

Open Networks

A solution to Britain's Broadband Problems?

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About The Author

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Summary

Britain's Broadband market has some serious problems. This article is a response to this situation, and has three purposes.

1. To summarise those problems.
2. To examine what has lead to the current situation.
3. To suggest a pair of long term solutions.

The Broadband Problems

Extreme delays in rolling out broadband services, particularly ADSL, have left Britain lagging notably behind other countries in terms of both availability and the speed of services offered. In March last year OFTEL reported that the UK was 'last' in terms of progress with ADSL rollout compared to a variety of major OECD nations¹. In October 2000, a survey noted that a home in France or the US is six times as likely to be broadband enabled as one in the UK, and that in Germany it is three times as likely². A recent OFTEL study shows that average broadband costs are the highest in Europe³. The UK also suffers in terms of the breadth of bandwidth offered. Parts of America are already benefiting from the DSL technology two generations ahead of ADSL, working at up to 7Mbit/s, whilst in Sweden and Denmark services are available from private sector firms, which are 20 times faster than those available in the UK, for less than half the price⁴.

Table: Cost and speed of various bandwidth providers in different countries.

Provider	Country	Mbit/s	Cost at today's exchange rates
US West	USA	7.1	£172.597 per month plus £47.63 installation
US West	USA	4.4	£103.57 per month plus £47.63 installation
Bredbandsbolaget	Sweden	10	£14.02 per month + £140 installation
BT business	UK	2	£159.99 + VAT per month + £260 installation
BT domestic	UK	0.512	£40 per month + VAT + £150 installation

¹ <http://www.oftel.gov.uk/competition/dsl0400.htm>

² <http://www.zdnet.co.uk/news/2000/41/ns-18536.html>

³ <http://www.oftel.gov.uk/research/2001/dslb0101.htm>

⁴ <http://www.bredbandsbolaget.se/eng/node85.asp>

Indeed, the UK's failure has been so acute that the very question of whether we even have broadband at all has been raised. The new Communications White Paper's own annex defines 'broadband' as 2 megabit transfers per second⁵, yet there is no such service for residential customers available anywhere in Britain at the time of writing⁶. The costs, even for businesses, of such a service are over £2000 per year for ADSL, and over £20,000 per year for synchronous access via a leased line, where such services are available. Giant ISP America Online report that even after unbundling of the local loop, broadband in the UK will be 'amongst the most expensive in Europe'⁷.

It is a serious concern that discrepancies in performance and price between Britain and elsewhere should be so great. Without a healthy broadband infrastructure citizens and companies in the UK will suffer. Businesses will be paying over the odds for a substandard business tool: a fact which will give other countries a competitive advantage over Britain. Consumers will watch as the rest of the world surges ahead in terms of the quality of home services provided. Socially cohesive tools such as cheap video conferencing will remain out of reach of most of the population. Thousands of associated technologies, such as those which will form the basis of wired homes will be denied because the one technology they are all reliant on, broadband internet access, is not available.

Signs of recovery are few and far between. According to the BBC, "Telewest, NTL, Global Crossing, Worldcom and KPNQwest are all scrapping their DSL plans"⁸. Major complaints have been voiced by Microsoft, AOL and the Institute of Directors. Freeserve and AOL are threatening to take BT to court over alleged anti-competitive practices in the introduction of broadband. BT rolled out ADSL nearly 2 years late, constantly making noises about a lack of public interest, and now faces a huge backlog of orders. All the while it is offering a service which works at only a quarter the speed of what the Communications' Whitepaper itself calls 'broadband'. Cable operators benefit from the limited quality and high price of the competition they face and also offer similarly clocked services at slightly lower prices⁹.

⁵ http://www.communicationswhitepaper.gov.uk/by_chapter/anxd/index.htm

⁶ This awkward fact has been smoothed over during the drafting of the White Paper: it uses the non-standard phrase "High bandwidth" to describe current, government endorsed schemes such as BT's ADSL service which run at less than 2mbit.

⁷ <http://www.zdnet.co.uk/news/2000/44/ns-18956.html>

⁸ http://news.bbc.co.uk/1/hi/english/sci/tech/newsid_1067000/1067473.stm

⁹ It is no secret within the cable industry that pricing structures tend to be at a "BT minus" level rather than "Cost plus".

The government should be extremely concerned about the problems outlined above. It has committed itself to making the UK “home to the most dynamic and competitive communications and media market in the world”. This objective is certainly to be applauded, but without a serious commitment to broadband it is difficult to see how the government will achieve this objective.

It may seem easy to dismiss all the above as mild hysteria about teething troubles. Patricia Hewitt has said that she does “not accept some of the very pessimistic views that are around that we are hopelessly lagging behind.”¹⁰ After all, claims the government, the UK started its rollout programme later than some other comparable countries. Is it not to be expected if some of the indicators are unkind?

No. Sadly, tardiness is not the explanation for all the problems above. There are systematic reasons to think that broadband in the UK will remain inferior unless reforms are enacted. These systematic reasons are described in the next section.

¹⁰ <http://www.publications.parliament.uk/pa/cm200001/cmselect/cmcomeds/161/u161-602.htm>
paragraph 626

The Competition Problem

The systematic problems which have led to the slow, poor quality and expensive nature of British Broadband all relate to the past and present organisation and regulation of the UK telecoms industry. In brief:

- There is too little competition in the supply of bandwidth to homes and businesses.
- Local Loop Unbundling will not provide the optimal long-term solution for serving customers, although it is helping in the short term.
- Shareholder interests within BT are currently shaped in a manner which is economically sub-optimal for the UK.

Present Competition

At the moment, it is not in practice possible to receive domestic or SME broadband services from more than two operators in any one street. This is because until Jan 1 2001 it was illegal to have more than one cable operator, BT aside, in a single franchise area. This legislation, now repealed, created a situation in which a duopoly was the expected form of competition. It has taken many years for the lack of vigorous competition to really start causing problems in the UK communications market, but as the above section confirms, there are now indisputable problems.

The Government Reaction

The government understood that problems were arising from the lack of proper competition, and OFTEL introduced Local Loop Unbundling (LLU) as a solution. LLU has attempted to rectify this problem by forcing BT to open its exchanges to the use of other companies, at rental rates determined by OFTEL. This allows companies access to the 'last mile' of cable which actually runs into houses and businesses, creating a diversity of domestic service operators which would have been unimaginable beforehand.

LLU's systematic weakness

LLU has a single fatal conceptual flaw. The problem is that BT has a greater incentive to increase shareholder value through minimising new investment and avoiding competition than it does through improving its own services. This means that when BT is given an order to open up a part of its network it quite rightly will try to maximise shareholder value by delaying competitors access to its systems for as

long as possible, and that it will try to bleed its existing assets for the maximum time before investing in new technology. In practice this has meant indefinite ADSL delays, delays in starting the investment in the first place, delays in identifying and opening exchanges, delays in producing figures and costs for OFTEL, even simple delays in installing equipment for customers.

For a case study about the perverse incentive that BT has not to invest, examine ISDN. Most companies in a competitive market have an incentive to invest to develop products that will allow the company to survive. In the UK broadband market, BT faced an opposite incentive. High business pricing of the ageing ISDN technology created a huge incentive for BT to hold back ADSL as long as possible. Revenues from a single metered ISDN line, online all day in a small business are over £6000 per year. ADSL, even at British pricing levels, offered small businesses a superior alternative at about one quarter the cost. BT consequently delivered ADSL as late as it could without being formally censured, in order to exploit every last penny of ISDN revenue. Why did BT not invest sooner to beat the competition? The answer is that it knew that over the vast majority of the country there were no competing products from cable companies that were better, or cheaper than ISDN. Why invest to avoid competition that isn't there?

The carrot and the stick

BT can only be given an incentive to do anything by two means. It can be regulated (the stick) or it can be forced to increase shareholder value (the carrot). Regulation cannot provide the same level of incentive as increasing profitability and shareholder value can. This is because in a large company like BT, the fate and remuneration of the staff are closely related to the profitability and share value of the company. Most BT employees, for example, are shareholders in BT, and all employees' wages are ultimately determined by the profitability of the company as a whole.

Regulation forces employees of a company to work against their own financial interests. OFTEL has discovered at enormous cost to the British people that trying to force BT to work against its shareholder interests is almost impossible. BT has a permanent advantage over the regulators, which is that every bit of information about BT that is needed to make regulation comes from BT itself. OFTEL's 'trench warfare'

of trying to obtain information to facilitate LLU over the last summer makes perfect sense when seen in the light of employees' and shareholder's interests¹¹.

Furthermore, regulation is historically not good at promoting innovation. A company will invest less in future developments if it knows that it will receive fewer returns on those investments. At a lower level, staff will not vigorously pursue day-to-day efficiencies and innovations when they will get little in return.

Re-framing shareholder interests

Asking any company to act against its own interests is always likely to produce hesitation and obstruction. In the case of BT the problems for regulators that it can legitimately produce are vast, thanks to the complexity of administering a communications network. The government should therefore commit itself to basing its broadband policy on a market in which shareholder interests are complementary rather than contradictory to the aim of making the UK the most IT enabled nation in the world. The alignment of shareholder and consumer interests is best achieved through the idea of the open network.

An open network is one in which the best shareholder interest is for the network infrastructure to be thrown open to as many service providers as possible. The analogy of an open network is real estate. Like a property owner, the owners of an open network provide basic infrastructure which other companies then use for their own businesses. In the case of an open network, the property is a network, possibly of dark fibre, and the tenants are any company that would like to use the network to offer bandwidth, deliver services, or both. Returns on investment are lower than for vertically integrated telecoms, but considerably more secure, attracting a different type of more risk-averse capital investor, a type of investor of which there are considerably more following the dotcom slump.

There are two possible ways in which such a market containing open network services could come about.

- BT's network, which is already in the process of being spun off into its own company, could be made fully independent from BT service providers and beholden to its own new set of shareholders.

¹¹ David Edmonds, head of OFTEL described relations with BT as 'trench warfare' - <http://www.theregister.co.uk/content/archive/14754.html>

- At least one new network (local or national) could be laid which would be operated by a company which had no shareholder interests in operating services over it.

The former proposition seems the more feasible. For a start BT's network already exists, avoiding the necessity of duplicate infrastructure investment. Second, in order to break itself up, BT must receive permission from OFTEL. This puts OFTEL in a powerful position to make demands from BT, one of which could be the division of shareholder interests into cleanly separated ownership.

Nevertheless, the second proposition does have its own advantages. No consent is required by BT for a new network to be set up, although BT is bound to lobby against a creation likely to offer far faster and cheaper bandwidth services than BT currently provides. Nevertheless, the problem of large-scale duplicate investment in infrastructure should not be seen as the barrier to entry that it often is. It should not be forgotten that four mobile telecoms networks have set up their own highly expensive infrastructures when to an outside observer one might have seemed enough. Also it is worth noting that the total cost of laying all the cable company networks that function in the UK at present was less than half the cost of the 3G licences. Lastly, problems to do with the disruption of digging up streets can be rectified by allowing companies to pay local communities directly for the right to cause temporary inconvenience.

The best possible solution as far as consumers are concerned would be to have the greatest possible number of rival open access networks, as this would encourage competition between network providers as well as between service providers operating over those networks. However, there is no doubt that infrastructure costs would probably lead to the creation of just a small number of networks, with high levels of network competition only found in particularly dense areas.

Conclusion

The UK is in danger of having all the regulatory structures in place for a converged communications market with little actual convergence to go with it. It is therefore urgent that ways of dealing with the misalignment of shareholder and consumer interests are looked at by the government. An open network in which true competition between service providers could take place, against the background of a willing and enabling infrastructure provider would hugely improve the UK's chances of being able to call itself a leading wired nation.

There is one last reason to think seriously about the communications market once LLU is finally finished. It is the danger that without a bold move to deal with shareholder conflicts, each network upgrade to a new generation of communications technology will be just as slow and tortuous as the move from ISDN to ADSL was. This could mean that every generation of new technology will see the UK slipping further and further behind countries in which there is strong competition, or even worse, behind countries which never even privatised their telecoms industries in the first place.
