



Access to Broadband

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This note outlines the availability of Broadband in the UK

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1 What is broadband?

Essentially, a broadband internet connection provides at least ten times the data transfer rate of a normal telephone line—greater than 128 kilobits per second. Applications such as video require broadband lines.

Broadband services are always on, so that the user does not have to dial up their Internet Service Provider every time they want to surf the internet. They can also make a telephone call or watch television at the same time. Local loop unbundling, the process of allowing telecommunications operators to use the telephone connections from the telephone exchange to the customer's premises, means that operators other than BT are able to provide broadband services to customers by installing their own equipment.

The data transfer rate for broadband is listed as “up to” a maximum speed. Higher “up to” transfer speeds are usually charged at a higher rate. However, a recent Ofcom survey found that transfer rates can be significantly less than the maximum listed:

The average broadband speed in the UK in April 2009 was 4.1 megabits per second (Mbit/s). This compares to an average 'up to' headline speed of 7.1 Mbit/s.

The actual speeds received varied widely. Fewer than one in ten (9 per cent) of our sample on 8Mbit/s headline packages received actual average speeds of over 6Mbit/s and around one in five (19 per cent) received, on average, less than 2Mbit/s.

Those living in urban areas received significantly faster speeds than those living in rural areas. The average speed delivered to urban consumers was 4.6Mbit/s, compared to an average of 3.3Mbit/s delivered to rural consumers.

Consumers with all ISPs experienced a slowdown in actual speeds during peak evening hours (8-10pm), with speeds in this period around 20 per cent slower than over a 24-hour period.¹

It should be noted that 85% of those surveyed were satisfied overall with their broadband service, although broadband speeds were the single biggest cause of dissatisfaction amongst those who said they were dissatisfied.²

2 Early targets

In 2001 the Government set a target for the UK to have the most extensive and competitive broadband market in the G7 by 2005. A report published by Ovum and the DTI in February 2005 suggested the Government had achieved this with broadband being available to 96 percent of households in the UK.³

A £30 million UK Broadband Fund was announced in the White Paper *Opportunity for All in a World of Change* in 2001. Its purpose was to help develop innovative broadband related schemes to meet local requirements, to ensure that as many people and businesses as

¹ Ofcom Press release, Ofcom reveals UK's real broadband speeds, 28 July 2009:
<http://www.ofcom.org.uk/media/features/broadbandspeedsjy>

² ibid

³ DTI Press release, *UK tops G7 broadband availability league*, 21 February 2005:
<http://www.gnn.gov.uk/environment/detail.asp?ReleaseID=146915&NewsAreaID=2&NavigatedFromDepartment=False>

possible across the UK were provided with access to affordable broadband services. This partly addressed the issue of broadband in rural areas as explained in the following PQ:

Broadband

Mr. Crabb: To ask the Secretary of State for Trade and Industry what the total amount of financial subsidies and grants received by BT has been since 1997 for the purpose of extending broadband availability in the UK. [29872]

Alun Michael: Since 1997 BT has received the following financial sums to enable exchanges to extend broadband availability in the UK:

East of England Development Agency paid BT approximately £500,000, to enable most of their remaining exchanges in BED A areas. This was awarded through the Broadband Aggregation programme.

Following a competitive tender South West Regional Development Agency awarded BT approximately £3900,000 to enable some exchanges in the Cornwall area.

Following a competitive tender, BT in Wales was awarded £3.6 million of European Structural Funding to upgrade over 40 BT telephone exchanges from UXD5, making ISDB2 services available to 99 per cent. of BT lines. The investment was also used to enable Digital Subscriber Lines, ahead of the commercial roll-out programme for the UK, in BT exchanges in market towns across Wales. It is estimated that the total project value was around £6 million.

Following a full EU Procurement Process to extend broadband availability in the North East region, BT was paid £1,830,345. This sum is subject to a downward adjustment, in accordance with a reverse contribution scheme, which operates to repay money to the Agency if broadband take up in the region exceeds a prescribed level.

£364k was awarded to Vale Royal Local Authority acting on behalf of the Cheshire Digital Development Agency who, following a competitive tender through the North West Regional Aggregation Body, awarded BT a contract to enable of a series of remote rural exchanges in Cheshire.

In Cumbria, Your Communications was awarded a large infrastructure project (Project Access) contract for approximately £17 million following a negotiated, state aid approved OJEU competitive tender. Your Communications sub contracted part of the contract with a value of around £1 million to BT for the early enablement of all the exchanges in Cumbria and specifically for the enablement of 14 exchanges in the remotest areas of the sub region.

In Scotland £16.5 million was awarded to BT following competitive tender. The roll-out has not yet been completed so not all the money has been paid as yet. The European Commission was notified under State Aid rules.

East Midlands Development Agency has worked with BT on a number of sub- regional strategic partnerships, to extend broadband availability. As part of the contractual arrangements confidentiality agreements were signed by the sub- regional partnerships to protect information as commercial in confidence. Accordingly, this information is not be available for disclosure.⁴

An analysis of the UK Broadband Fund was made in January 2005 and is available on the DTI's website:

http://www.dti.gov.uk/industries/telecoms/pdf/UK_Broadband_Fund_Evaluation.pdf

3 Current availability and take up of broadband

The 2008 Ofcom *Nations & Regions Communications Market* report showed that over 99.99 per cent of households in urban areas and 99.92 per cent of households in rural areas had access to a mass-market terrestrial broadband technology such as ADSL, cable modem or fixed wireless access (FWA). However, not all households are able to receive a good

⁴ HC Deb 24 November 2005 cc2206-7W

broadband service. This is due to a variety of reasons, including distance from the exchange and the quality of the fixed network in their vicinity.

In 2009 11% households could not get a broadband connection of at least 2 Mbps, although the Government believes this could be reduced to 7% if consumers use self-help technological solutions such as an iplate. 2Mbps is considered the minimum required for full internet functionality, such as for streaming video.⁵

The report showed that UK household broadband take-up is 58%—59% in rural areas and 57% in urban areas. More granular data can be found in the full report on Ofcom's website:

www.ofcom.org.uk/research/cm/cmnr08/

4 A Universal Service Broadband Commitment: early discussions

The BT pre-registration scheme was launched in July 2002 and was designed to make sure there was sufficient demand for broadband in areas where new equipment was required before BT installed the equipment. In April 2004 BT decided to scrap this system and announced that it would provide broadband to every exchange in the UK except for the very smallest, which account in total for fewer than 100,000 premises.

There were no legal requirements on BT to provide a broadband service. The Universal Service Obligation is a description of the services BT has a statutory obligation to provide. These universal services are regulated by OFCOM. During a review of the Universal Service Obligations OFCOM stated:

In future, it may also be appropriate to alter the overall scope of USO. Though we do not believe at this point that there is a case for extending universal services to include broadband, the Strategic Review considers how the scope of USO might evolve over time.⁶

5 Digital Britain's Universal Service Broadband Commitment

The Government published its Digital Britain report in June 2009. This included a Universal Service Broadband Commitment (USBC) to provide universal access to broadband at 2Mbps by 2012. It said:

More than one in 10 households today cannot enjoy a 2Mbps connection. We will correct this by providing universal service by 2012. As such, the UK's Commitment leads Europe. It has a measure of future-proofing so that, as the market deploys next-generation broadband, we do not immediately face another problem of exclusion. The USC is also a necessary step if we are to move towards digital switchover in the delivery of more and more of our public services.

... It will be funded from £200m from direct public funding [based on current estimates of the Digital Switchover Help Scheme underspend] enhanced by five other sources: commercial gain through tender contract and design, contributions in kind from private partners, contributions from other public sector organisations in the nations and

⁵ DCMS and DBIS, Digital Britain, June 2008

www.culture.gov.uk/what_we_do/broadcasting/6216.aspx

⁶ OFCOM, Universal Service Obligation: a review, November 2004,

<http://www.ofcom.org.uk/consult/condocs/uso/main?a=87101>

regions who benefit from the increased connectivity, the consumer directly for in-home upgrading, and the value of wider coverage obligations on mobile operators arising from the wider mobile spectrum package. The Commitment will be delivered through the Network Design and Procurement Group, with a CEO appointed in the Autumn. We will also discuss with the BBC Trust the structure which gives them appropriate visibility in the delivery process of the use being made of the Digital Switchover Help Scheme underspend, which will be realised in full by 2012.

The report explained how the USBC would be delivered:

To address these remaining homes will require a mix of professionally assisted consumer home solutions, professional home engineered solutions, fixed network engineered solutions, and wireless network engineered solutions (including satellite). The final mix of these solutions will be determined by the procurement process.

34. The gaps in current supply are widely dispersed across the UK, not only in rural areas, but significantly our analysis has revealed a lot of clustering, which should provide scope for efficient solutions to be applied. In many such cases a fibre to the street cabinet solution may well be the most economical. It will also benefit all others connected to those street cabinets whose connections today are over 2Mbps; they too will leapfrog to a next generation service up to 40Mbps. In these circumstances we estimate that **up to 1.5 million households, many of whom currently have little or no broadband availability, might be able to access next-generation super-fast broadband as a result of delivery of the Universal Service Commitment.**⁷

The USBC delivery process and next steps can be found from paragraph 38 of the Report:

www.culture.gov.uk/what_we_do/broadcasting/6216.aspx

6 Next generation access

Next Generation telecommunications networks, sometimes based on fibre optic cables, can provide greater bandwidth than the existing copper wire network. The POST Notes, [Next generation broadband access](#), from April 2008 and [Next generation telecoms networks](#), December 2007, provide more detail on this technology.

A report by the Broadband Stakeholder's Group estimated the cost of putting in a basic next-generation network at £5bn while a better service that would require laying fibre optic cables to every home and business could cost £28bn.⁸

The Government said in its Digital Britain report that "competitive, market-led investment in fibre will deliver next generation services to a significant proportion of the country".⁹ However, the Government said it would need to support the delivery of a next generation network in the 'final third' of areas in which it might not be economic:

...we cannot ignore the emerging industry consensus that, despite this welcome investment and competition, the economics of next generation broadband deployment mean that there will remain up to a third of the country – both homes and small-to-medium-sized businesses – not served in the way that the rest of the country is by the fixed telecoms market.

⁷ DCMS and DBIS, Digital Britain, June 2008

www.culture.gov.uk/what_we_do/broadcasting/6216.aspx

⁸ [BSG : The costs of deploying fibre-based next generation broadband, September 2008](#)

⁹ DCMS and DBIS, Digital Britain, June 2008, paragraph 48

www.culture.gov.uk/what_we_do/broadcasting/6216.aspx

50. At the same time, mobile will play an important role in developing alternative means of connectivity across much of the country. Next Generation Mobile services will offer substantially higher speeds and data rate capabilities than 3G. This will mark an acceleration in the trend of mobile networks being used more for data than voice traffic. As we outline below, Long Term Evolution (LTE) technology is capable of delivering a range of speeds up to 50Mbps in a competitive, multi-operator market. We will take the necessary steps to ensure spectrum is available for use and the market remains competitive. But here too, the costs of deployment rise in the final third of the country, meaning the investment required to install the density of base stations needed to support very high bandwidths becomes uneconomic. While we believe, therefore, that the market will deliver new higher mobile data rates to the final third of the country, this may not be at genuinely 'next generation' bandwidths.

51. In summary, given the expected rates of return it seems unlikely, particularly in a period when capital markets are severely constrained, that private investment or publicly available financing will provide the investment necessary to roll out NGA such that coverage can reach ADSL or mobile coverage levels.

52. The increasingly widespread conclusion from industry and economic analysis is that there is no obvious means whereby the market, unaided, will serve the final third of the population. We therefore propose a Final Third Project to deliver at least 90% coverage of Next Generation broadband for homes and businesses by 2017 (and, it is hoped, accelerate the expansion of the boundary of market provision from 50% to the two-thirds coverage level).

A new charge on all fixed lines would be introduced to pay for the delivery of the next generation network:

In order to generate the substantial funds needed to support such an undertaking, the Government intends to propose a small general supplement on all fixed copper lines (that is, residential copper lines, the equivalent business analogue and ISDN2 lines and cable telephony lines) from 2010 for a Next Generation Fund. Such a model would be the communications sector equivalent of the Renewables Obligation, which is paid for through household and business energy bills to deliver an objective which the market otherwise would not. It would apply to fixed line rather than mobile because mobile operators already contribute with licence coverage requirements for mobile telephony and broadband.

Such a supplement needs to be set against the historic fall in telecoms prices. Unlike all other utilities or, indeed media services, telecommunications prices have fallen significantly and steadily in real terms over many years. Today the UK retail telecommunications market is among the most competitive in Europe. Consumers enjoy either the lowest or among the lowest prices, depending on their usage patterns of any major European market. Indeed, many consumers pay no separate charge for broadband – it being included as a free element within a bundle of voice, line rental and pay television.

At wholesale level, the UK currently has the second cheapest prices in Europe for broadband only DSL, the third cheapest for voice and broadband DSL, and the fourth cheapest for voice line rental. ADSL prices for a 10MBps service can be as low as £5.99. The cost-based basket of wholesale prices for today's copper-network has fallen by £8 per line per year in real terms since 2005. Over the same period the retail price for combined voice and broadband has fallen by around £90 per annum in real terms.

57. Against that background, the Government believes that it is right to share a small part of that saving, and that a Next Generation Fund supplement of 50p per month on fixed lines represents a fair and sensible national investment to ensure that the overwhelming majority of the country can get access to next generation broadband. Low income households – those on social telephony schemes – would be exempted.¹⁰

7 Home Access scheme

At the 2008 Labour Party Conference Gordon Brown announced that school children would be provided with access to broadband. Families in receipt of income support or unemployment benefits will be able to apply for a “Home Access” Grant which they can use to purchase a package from accredited suppliers. The programme will begin in November 2008 with targeted funding available for all local authorities to provide home access for groups such as children and others for whom the authority has special responsibility. The wider programme will be piloted in early 2009 in two local authority areas, with expansion to the rest of England starting in autumn 2009. The programme aims to work towards universal home access by 2011:

http://www.dcsf.gov.uk/pns/DisplayPN.cgi?pn_id=2008_0208

¹⁰ DCMS and DBIS, Digital Britain, June 2008
www.culture.gov.uk/what_we_do/broadcasting/6216.aspx