potential for BT to exploit this and thus retain customers on its end-to-end product.[24]

18. The price of access to BT's network via DataStream is set by the Regulator. In the narrowband and voice telephony markets, the access price is set on a 'cost plus' basis.[25] But in the broadband sector, the price for network access, via DataStream, is calculated on a 'retail minus' basis.[26] Using the retail minus method produces a higher price for access than the cost plus method would.

19. The justification that the Regulator gave for opting for the higher access charge was to encourage BT to continue to invest in the improvement and expansion of its network. But in addition to this, the Regulator hoped that the more generous pricing method would encourage investment in alternative networks that may be rolled out in the near future, such as satellite, fixed wireless, or broadband via powerlines.[27] If DSL prices were driven down too far, there would be no incentive to invest in alternative methods of delivering broadband. Furthermore, the Regulator has argued that 'retail minus' allows greater margin for error in implementing regulatory decisions. Any errors in calculating cost plus pricing might have serious implications for BT's continued investment in broadband roll-out; retail minus pricing amounts to erring on the side of caution.[28]

20. In their written evidence, Energis claimed that Oftel's decision to apply retail minus methodology to pricing DataStream was based on flawed assumptions about the level of risk faced by BT in its broadband roll-out; the lower prices produced by a cost plus approach would still have allowed BT scope for broadband roll-out given the scale of investment required to offer an alternative network and BT's inherited phone network. Others have also suggested that a shift to cost plus pricing would be necessary to reduce prices sufficiently for DataStream to take off: "AOL's recent experience is that there is insufficient margin in the supply of DataStream for BT's rivals to effectively compete with

23 App 21 (Oftel)

24 App 1; App 14

25 Where the price is set to reflect the cost of providing the service to the customer, with a mark up to allow for a return on investment.

26 Where the cost of interconnection is calculated by subtracting from the retail price those costs which BT no longer incurs in supplying the product wholesale.

27 Oftel, *Review of the Wholesale Broadband Access Market* (April 2003), paras 4.42 to 4.50

28 Oftel, *Wholesale Broadband Access Market* (December 2003), para 4.55

BT's own end-to-end IPStream product. It is our concern that the lack of a sufficient commercial margin will make it impossible for BT's rivals to price competitively against IPStream".[29]

21. We have reached no conclusion on the merits of cost plus pricing against those of retail minus pricing in the context of the British broadband market, though we do note that cost plus pricing is usually applied in markets where there is already potential wholesale competition.[30] We would naturally support any effort to ensure that investment in the existing network is sustained and that the roll out of other, alternative means to deliver broadband is encouraged—theoretically this can, after all, deliver the competition in wholesale broadband that was the object of the introduction of DataStream. However, whilst they should be encouraged, these alternative means of delivering broadband will not be sufficiently extensive to provide a genuine, nationwide alternative to BT's ADSL network, at least in the medium term, so the only immediate prospect of widespread wholesale competition, and the benefits it can bring, comes from DataStream; and the incentives for investment in the future need to be balanced against the desire to introduce more far-reaching competition into the market.

22. While the price of DataStream is set by the regulator, BT has much greater freedom in setting the price of IPStream.[31] We were told that this had created uncertainty about the relative costs of the two products which has led ISPs to be wary about committing themselves to DataStream: companies are deterred by the risk that BT might, in the future, make substantial reductions in the price of IPStream and thus render DataStream-based products even more uncompetitively priced.[32] Lack of confidence in the regulatory regime is clearly compromising the potential of DataStream to introduce competition into the wholesale market.

23. It was suggested to us that DataStream has been further undermined by the charges that BT makes for migrating customers from IPStream-based broadband products to DataStream-based products. With IPStream the dominant wholesale product, the majority of ISPs are currently selling retail broadband based on it. We were told that many ISPs would like to use DataStream but BT currently charges £50 to move a customer from IPStream to DataStream. This, it was suggested to us, is a serious deterrent to take-up of DataStream-based broadband. We heard complaints that the scale of the charges was not justified: AOL claimed that this was a result of BT's inefficiency—customers are transferred manually. In their written submission, Tiscali estimates the true cost of migration to be £5 rather than the £50 BT charge.[33] The Regulator indicated to us that migration charges are to be looked at, albeit in the context of an overall market review. **We welcome this review. There is little incentive for BT to reduce migration charges without regulatory pressure as the result is likely to be an increase in custom for its competitors.**[34]

29 App 1; see also App 13, App 14 and App 26

30 App 1

31 *Ibid.*

32 Q 39 (AOL)

33 Qq 33 and 58; App 26

34 Q 201. See also Oftel Review of the Wholesale Broadband Access Market April 2003.

24. **As yet DataStream has failed to deliver the competition in the wholesale broadband market, and, in turn, in the retail broadband market, that had been hoped of it. There is evidently a demand for DataStream—from our evidence, it is clear that ISPs would like the freedom to purchase wholesale broadband from a range of suppliers and to reduce their reliance on BT. However, they lack the confidence that, under current conditions, it can provide a commercially viable alternative to IPStream. The danger of this is that, because of a lack of confidence rather than a lack of demand, there is insufficient uptake of DataStream and it is ultimately allowed to wither.**

25. **Whilst a low price for wholesale broadband products is clearly desirable, in this instance it seems that the relative price of DataStream is as significant. It has been suggested that the differential between IPStream and DataStream is not sufficient, especially if the high level of migration charges is taken into account. However, perhaps as damaging has been the lack of confidence that any differential can be sustained, and that the current regulatory regime can prevent cuts in the price of IPStream from undermining DataStream's commercial viability.**

26. **We are not in a position to gauge the validity of these complaints. However, with DataStream manifestly failing to deliver the outcomes that it was designed to achieve, clearly a careful review of the wholesale regulatory regime is required. It seems that the Regulator is aware of this: in addition to the general broadband market review initiated by Oftel (which will be completed by Ofcom) [35] a wholesale market review is also being conducted in which the transparency of the regulatory process, amongst other things, has been acknowledged as problematic.[36] It is imperative that those looking to invest in the market have confidence in the robustness of the regulatory regime. Without wishing to anticipate the detail of the ultimate outcomes of the reviews, it is vital that this matter is resolved. It may be that the advent of Ofcom gives the opportunity to re-establish confidence in the regulatory regime where currently it is lacking.**

Local Loop Unbundling

27. DataStream enables telecom companies to take broadband traffic onto their networks whilst still, for the most part, relying on BT's 'local loop' of copper wire—the connection that links individual homes and business to the local exchange—to provide the connection to broadband users. An alternative approach to introducing competition into the ADSL market has been to open up these local loops to rival operators through local loop unbundling (LLU). LLU allows competitors, or groups of competitors, to compete with BT in local rather than national networks and, in conjunction with DataStream, could reduce the overall reliance on BT.

28. When LLU was first floated by Oftel in 1998 there was considerable enthusiasm for it, with many companies expressing an interest in entering the market. However, in March 2001 the previous Committee reported that progress was already disappointing, and the situation has not improved since.[37] Of the 40 companies who initially expressed an interest

35 Q 196 (Oftel)

36 Oftel, *Wholesale Broadband Access Market* (16 December 2003)

37 Trade & Industry Select Committee, *Local Loop Unbundling,* Sixth Report of Session 2000–01, HC90, paras 21–22 and 50.

in establishing a presence in BT's unbundled exchanges, few remain in the market and the percentage of unbundled exchanges is low. Many of the companies may have lacked the resources to successfully establish themselves in a market with high start-up costs. Others have no doubt been deterred by the slower than hoped for uptake of broadband by the general public.[38] However, BT has clearly been less than co-operative in the past and an OECD report concluded that it 'has found practical ways to resist policy'.[39] This corroborates NTL's argument that 'BT managed to inject enough delay into the process [of LLU] to prevent entry ahead of its own broadband product launch'.[40]

29. Broadband subscriptions have started to rise relatively fast, after a slow start, and yet the pace of LLU in the UK remains very slow: at the end of August 2003, only 7100 lines had been unbundled, compared with more than 5000 each month in France or 200,000 in all.[41] With so few companies remaining in the UK market, this is not particularly surprising. However, we heard evidence that there are a number of potential entrants who are being deterred from investing by the high cost that BT charges to unbundle exchanges and by uncertainty about future prices.[42]

30. Contrary to Oftel's comments that LLU charges are not 'wildly out of line' with those in similar countries,[43] BT, it seems, charges substantially more for allowing its exchanges to be unbundled than other incumbent telecoms companies. Freeserve has supplied figures which show that the cost of unbundling in the UK is significantly higher than in other EU countries. For full unbundling, set-up fees charged by BT are €125.72 whereas they are as low as €20.00 in Spain, and €33.89 in the Netherlands, for example. Continuing, monthly fees are €14.52 in the UK, against €8.30 in Italy and €10.50 in France (which has seen a recent surge in LLU activity).[44] Energis claims that '[a]t current prices, LLU is not a viable method through which to supply mass-market wholesale DSL broadband services'.[45] BT attributes the higher cost to the regulatory regime which requires strict accounting separation.[46]

31. But, in addition to the high costs of LLU, uncertainty about future wholesale prices has undermined confidence in tying up significant quantities of capital in an area where the returns are so unpredictable: even if LLU prices were to drop sufficiently to make it a theoretically viable commercial proposition, if wholesale prices were to be cut significantly in the future, this could render LLU uncommercial once more.[47] Consequently, whilst a company such as Freeserve may be relatively enthusiastic about the prospects for LLU in

38 *Ibid.*

39 OECD, *Regulatory Reform in the Telecoms Industry*, Paris (2002), p.61

40 App 19

41 App 14; Q 83 (Freeserve)

42 Qq 83–87, App 13

43 Q 195

44 App 15

45 App 13

46 App 4; Q 245 (BT)

47 App 13

the UK were prices to drop, Energis consider the sector too dependent on future regulatory decisions in which they evidently lack confidence.[48]

32. **The Regulator told us that LLU is being re-examined, albeit in the context of an overall market review, and implied that this is something that had not been properly addressed before now.**[49] **If LLU is still considered to be a valuable way of reducing BT's dominance over ADSL—and it seems to us that there is still a desire for it to be made to work on the part of both the Regulator and the companies in the sector—then BT's costs, which provide the basis for the cost plus pricing methodology used for LLU, need to be looked at.** Evidence from countries such as France seems to demonstrate that if the price is low enough, then firms will enter the market, and it seems that BT's explanation of its higher costs has yet to convince those firms considering entering the sector. **But even if costs were to fall, once again uncertainty about the regulatory regime governing wholesale pricing may deter companies from investing the heavy sums required for LLU.**

Break-Up of BT

33. At the moment, BT claims to have a system of 'Chinese walls' between its retail and wholesale arms, ensuring that the former is not being given an unfair advantage over the latter, with, it claims, its retail arm being treated the same as its competitors.[50] Oftel admitted that BT had not been sufficiently transparent in this matter to satisfy its retail competitors that its retail and wholesale sections were not collaborating unfairly.[51] Given this, we considered whether forcing BT to separate its retail and wholesale activities into different companies, along the lines seen in a number of other post-privatisation utility markets, might be an effective way of helping to achieve the Government's targets of broadband extensiveness and competitiveness.

34. Oftel considered that such a forced separation would be premature. Whilst it would allay the fears of ISPs that BT's retail arm is receiving favourable treatment by its wholesale arm, the disruption involved would be considerable and also run the risk of ending BT's incentive to continue to invest in the network. Furthermore, rather than remove the need for regulation, it would merely shift it.[52]

35. **We agree that the potential gains from an enforced separation between BT's wholesale and retail activities do not justify the upheaval involved. Such a split might satisfy rival ISPs that they were being treated fairly but a sufficiently robust regulatory system and a successful DataStream product would also achieve this, with less disruption. Moreover, it is not clear how separation would help achieve the Government's goals of a more competitive and extensive market for broadband, as it is not evident that it would contribute to either. In itself, separation of wholesale and retail does not contribute to wholesale competition; it merely ensures that ISPs are**

48 *Ibid.* See also App 19.

49 Qq 198 and 200

50 Q 258

51 Q 214

52 Q 217 (Oftel)

more confident that a significant competitor, BT Retail, is being treated in the same manner that they are. And it contributes nothing to the broadband roll-out process which, it was suggested to us, may even be threatened by such a strategy if separation were to reduce network investment.[53] On balance, the disruption currently outweighs any potential benefits which are only those that an efficient regulatory regime should already be providing.

36. **The Government has set targets for both the competitiveness and the extensiveness of the broadband market. However, in the short term there may be a trade-off between these goals, and focussing on rolling out broadband may be at the expense of competition.[54] We agree that the Government is right to aim to make the market both competitive and extensive, but it is important that both it and the Regulator make clear which is to take priority in the immediate future. We note at this stage that if the priority is towards increased competitiveness then there will be a greater role for the public sector to play in ensuring extensiveness.**

53 Q 215 (Oftel)

54 App 21

3 Broadband Roll-Out and Take-Up

37. The UK came relatively late to broadband and for a period the figures, both for broadband availability and for take-up, were disappointing in comparison with those for other countries in Europe or the G7. However, the Government has targeted broadband coverage for all households in the UK and BT, too, claims to be aiming for total coverage.[55]

38. Broadband via ADSL is now available to 80% of UK households, predicted to rise to 90% within a year if outstanding trigger levels are met.[56] Broadband via cable is available to around 45% of UK households, though these are generally in areas where ADSL is also available and so, whilst contributing to competition, it has little impact on coverage. Other technologies may eventually become widely available to deliver broadband to a mass market and to provide genuine network competition to BT and to the cable companies. 3G mobile phones are now being marketed heavily, though roll-out will be concentrated on areas already well-served by cable or ADSL; and whilst satellite broadband is an established technology, it may soon become available at a price which might allow it to become a mass-market alternative.[57] However, it seems that widespread network competition may be some way in the future. The Regulator does not consider these alternative broadband technologies will provide significant competition to BT and the cable companies in the near future: in its review of the wholesale broadband market it noted that "[t]he Director considers that these alternative broadband technology access methods are medium to longer-term prospects that are unlikely to have a significant effect during the time scale of this market review".[58]

39. Whilst 80% of households now have access to cable or ADSL broadband, those areas remaining, which are predominantly rural, will become increasingly difficult to reach. Cable companies are concentrating on bringing broadband to more areas covered by the existing cable network rather than extending the network geographically.[59] Meanwhile the cost of enabling BT's remaining exchanges becomes progressively higher as roll-out extends to more remote areas. To provide broadband coverage to 90% of households, the target for the end of 2004, will require it to have enabled only 48% of its exchanges. Even allowing for the technological improvements that reduce the cost of enabling each exchange, the per capita cost of rolling out ADSL broadband to the remaining 10% of the population will be far in excess of that for the other 90%.

40. BT has set trigger levels for many of its remaining unenabled exchanges—residents of the areas covered by those exchanges can register an interest in receiving broadband ADSL. Once the trigger level is reached, BT will enable that exchange. There are many exchanges, however, that have had no trigger levels set on the basis that they cannot be enabled economically.

55 HC Deb 845W (15 January 2004). Broadband is of course available via satellite to almost the whole country but its price has prevented it from being a mass market product in the past.

56 App 2. See below, paragraph 40.

57 App 24

58 Oftel, *Wholesale Broadband Access Market* (16 December 2003), para 3.60

59 Q 231 (NTL)

41. The desire for broadband has given rise to a large number of local community initiatives designed either to raise sufficient interest to achieve the trigger levels required to enable the local exchange, or, where this is not possible or where no trigger level has been set, to bring in broadband by other means—we have had specific examples of this in Cumbria and Yorkshire drawn to our attention.[60]

42. It was also suggested to us that BT has had a tendency to 'miraculously' reconsider its decision to rule a particular exchange as unviable and has set or lowered trigger levels where these initiatives show signs of being successful.[61] Whilst this ultimately means that the community receives its broadband connection, this behaviour undermines the commercial prospects of companies who are prepared to investigate ways of bringing broadband to more remote communities and, if deliberate by BT, displays a cynical manipulation of the market.

The Role of Government and the Public Sector

43. Countries throughout the world have made broadband a matter of public policy focus. Governments in countries such as Japan and South Korea have been very proactive in encouraging the roll-out of a high bandwidth network. In Germany, Deutsche Telecom has been allowed a free rein in broadband in return for rolling out in the more remote (and less profitable) areas of the country. Approaches even differ within the UK, with Northern Ireland putting out to tender the contract for providing broadband across the country.[62] Despite the high profile given to broadband in the UK, the Government has been less directly involved in the roll-out of broadband and has instead relied on BT and interventions by the Regulator to achieve its target of the most extensive and competitive broadband market in the G7; in their submission, BT cited research showing that the UK had committed less than $5 per capita to broadband compared with $25 in France and $95 in Japan and concluded that, as a consequence, broadband in the UK was taking a "slower burn route".[63]

44. The DTI gave the impression that, whilst relying on market forces to roll out broadband might mean that really extensive coverage took longer to achieve, it would be a better, more competitive market that emerged as a result.[64] AOL also suggested that competitive markets are the best way to achieve broadband coverage that reflects consumer needs.[65] And NTL made the point that competition from cable has been the key force for driving BT's broadband innovations and roll-out.[66] Yet, whilst we do not doubt the benefits of a truly competitive broadband market, in reality there is presently little or no competition in most of the country, so roll-out is dependent on BT's willingness to enable its local exchanges.

60 App 7; see also App 17

61 App 7; App 17

62 App 18

63 App 2

64 Q 129

65 App 1

66 App 19

45. Regional Development Agencies (RDAs) have been active in schemes to increase the availability and take-up of broadband in their regions through the provision of advice and grants.[67] The ACTNOW project in Cornwall is a much cited example of partnership between the RDA, local government and the Further Education sector in the county, using its European Objective 1 funds, to provide broadband to an area of dispersed and low density population.[68]

46. The Government has established Regional Aggregation Bodies (RABs) as a means to drive broadband roll-out into new areas. Under RABs, public sector demand for broadband services in a locality—from schools, hospitals, libraries, etc—is combined so that they can approach providers jointly. Not only does this hold the prospect of savings, by ensuring the provider with a level of guaranteed demand to justify the cost of the 'backhaul' (connecting the locality back to the backbone network), it also lowers the risk involved in providing broadband to areas where it has been unavailable. Whilst this aggregated public sector demand for broadband does not contribute to meeting BT trigger levels, with the cost of backhaul covered, it should be possible for the broadband supplier to be able to provide the surrounding community with broadband at little extra cost.

47. RABs will not, however, be able to ensure 100% coverage and at some point, if this is the ultimate target, further measures will have to be considered. As broadband becomes more widely available and more heavily used, those areas where it remains unavailable risk increasing marginalisation and the emergence of a 'digital divide' becomes a threat. Such concerns led us to consider the calls for the imposition of a Universal Service Obligation (USO) for broadband.

48. **It may be that broadband becomes so ubiquitous amongst those members of the population able to access it that those who cannot become genuinely excluded. Under such circumstances a USO might be considered. But with the market at such an early stage of development and with broadband use still confined to a small minority of internet users, albeit a growing minority, it is far too early to judge whether this will ultimately be necessary. It is also not yet clear how widely broadband can be rolled out without resort to a USO.**[69]

49. **With the Government's unwillingness to commit large quantities of public money to the process, the continued roll-out of broadband is reliant on commercial impetus, perhaps facilitated by interventions such as the RABs or work by the RDAs. Under such circumstances it is difficult to set concrete targets for roll-out as it is not clear where the point beyond which broadband can never be rolled out profitably will be**. Whilst BT has committed itself to 100% UK broadband coverage,[70] it also told us that there are areas of the country where it will never be possible to provide broadband on purely commercial grounds and that 'partnership' with the public sector is required. **The DTI, too, conceded that, at some point, further roll-out will be dependent on "public sector bodies bringing something to the table".**[71] **The difficulty will be in judging when that point has been**

67 App 25; App 11

68 App 2; App 9

69 App 8; App 10

70 See 'All of BT on broadband by 2005', www.bbc.co.uk (17 November 2003)

71 Q 138

reached as, in the absence of competition, there will clearly be an incentive for BT to slow the progress of broadband roll-out in future in order to maximise any anticipated public subsidy. It is to be hoped that local and regional efforts from public bodies and communities alike can prevent this from happening and can ensure that broadband can be made available to the maximum number of people before more direct subsidy or a USO need be considered.

Broadband Take-Up

50. Whilst public policy efforts have been largely focussed on ensuring broadband availability, at least of equal importance is ensuring that those who can access it use it. There is plenty of scope for increasing the numbers that use it: at the moment, with some 80% of the population able to access broadband, and with around 50% of households on-line, broadband subscriptions stand at approximately 3,021,000 or 10% of internet households.[72]

51. Subscriptions are rising quite rapidly after a late start and this has led to confident predictions about future take-up compared with other European or G7 countries. With new subscriptions currently standing at 40,000 a week it is to be hoped that the UK market is gaining some momentum. There is no room for complacency, however; as BSG suggest, the early adopters of broadband have been the "easy to reach 'low hanging fruit' who, by and large, understand why they want broadband",[73] so it cannot be taken for granted that expansion will continue at this rate.

52. The price of broadband has fallen substantially since its introduction and clearly this will have provided a stimulus to take-up.[74] But take-up has been faster in countries where broadband is priced at a similar level to the UK, so cost is clearly not the only factor in expanding the market. It seems that UK consumers have been slower to recognise the benefits that broadband can offer. Ironically, it may be the competitive nature of the UK narrowband market, and in particular the wide availability and popularity of unmetred access products ('Flate Rate Internet Access Call Origination' or FRIACO), that have delayed take-up:[75] even the Chief Executive of one of the large ISPs we spoke to has not felt the need to subscribe to his own broadband product.[76] Whilst those narrowband subscribers who are already prepared to pay for unmetred access must be seen as a natural constituency for an early shift to broadband, unless they are convinced that broadband offers significant benefits to them, they will not migrate.[77]

53. Business users do seem to see value in migrating to broadband. A study of its members by the British Chambers of Commerce (BCC) found that 39% now had broadband, an increase of more than 100% on the previous year's survey. Of those BCC members that do not use it, 60.9% think they will be pressured by their customers and suppliers into

72 Oftel, *Internet & Broadband Brief* (December 2003)

73 App 5

74 App 21

75 34% of internet homes currently have unmetred access: Oftel, *Internet & Broadband Brief* (December 2003)

76 Q 96

77 J. Crabtree & S. Roberts, *Fat Pipes, Connected People: Rethinking Broadband Britain,* iSociety (October 2003)

adopting it within five years, and 46% would like to access it but are based in areas where it is not available. [78]

54. This has not been the case to the same extent amongst domestic consumers. An iSociety study of broadband adoption cites Oftel research that concluded that many internet users found the always-on facility and faster connection that broadband offers, in themselves, not to be worth the extra expense.[79] iSociety went on to identify a number of 'microbarriers' that were preventing people migrating from narrowband to broadband. This, of course, assumes that it is natural to shift to broadband and that this would occur were it not for these barriers. It might be more instructive to consider why narrowband users might actually want to migrate to broadband.

55. **Government has a role in helping to inform businesses and individuals of the potential benefits that broadband can give them, and ISPs can evidently do more to create demand for their product. For mass take-up to be achieved people will have to be given more pressing reasons than extra speed and a permanent connection to change to broadband—in other words, not only things they can do faster with broadband but things they cannot do without it. At the moment it seems that the extra uses that broadband can offer over narrowband are not sufficiently attractive to the average, non-specialist, internet users: activities such as on-line gaming and filesharing are confined to a relatively small proportion of the population and will not be the factors that stimulate the development of a mass market for broadband.**

56. **Clearly, improved content—content that makes use of the faster speeds available to deliver new services—is required to drive take-up of broadband; and as this becomes available, and the number of users increases, so this in turn will drive the development of further improved content.**[80] **Government itself can contribute to this process by improving its provision of services on-line and developing websites which are genuinely interactive rather than merely replicating paper publications and forms for downloading.**

57. There are already examples of dramatically different services being delivered via broadband: in countries such as Japan and South Korea, media streaming services are making television programmes and music available on demand. The difficulty is that the speeds available in Japan and South Korea are considerably in excess of those available in the UK and are set to become even faster as fibre networks are laid down. Whilst the speeds available in the UK at commercially viable prices are increasing (1MB p/s is becoming increasingly available at present) there is little prospect of there being sufficient bandwidth to offer these sorts of services here to the mass market in the foreseeable future. Indeed, whilst engineers have succeeded in improving the amount of information that can be delivered along the existing network, should take-up continue to rise rapidly, contention ratios will worsen and the broadband service that many receive may actually deteriorate. With little prospect of much faster speeds becoming available in the UK, continued take-up may ultimately have to rely on more modest improvements in content and a willingness

78 British Chambers of Commerce, *Business Broadband: A BCC Survey* (September 2003)

79 J. Crabtree & S. Roberts, *Fat Pipes, Connected People: Rethinking Broadband Britain,* iSociety (October 2003), p.15

80 Though the Broadband Stakeholder Group (BSG) note that without reliable means to pay for goods and services on-line and adequate means to protect copyright, incentives to develop new content could be undermined: App 5.

on the part of internet users to pay a premium to do the same sorts of things faster and more frequently.

58. The broadband strategies adopted by Japan and South Korea offer a contrast to that of the UK. The Japanese and South Korean governments have invested heavily in a network that offers potential speeds far in excess of those currently required—even some of the existing mass market offerings are proving too fast for many people's computers to process—seeking to gain a competitive edge by anticipating future bandwidth needs.[81] In the UK, there has been much more hesitancy about committing significant public sums and a reluctance to address future needs rather than existing requirements.

59. **For take-up of broadband to rise in the UK, potential users need to be convinced of the benefits that they can gain from it. This will require a continued increase in the quality of information, services and products that can be accessed via it. Content cannot be entirely separated from infrastructure matters and to ensure that this content continues to develop, the speeds that constitute broadband and are widely available will have to steadily improve as well. As yet, it is not clear that the market will deliver this: while companies are developing higher speed products, much of the growth has been in the cheaper, lower speed products. However we are not advocating the type of public investment in high speed infrastructure seen elsewhere in the world. The Government's role is to facilitate the roll-out of broadband so that it is available to those who can benefit and to make certain that the regulatory framework ensures that commercial decisions by private companies are aligned with the wider economic and social needs of the country.**

81 'Japanese Broadband Internet Market' http://www.japaneselifestyle.com.au (8 July 2003)

Conclusions and recommendations

Competition: alternative technologies

1. We would naturally support any effort to ensure that investment in the existing network is sustained and that the role out of other, alternative means to deliver broadband is encouraged. However, these alternative means of delivering broadband will not be sufficiently extensive to provide a genuine, nationwide alternative to BT's ADSL network, at least in the medium term. (Paragraph 21)

Competition in the wholesale market

2. The only immediate prospect of widespread wholesale competition, and the benefits it can bring, comes from DataStream, a product that enables other network owners the ability to transfer broadband traffic from BT's network onto their own. (Paragraph 21)

3. However, as yet DataStream has failed to deliver the competition in the wholesale broadband market, and, in turn, in the retail broadband market, that had been hoped of it. There is evidently a demand for DataStream—from our evidence, it is clear that ISPs would like the freedom to purchase wholesale broadband from a range of suppliers and to reduce their reliance on BT. However, they lack the confidence that, under current conditions, it can provide a commercially viable alternative to BT's other product, IPStream, which uses BT's own network end-to-end. The danger is that, because of a lack of confidence rather than a lack of demand, there is insufficient uptake of DataStream and it will ultimately be allowed to wither. (Paragraph 24)

Wholesale Competition: Access charges

4. As far as the access prices charged by BT to other network companies for DataStream are concerned, we have reached no conclusions on whether the Regulator should apply cost plus pricing or retail minus; though we do note that cost plus pricing is usually applied in markets where there is already potential wholesale competition. (Paragraph 21)

Wholesale Competition: Migration charges

5. We welcome the Regulator's review of the charges imposed by BT for 'migrating' customers from IPStream-based broadband products to DataStream-based products. There is little incentive for BT to reduce migration charges without regulatory pressure as the result is likely to be an increase in custom for its competitors. (Paragraph 23)

Wholesale Competition: Price differentials

6. Whilst a low price for wholesale broadband products is clearly desirable, in this instance it seems that the relative price of DataStream is as significant. It has been

suggested that the differential between IPStream and DataStream is not sufficient, especially if the high level of migration charges is taken into account. However, perhaps as damaging has been the lack of confidence that any differential can be sustained, and that the current regulatory regime can prevent cuts in the price of IPStream from undermining DataStream's commercial viability. (Paragraph 25)

Wholesale Competition: Review of regulation

7. With DataStream failing to deliver the outcomes that it was designed to achieve, clearly a careful review of the wholesale regulatory regime is required. It seems that the Regulator is aware of this; in addition to the general broadband market review initiated by Oftel (which will be completed by Ofcom) a wholesale market review is also being conducted encompassing, amongst other things, the transparency of the regulatory process. Those looking to invest in the market need to have confidence in the robustness of the regulatory regime. Without wishing to anticipate the ultimate outcome of the reviews, we consider it vital that this matter is resolved. It may be that the advent of Ofcom gives the opportunity to re-establish confidence in the regulatory regime where currently it is lacking. (Paragraph 26)

Competition: Local Loop Unbundling

8. The Regulator told us that LLU is being re-examined, albeit in the context of an overall market review, and implied that this is something that had not been properly addressed before now. If LLU is still considered to be a valuable way of reducing BT's dominance over ADSL—and it seems to us that there is still a desire for it to be made to work on the part of both the Regulator and the companies in the sector—then BT's costs, which provide the basis for the costs plus pricing methodology used for LLU, need to be looked at. But even if costs were to fall, once again uncertainty about the regulatory regime governing wholesale pricing may deter companies from investing the heavy sums required for LLU. (Paragraph 32)

Separation of BT's wholesale and retail arms

9. The potential gains from an enforced separation between BT's wholesale and retail activities do not justify the upheaval involved. It is not clear how separation would help achieve the Government's goals of a more competitive and extensive market for broadband. In itself, separation of wholesale and retail does not contribute to wholesale competition; it merely ensures that ISPs are more confident that a significant competitor, BT Retail, is being treated in the same manner as they are. And it contributes nothing to the broadband roll-out process which, it was suggested to us, may even be threatened by such a strategy if separation were to reduce network investment. On balance, the disruption currently outweighs any potential benefits which are only those that an efficient regulatory regime should already be providing. (Paragraph 35)

Government targets

10. The Government has set targets for both the competitiveness and the extensiveness of the broadband market. However, in the short term there may be a trade-off between these goals, and focussing on rolling out broadband may be at the expense of competition. We agree that the Government is right to aim to make the market both competitive and extensive, but it is important that both it and the Regulator make clear which is to take priority in the immediate future. We note at this stage that if the priority is towards increased competitiveness then there will be a greater role for the public sector to play in ensuring extensiveness. (Paragraph 36)

Commercial roll-out of broadband

11. With the Government's unwillingness to commit large quantities of public money to the process, the continued roll-out of broadband is reliant on commercial impetus, perhaps facilitated by interventions such as the Regional Aggregation Bodies or work by the Regional Development Agencies. Under such circumstances it is difficult to set concrete targets for roll-out as it is not clear where the point beyond which broadband can never be rolled out profitably will be (Paragraph 49)

Government intervention in roll-out

12. The DTI, conceded that, at some point, further roll-out will be dependent on "public sector bodies bringing something to the table". The difficulty will be in judging when that point has been reached as, in the absence of competition, there will clearly be an incentive for BT to slow the progress of broadband roll-out in future in order to maximise any anticipated public subsidy. It is to be hoped that local and regional efforts from public bodies and communities alike can prevent this from happening and can ensure that broadband can be made available to the maximum number of people before the Government has to resort to direct subsidy. (Paragraph 49)

Roll-out: Universal Service Obligation (USO)

13. It may be that broadband becomes so ubiquitous amongst those members of the population able to access it that those who cannot become genuinely excluded. Under such circumstances a USO might be considered. But with the market at such an early stage of development and with broadband use still confined to a small minority of internet users, albeit a growing minority, it is far too early to judge whether this will ultimately be necessary. It is also not yet clear how widely broadband can be rolled out without resort to a USO. (Paragraph 49)

Encouraging take-up of broadband

14. Take up of broadband, though increasing fast recently, is still modest overall. Government has a role in helping to inform businesses and individuals of the potential benefits that broadband can give them, and ISPs can evidently do more to create demand for their product. For mass take-up to be achieved people will have to be given more pressing reasons than extra speed and a permanent connection to

change to broadband—in other words, not only things they can do faster with broadband but things they cannot do without it. At the moment it seems that the extra uses that broadband can offer over narrowband are not sufficiently attractive to the average, non-specialist, internet users: activities such as on-line gaming and filesharing are confined to a relatively small proportion of the population and will not be the factors that stimulate the development of a mass market for broadband. (Paragraph 55)

15. Clearly, improved content—content that makes use of the faster speeds available to deliver new services—is required to drive take-up of broadband; and as this becomes available, and the number of users increases, so this in turn will drive the development of further improved content. Government itself can contribute to this process by improving its provision of services on-line and developing websites which are genuinely interactive rather than merely replicating paper publications and forms for downloading. (Paragraph 56)

Broadband speeds

16. To ensure that the quality of information, services and products available via broadband continues to develop, there needs to be a steady improvement in the availability of higher broadband speeds. As yet, it is not clear that the market will deliver this: while companies are developing higher speed products, much of the growth in take-up has been in the cheaper, lower-speed products. However, we are not advocating the type of public investment in high speed infrastructure seen elsewhere in the world. The Government's role is to facilitate the roll-out of broadband so that it is available to those who can benefit and to make certain that the regulatory framework ensures that commercial decisions by private companies are aligned with the wider economic and social needs of the country. (Paragraph 59)

Formal minutes

Tuesday 3 February 2004

Members present:
Mr Martin O'Neill, in the Chair

Mr Roger Berry	Mr Lindsay Hoyle
Richard Burden	Linda Perham
Mr Nigel Evans	Sir Robert Smith

The Committee deliberated.

Draft Report (UK Broadband Market), proposed by the Chairman, brought up and read.

Ordered, That the Chairman's draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 59 read and agreed to.

Summary agreed to.

Resolved, That the Report be the Second Report of the Committee to the House.

Ordered, That the Chairman do make the Report to the House.

Ordered, That the provisions of Standing Order No. 134 (Select Committees (reports)) be applied to the Report.

Ordered, That the Appendices to the Minutes of Evidence taken before the Committee be reported to the House.

[Adjourned till Tuesday 10 February at 9.00 am

Witnesses

Tuesday 11November 2003 (morning)

Tuesday 11 November 2003 (afternoon)

List of written evidence

List of unprinted written evidence

Additional papers have been received from the following and have been reported to the House but to save printing costs they have not been printed and copies have been placed in the House of Commons library where they may be inspected by members. Other copies are in the Record Office, House of Lords and are available to the public for inspection. Requests for inspection should be addressed to the Record Office, House of Lords, London SW1. (Tel 020 7219 3074) hours of inspection are from 9:30am to 5:00pm on Mondays to Fridays.

Advanced Business Facilities Limited (ABFL)
British Phonographic Association
Broadband Industry Group
Colloquium
Country Land and Business Association
D-C-S.com and Infocube.net
Digital Content Forum
DSL Forum
EADS Astrium Ltd
Dr John E Harris
Institute for Management Information Systems
Marconi Corporation plc
Malcolm Pym
Telefonica UK Ltd
Telewest Communiations plc
THUS plc
Robert Walton