



What is the value of next generation broadband?

Publication date: September 2008

The Ofcom Consumer Panel was established under the Communications Act 2003 as the independent policy advisory body on consumer interests in the communications market (with the exception of content issues).

Working from a firm evidence base, we advise Ofcom, the communications regulator, and others on how to achieve a communications marketplace in which all consumers can confidently choose and use products and services that suit their needs.

The Consumer Panel sets its own agenda but works constructively with the Ofcom Board. This enables us to give strategic advice on policies early on in their development – before they are consulted on – so as to build consumer interests into Ofcom’s decision-making from the outset.

The Consumer Panel is made up of part-time members with a balance of expertise in consumer issues in the electronic communications sector. There are members representing the interests of consumers in Scotland, Wales, Northern Ireland and England.

Consumer Panel Members are appointed by Ofcom, subject to approval by the relevant Secretaries of State. They are appointed in accordance with Nolan principles and are eligible for re-appointment. The Consumer Panel is assisted by a small support team.



Introduction

1. The industry usually terms it next generation access; the media often calls it super fast broadband; what we are discussing in this paper is the local telecommunications infrastructure to people's homes or businesses and the transition to a fibre optic network instead of a copper one. In this document we are using the phrase next generation broadband. Next generation broadband will deliver greater bandwidth, reliability and speed (above 25 Mbit/s and up to around 100 Mbit/s) than is capable of delivery by the traditional copper telephone network; in other words, a new telecommunications infrastructure.

Context

2. Other countries want to move to a fibre based network and deployment is already occurring in a number of them. These include France, Germany, Italy, Belgium, Switzerland, Sweden, Denmark, Norway, Finland, the Netherlands, South Korea, Japan, the United States and New Zealand.
3. In three cases – Korea, Japan and the USA – a significant number of broadband customers already use next generation broadband. In Korea, over a quarter of broadband users have fibre connections, while in Japan over a third of broadband connections are fibre. Looking to the (near) future, four nations – the Netherlands, Denmark, Korea and Japan – have plans to bring between 90-100% of homes on to next generation broadband technologies by 2010.
4. Here in the UK, BT has announced an investment plan of £1.5 billion to deliver next generation broadband to up to 10 million households by 2012 (approximately 40% of the UK population) – utilising a combination of fibre to the premise (to the home or office) and fibre to the cabinet (roadside or kerb) technology. BT's fibre to the premise product will deliver headline speeds of up to 100 Mbit/s whilst its fibre to the cabinet product will initially deliver speeds of up to 40 Mbit/s. Virgin (which covers approximately 50% of the population) has announced it will start to deliver a 50mbit/s service at the end of 2008 and will make it available to all its customers by the end of 2009. It now plans to supply a 200mbit/s service by 2012. There have also been a number of smaller fibre deployment announcements: South Yorkshire regional development agency has funded a fibre-based broadband network roll out; and H2O has set out plans to fibre Bournemouth and Dundee.
5. In terms of public policy and regulation there have been a number of reports by the Broadband Stakeholder Group (BSG), Ofcom has issued discussion and consultation documents, and the Government has commissioned a review by Francesco Caio. This document summarizes the position of the Ofcom Consumer Panel.



Our basic position

6. The Panel thinks that when next generation broadband does begin to roll out in a meaningful way across the UK, as many consumers as possible should have access to the network, as this network will enable usage of new services that will improve quality of life through more and better entertainment, information, communication and commercial activity.
7. As a consumer body, our emphasis differs from many other organisations. We are technology-neutral; we don't mind how next generation broadband is delivered (whether it is based on fibre to the street or to the home, or wireless). Our concern is easy and affordable access by the maximum number of consumers to the rich range of services that are likely to be made possible by faster speeds and greater bandwidth.
8. We recognise that the extent and speed of the roll-out of both infrastructure and services must depend on sound and sensible business cases and that, in the main, the market will deliver when it makes economic sense to do so. It is not our wish – and indeed it would not be in consumers' interests – for the private or public sector to make investments that involve excessive risk.
9. Recognising that investments in next generation infrastructure involve risk, we see it as the role of government and the regulator to do all that is sensible to de-risk such investments so that business cases can be made.
10. We believe that the issue of value cannot be confined simply to a narrow accounting measure of value to the company building the new infrastructure. It needs to embrace a wider economic and social value that captures the full range of benefit to consumers and citizens and to government, competitiveness and the wider economy.
11. Any large-scale investment programme by the private sector at this stage will be predicated on a roll-out to significantly less than 100% of UK homes. We believe that the question of how to deliver next generation broadband to homes likely to be outside such private sector investment plans cannot be left until some indeterminate point in the future; instead we must debate the issues now - and so avoid the possibility of creating a second physical digital-divide.
12. We want to encourage exploration of public sector and other non-private interventions even at this very early stage, alongside commercial developments.
13. We see a potential case for introducing next generation broadband in those areas which are currently struggling to obtain satisfactory performance levels of current generation broadband. These are generally more rural areas where the incremental value of next generation broadband could be considerable. We could also use the new technology to leapfrog first generation broadband for those who are currently most disadvantaged.



Recommendations for further work to be undertaken

Recommendation 1

14. We recommend that work is undertaken to map the likely geographic patterns of exclusion that will follow from the various models for roll-out and that work is then done to identify the costs and benefits of addressing the issues that emerge.

Recommendation 2

15. We recommend that the costs and benefits be identified of leap-frogging the old technology and moving straight to next generation broadband for consumers currently excluded from first generation broadband - or where poor first generation broadband exists.

Recommendation 3

16. We welcome the appointment of Paul Murphy as the minister responsible for digital inclusion and look forward to the Digital Equality Action plan. We recommend, in this context, that work is undertaken that looks at the potential cost and benefits from addressing a variety of public service inclusion requirements using next generation broadband, as against delivery of public service requirements by traditional means, e.g. face to face, and taking account of the costs of consumer time in accessing traditional services. For example, savings might be derived from telemedicine, education for marginalised sectors, or specialist services from a central hub for disabled consumers. In this way, the costs of roll-out could be set against the costs of delivery by current provision, in at least some cases.

Valuing a next generation broadband network

17. We co-funded with the Department for Business, Enterprise and Regulatory Reform (BERR) and the BSG the report 'A framework for evaluating the value of next generation broadband' by Plum Consulting. We are keen to ensure that, in addition to the private value that next generation broadband will create, the social benefits or social value is also incorporated into the cost benefit analysis framework. The report makes clear that these benefits will become greater as more of us access next generation broadband (a network effect) and that some of the value will not be achieved until the remotest areas of the UK have access.
18. The framework distinguishes between private value, wider economic value and wider social value and between scenarios based on progressive upgrades to existing technologies (with some deployment of fibre in green-field sites) and an 80% availability and take-up of next generation broadband - predicated on a roll-out utilising fibre technology.



The wider economic value

19. The overall conclusion of the BSG report 'A framework for evaluating the value of next generation broadband' was that private sector investment will deliver significant benefit because of the scale of private economic value that could be achieved. However, it also acknowledged the potential for public and social value to be achieved, value that was not yet widely recognised, could be significant and could make the difference to some investment decisions.
20. In particular, the report found value in the ability of a fibre network to enhance remote working by utilising technologies such as video conferencing. This could ease traffic congestion and lead to a fall in greenhouse gas emissions due to a reduction in the need to travel. The network effects will also be apparent, particularly in the form of two-way video conferencing. There is likely to be a spill-over of knowledge that is not local, and the service capabilities of next generation broadband will allow virtual agglomeration replicating some of the productivity benefits associated with urban agglomeration. Competition in the wider economy could facilitate a greater trade in services and improved labour market research and matching.

Wider social costs and benefits

21. The unlocking of significant social value could allow citizens to have more information on issues such as health and change formal education structures; introducing new ways for people and teachers to access education materials and helping life-long learning. The transfer of information could help create an informed democracy, cultural understanding and social inclusion. And the enhanced environment of home-working could have a social impact on community and education. A next generation network could aid inclusion for people with a disability such as two-way video communications for those with reduced mobility or who are visually impaired or hard of hearing. Video collaboration could enhance social capital as a form of communication that conveys identity and allows non-audible cues to enhance understanding between people.
22. Next generation broadband could also provide potential cost savings by addressing a variety of public service inclusion requirements, as against delivery of public service requirements in traditional form, and the costs of consumer time in accessing traditional services. Some of these services have been mentioned above, others will be services and products that will support and assist living at a distance, making it possible for people to stay in their own homes as they get older. Recognition of these elements of value means the costs of roll-out could be set against the costs of delivery by traditional means, at least in some cases.
23. The finding of the Plum report is that overall there are likely to be substantial benefits associated with next generation broadband in the medium term - although understandably the precise scale of those benefits cannot be fully quantified now and different views can be taken on what is meant by the medium term. We agree very much that some of these benefits are dependent on putting in place a framework that enables value to be realised and that doing so should be a priority for the government and the regulator.



24. We would add that perceptions of value of next generation broadband could change quite rapidly and quite substantially once we have significant deployment in the UK. We look forward to debates on the overall framework and on those indicative quantitative values that have been assigned to elements of the framework i.e. the costs of deployment in the report are very dependent on costs taken from US experience.

Do not blame consumers

25. It is not reasonable to expect today's consumers to demonstrate a willingness to pay for tomorrow's services when they can barely envisage the scope and nature of those services. Ten years ago, they would not have shown a willingness to pay what they currently do for broadband; twenty years ago, they would not have shown a willingness to pay for what they now do on mobiles. We believe that when the communications networks are in place and the compelling services are on offer, then customers will - as they have always done – be ready to part with their cash and generate the revenue flows necessary to fund the investments.
26. We should remember the experience of current generation broadband. It should be recalled that initially subscribers to broadband used it for just the same services – typically e-mail and web browsing – that they used when they simply had narrowband. The age of sites such as YouTube and flickr had not arrived; still less on-demand television services like the BBC's iPlayer and IPTV. The use of such sites and services is now growing at a very rapid rate and consumers will demand faster down-load speeds and better quality – all of which will require greater bandwidth.

Public sector intervention

27. We do not believe it is possible or even desirable for Government or the public sector more generally to make major financial commitments to the roll-out of next generation broadband. This is overwhelmingly a case for private sector investment. However, we do think at some point there will have to be some public sector investment if super fast broadband is to reach most parts of the country without deepening the digital divide. The issues are around where, when and how such public sector investments should be made.
28. Nor is it the Panel's wish – and indeed it would not be in consumers' interests – for the private or public sector to make investments that involve excessive risk. Government and Ofcom have a vital role to play in creating regulatory certainty for the investment process; while private companies, public sector bodies and co-operative enterprises all have a role to play in developing business models and pilot projects that can inform the process of creating a new national infrastructure that will bring all consumers and citizens the potential benefits of next generation broadband.
29. The Treasury and BERR have already commissioned a review of next generation broadband by Francesco Caio which we very much welcome. But Government needs a 'joined up' approach to this strategic issue in which all Departments know what they should do to support mainly private sector investments in next generation broadband and all Departments understand how best they themselves can use the new networks to deliver public services in cost-effective and innovative ways.



Avoid creating another infrastructure digital divide

30. If we address only the economic case for commercial roll-out of the new network, we risk deepening the existing digital divide. Taking fibre to even 90-95% of homes is going to be a much tougher proposition economically than taking ADSL to exchanges connected to those homes.
31. The Analysys Mason report, 'Models for efficient and effective public-sector intervention in next-generation broadband access networks', builds an evidence base of public sector intervention cases - using the experiences from both first-generation broadband in the UK and next-generation broadband intervention in both the UK and overseas. The report categorises public sector interventions into those which focus on demand-side issues and those which address supply-side issues. It sets out what criteria are required for efficient and effective models for intervention, their critical success factors, and different funding mechanisms, as well as the policy drivers for intervention: addressing market failures; addressing distributional policy objectives, in particular the lack of supply due to the higher costs associated with certain geographical areas (usually rural), which makes a service unviable for the private sector to provide; supporting economic development - a primary driver behind the proposed next generation broadband interventions in both South Yorkshire and Cornwall. And points to the growing interest from the public sector in the UK to explore how next-generation broadband can be utilised to help deliver public services.
32. We agree with the report's conclusion that, based upon evidence from first-generation broadband and other countries, there is likely to be a role for public-sector interventions in next generation broadband, particularly if it is required on a near-universal basis. Indeed we are quite clear that, even in this very early stage of deployment of next generation broadband, public policy should be based on the assumption that over time it will be required and expected by the overwhelming majority of homes and small business, even though timescales and technologies will vary from locality to locality.
33. It seems highly likely that there will be some economic advantage from making a single significant investment in next generation broadband to address the gaps, rather than making a lesser investment now in current broadband scenarios and then having to revisit the issue and make a further investment down the line. In any event there should be further work done on the likely patterns of exclusion that will follow from the various models for roll-out and the costs and benefits of addressing these issues. These gaps may be in rural or remote regions or indeed in inner cities where operators believe there is no economic case for roll-out.
34. We think that it should be possible to develop initiatives which will complement rather than challenge private investment. Such public sector investment would need to be well-targeted, innovative, based on well-produced local development plans, and open and transparent as to how it would aid rather than distort competition and how it would incentivise private sector investment to come forward to add value to public sector intervention. Ofcom and Government have made clear, in the issue of joint guidelines on such investments, that they are anxious that premature investments from the public sector could 'crowd out' private sector investment. We share this concern. On the other hand, many Regional Development Agencies and some local authorities are taking steps to



advance their own position. We hope that the work being done by Regional Development Authorities, local authorities, and co-operative enterprises will give us valuable experience of different technological approaches, different competition models, and different consumer offerings.

Conclusion

35. The UK is in the process of making some very important decisions about when and how to build infrastructures that can deliver next generation broadband. In making these decisions it is important that we have a proper sense of the true value of next generation broadband not just to companies and consumers but to the economy and society as a whole.
36. Government and the BSG have a key role to play in understanding and promoting such value; Government and Ofcom have a vital part to play in de-risking the investment process; while private companies, public sector bodies and co-operative enterprises all have a role to play in developing business models and pilot projects that can inform the process of creating a new national infrastructure that will bring all consumers and citizens the potential benefits of next generation broadband.



For more information, visit our web site at:

<http://www.ofcomconsumerpanel.org.uk/>

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Further Reading

In order of publication:

“Next Generation Broadband In Scotland”, SQW Limited report commissioned by the Scottish Executive, January 2007

“Very High Speed Broadband: A Case For Intervention”, Enders Analysis, January 2007

“Pipe Dreams? Prospects For Next Generation Broadband Deployment In The UK”, Broadband Stakeholder Group, April 2007

“Future Broadband - Policy Approach To Next Generation Access”, Ofcom consultation document, September 2007

“Connecting Britain's Future: The Slow Arrival Of Fast Broadband”, Connect, March 2008

“Next Generation New Build: Promoting Higher Speed Broadband In New Build Housing Developments”, Ofcom consultation document, April 2008

“A Framework For Evaluating The Value Of Next Generation Broadband”, Plum Consulting, June 2008

“Models For Efficient And Effective Public Sector Interventions In Next Generation Broadband Access Networks”, Analysys Mason, June 2008