Section 4

Universal Connectivity

4.1 Universal connectivity: Networks

In a developed country such as Britain, everyone should be able to be part of the digital economy and digital society. The section considers whether there is a policy case for a new universality in relation to broadband.

That involves access, education and understanding, affordability, hence take-up, and connectivity for all.

Broadband today is becoming an essential means of social and economic connectedness, just as the telephone and transport links have been. As with telephone, television or transport, there will be individuals or households who choose to opt out.

Indeed, the recent Ministerial Conference on e-Inclusion held in Vienna concluded:

> *"Broadband is becoming an "essential commodity" like water or electricity. It is today an indispensable service for the effective participation in the global trade, economy, education, culture, politics and society. As new broadband services are developed and new and more capable infrastructures are made available old gaps may get entrenched and new gaps may arise between those who have access and can successfully exploit it and those who do not have access or lack the ability to exploit it. The Commission and the Member States are called upon to put in place measures aimed at ensuring an adequate participation to the information society, by enabling citizens to access and exploit ICT irrespective of location or socio-economic background, in particular in convergence regions and remote and rural areas of the European Union."*[3]

In the UK today over nine in ten households can get first generation broadband. Six in ten households have today already adopted it, a higher percentage than most other major economies. The most recent OECD survey shows the UK take-up to be

3 The Presidency of the Council of the European Union. (2nd December 2008) Vienna "e-Inclusion" Ministerial Conference conclusions http://ec.europa.eu/information_society/events/e-inclusion/2008/doc/conclusions.pdf

well above average but it ranks 11th overall, behind the Scandinavian countries, the Netherlands, Switzerland, Korea and Canada. Small and Medium Enterprise (SME) take-up follows a similar pattern.

Several other countries are now moving to a universal service commitment for broadband. America, France, Australia and Finland have all announced plans for a universal guarantee. The Republic of Ireland is just concluding its government-tendered contract for universal availability.

There might be many different reasons why certain other countries enjoy strong records on take-up and availability, and the benefits they derive might vary. We can say with conviction that the full benefits of the digital economy and enhanced delivery of public services require practical universality – and take-up – particularly for those services directed at sections of society most in need of them. This will be particularly relevant to those on lower incomes, older people or those remote from the physical distribution points for public service and other currently excluded communities and groups.

In some respects the UK is well placed. Technology innovation has taken broadband beyond the PC to other devices, the mobile phone and television set-top boxes, that those sections of society who are not PC-enabled are more inclined to use. Our take-up of commercial online services is high, and judged by the proportion of total advertising now conducted online, the UK online market is ahead of all other major markets. Indeed, public services are widely available online: some 89% of services, compared to around 70% in France and Germany.[4] UK take-up of e-Government by individual citizens is only slightly above the EU average; and take-up by businesses below the EU average.

But if by 2012 we have a society where 50 per cent of the population has very high speed broadband, 40 per cent has first generation broadband but little prospect of market-led upgrade to next generation broadband, and up to ten per cent of homes are still in not-spots, not-a-lot spots or not-at-all good spots, then the gulf in access and connectivity will appear starker than it is today.

We believe we need to do more to drive connectivity, capacity and take-up[5].

On connectivity, the simple, fairness point is that broadband access is already a boundary point of the divide from social exclusion. Today, the broadband-enabled population have easy access to information, education, e-commerce (including special tariff deals), BBC Licence-Fee funded services to which all licence payers contribute and public services, including health and schools, to which the whole public and, locally all council tax-payers, contribute. Efficiency demands easy online access to those services. Fairness demands that all should be able to get reasonable access. Where consumers are already paying for content or services, their access needs are considered by the body which is responsible.

4 Source European Commission 2008
5 As well as the public and social benefits of e-inclusion, high take-up also makes further investment in networks more attractive.

The Government needs to drive to promote the adoption of e-public services by businesses and individuals. This requires careful design of how the services are delivered, but also the right promotion. For example a vigorous information campaign, combined with financial incentives, saw the number of businesses completing their Employer Annual Returns for tax online jump more than ten-fold in a single year, to well over 1 million businesses now.

But in order to maximise the impact of e-government, we also need to ensure universal access to broadband-delivered services at necessary speeds. That means having broadband which supports public services which are inherently information and audio-visual content-rich, such as education and health services.

We propose a Universal Service Commitment in broadband by 2012.

Universal availability of service has traditionally been provided by means of a universal service obligation (USO). The concept of a USO was originally used in the case of the Royal Mail and was implemented in 1840. A USO was imposed on British Telecom at the point of privatisation in 1984, requiring it to provide voice and basic data to any premises in the UK (save for Kingston upon Hull, which is subject to a separate universal service obligation imposed on Kingston Communications (KCom)).

The USO requires BT to ensure that their services are affordable (which it has traditionally achieved through the offering of special tariffs) and that services are offered for people with disabilities. In infrastructure terms, they must secure (and pay for) the provision of a network of public call boxes and ensure that all households and businesses are connected by fixed line capable of supporting voice telephony and functional, narrowband internet access. Where the cost of such a connection exceeds £3,400 the consumer must pay the excess.

The costs of the USO currently fall on BT and KCom, and the proportionality of these costs is assessed by Ofcom in view of the benefits associated with universal service.

The Government remains committed to the principle of universality. We believe that principle can be updated to reflect the changed market and customer expectations in terms of technology.

The existing USO model has been appropriate during a time when the fixed line was the norm for communication and BT held a pre-eminent position in the market. Now that communications for voice and data have become accessible by different means and through a market that is considerably more complex, we need to ensure our ambitions for universality are delivered in a way which reflects reality today.

In considering the desired level of minimum service, we will need to take into account several factors including:

- The levels of broadband speeds most commonly subscribed to in the population as a whole;
- The sorts of online services which consumers want and expect;
- The public services, such as education or remote health, for which delivery depends on a certain speed; and

- The point at which a level of service can be delivered ubiquitously at proportionate and reasonable cost.

We also need to take into account as far as we can the likely evolution of technology and the market, such that we do not lock ourselves into a minimum level which is outdated within a limited number of years.

Our first consideration needs to be the different levels of broadband speed and the services they deliver to consumers. A short summary of the services supported by different speeds is below.

256 kb/s	512 kb/s	1Mb/s	2Mb/s
Basic internet browsing	*As before, plus*	*As before, plus*	*As before, plus*
Instant Messaging	Basic video streaming	iPlayer	Download music album in 5 mins
Email	Tele-health	SecondLife	Long-form video (MPEG4)
VoIP	Faster internet browsing	P2P file-sharing	Video conferencing via TV
Online radio		Fast internet browsing	
Basic video call		Download audio CD in 10 mins	
Network storage & backup		'Near-VHS' PC conf call	

We then need to consider the availability of different speeds via market investment. In Great Britain, the current availability of broadband over BT's network is as follows.

Level of coverage	256 KB/s	512Kb/s	1Mb/s	2Mb/s
Availability	99%	98.5%	97.9%	93%
Approx. unserved households	250,000	370,000	510,000	1,750,000

The table above shows the expected modelled capabilities of BT's current active copper lines to support various downstream data rates using the current DSL max service. With the rollout of the 21CN programme, we expect ADSL2+ technologies to increase the percentage of lines capable of delivering each of these bandwidths, taking the coverage closer to 100%. By 2012 perhaps one third of households not so served today will be within 2Mbps coverage.

The actual data rate achieved by an end user and thus the percentage of lines capable of achieving these data rates, as perceived by customers, may vary from these figures due to a number of factors including the impact of internal home wiring, the capabilities of the customer's router/modem, CP contention, and error limits in the underlying model used to predict network performance.

Additionally, these figures provide a reasonable proxy for overall broadband availability but they are not exact; the BT not-spots will overlap in some areas with cable or mobile availability meaning that the true availability might be slightly different.

Based on these factors, there are a number of practical options as to the choice of speed. For example:

- A 512kb/s universal service commitment would provide a relatively small number of consumers with limited benefits. Market investments are likely by 2012 to have ensured that such a service already reaches a level that many would think of as universal (i.e. it is equivalent to the proportion of households that can receive terrestrial broadcast TV). The disadvantage of this level is that it remains a very basic broadband connection which will be increasingly out of step with the highest speeds available and those to which the bulk of broadband customers subscribe.
- A 1Mb/s universal service would carry greater costs due to the greater number of lines to upgrade, but would support more services. In the short term, speeds delivered by this connectivity would match many consumers' expectations. It does not support long-form video content. Evidence today is that consumers, particularly in 15-24 age bracket, are increasingly using the internet for video content[6], and we can expect this trend to continue.
- A 2Mb/s service would carry further initial costs, but would enable a substantially higher number of households to upgrade to what by 2012 will be in step with standard broadband usage. It might also be future-proofed in that the prospect of requirements for a future upgrade is lower than if the universal service commitment was set at a more basic level.

In making a decision between these levels of service (or any other level of service), there are a number of trade-offs to be made:

a. **the speed chosen**

b. **the absolute number of homes connected** at which universality is considered to be achieved (as noted above, universality in terrestrial broadcast networks is considered to have been achieved at 98.5%)

c. **the type and capability of connection** – fixed and wireless solutions (including satellite) may each have a role to play

d. **the cost**

Our initial assessment, subject to detailed analysis, is that a 2Mb/s universal service commitment could, with careful policy design, strike the right balance between these factors.

6 26% of the 15-24 age bracket used the internet for 'watching TV programmes' in 2008, up by 16 percentage points in 12 months. 51% used it for watching video clips/webcasts over the same period (Source Ofcom). See also statistics on iplayer use.

Before making a decision, though, the Government, its European counterparts and Ofcom will need to do more to assess the ramifications of universal provision at a given speed in light of these factors. We will be inviting further comments and would welcome views on the costs and benefits of connectivity at different speeds.

Once the desired level of service has been established we will need to determine the mechanisms by which it can be delivered. Today only around 60% of households are customers of BT Retail; in broadband that figure falls to around 25%. The case for significant extra costs to fall on BT Group plc alone is a weak one. We expect that the costs of a future universal service commitment could be shared more widely, as it is in other countries, between a range of communications providers, and those who provide communication services over the network.

The contribution could be financial or in kind (for example, if the mobile network operators continued to build out their networks towards near-universal coverage, facilitated by the acquisition of additional wireless radio spectrum discussed earlier). Any new universal scheme design would need to ensure that it did not have negative effects on the market. In order to ensure those contributions remain proportionate to the end benefits, we expect that, as with today's USO, the end consumer should, beyond a certain point, make a contribution to the cost of providing connectivity.

Of course, there have already been steps taken in the UK – as highlighted above – to close not-spots. We intend to work closely with colleagues in the devolved administrations and the English Regional Development Agencies to ensure that their investment in broadband coverage works with our policies and public expenditure is not wasted or duplicated.

In Europe we will work with other member states to update the current universal services framework and to assess the options for provision and funding of such a commitment. This will enable us to modernise our domestic universal service policies to be fit for purpose in the digital era.

We are inviting views on the design and operation of a new, more broadly-based scheme for the fully digital age- how extensive it should be, who should contribute, how far any extension of coverage of other operators' networks (e.g. mobile networks) should already represent their contribution in kind, governance and accountability.

ACTION 17

We will develop plans for a digital Universal Service Commitment to be effective by 2012, delivered by a mixture of fixed and mobile, wired and wireless means. Subject to further study of the costs and benefits, we will set out our plans for the level of service which we believe should be universal. We anticipate this consideration will include options up to 2Mb/s.

ACTION 18

We will develop detailed proposals for the design and operation of a new, more broadly-based scheme to fund the Universal Service Commitment for

the fully digital age – including who should contribute and its governance and accountability structures.

4.2 Driving Universal Connectivity: Take-up

Much of the focus in this interim report so far has been on network capability, resilience and business models. These are necessary elements, but not at the heart of what will impel those who only use digital technology occasionally to make it central to their lives, still less to those who do not appreciate or value why they should adopt it in the first place.

But universal connectivity ultimately is about demand. It is about what it can do for you, not what it is. Lower prices, easier access, user friendly devices, skills and confidence all play a part in helping people to take up and make the most of broadband.

What really matters is great content and services. Much of this is for the private sector and for innovation.

Government can emulate the lead of some other parts of the public sector in leading people to the digital world. Within the wider public sector, the BBC iPlayer, which allows people of any age or background to understand the empowering freedoms of the new technology, is a good example.

The NHS, primary health authorities and the voluntary health and care sectors already provide easy to access health monitoring and information services, which has already shown the potential to innovate and provide new interactive services which can rise to the demands of users.

Government and public sector have begun to explore this enormous potential. The take up of broadband both drives and is driven by the attractiveness and the effectiveness of these innovative services. The Government aspires to be world leading in the creativity and effectiveness of these services, for which the first stage has to be the provision of the networks.

In the UK, an estimated 17 million people over the age of 15 are not using computers and the Internet.[7]

We need to build the awareness of the benefits of internet technology to enhance the life chances of all.

Otherwise inequality in the use and application of digital technologies is potentially a significant new driver of social exclusion in the 21st century, which risks accelerating existing social divides and creating new ones.

The Government has already taken a lead in this area by establishing a Cross-Government Digital Inclusion team under the first Minister for Digital Inclusion, Rt Hon Paul Murphy MP.

7 Dutton, W and Helsper, E (2007) *The Internet In Britain 2007*. (Oxford Internet Surveys)

Digital inclusion team

'The best use of digital technology, either directly or indirectly, is to improve the lives and life chances of all citizens and the places in which they live'.

In 2008 the Prime Minister appointed the first **Minister for Digital Inclusion** the Rt Hon Paul Murphy MP, supported by a **Cabinet Committee on Digital Inclusion** and the Minister's Cross-Government Digital Inclusion Team.

In October 2008 the Minister launched the consultation 'Delivering Digital Inclusion – An Action Plan for Consultation'. The Plan sets out for the first time an agreed cross-Government and cross-sector action plan to support all those not currently realising the benefits of the digital age detailing more than 70 cross-Government activities that build digital inclusion. The Plan also identifies future challenges, opportunities and aims for each policy area – children and families, learning and skills, digital inclusion, health, employment, benefits and pensions, transformational government, Directgov, digital infrastructure and markets, local service delivery, the third sector, innovation, transport, information sharing, citizen empowerment, justice, reoffending, culture, media and sport, internet safety, integrated health and social care, rural communities, environment, social exclusion, regional engagement and financial inclusion.

The **Cross-Government Digital Inclusion Team**, hosted by Communities and Local Government, coordinates this work and seeks to bring coherence to and synergy between digital inclusion and related initiatives across all sectors. For example, it is working closely with departments responsible for the Government's established Service Transformation and Digital Channels Strategy.

A key proposal is to establish a **Digital Inclusion Champion,** supported by an expert Taskforce. This person will be independent of, but very close to, the Government, creating synergies and providing strategic leadership and expert advice across all the sectors involved. It is intended that the Champion will provide a clear channel of communication between central and local government, industry, third and public sectors, and the client group, to ensure all available expertise and resource is harnessed in pursuit of a shared understanding of digital inclusion.

The consultation closed on 19 January 2009, and following analysis of responses, the appointment of the Digital Inclusion Champion is planned for late Spring 2009.

The Digital Britain team will work together with the Digital Inclusion team in Government and, when appointed, with the external Digital Champion to ensure that the Digital Britain project and the Digital Inclusion programme continue to be closely aligned.

To complement the Champion's work, other bodies and institutions have an important role to play.

Since their creation in 2000 UK Online Centres, based in libraries, citizens' advice bureaux, internet cafes and other publicly-available locations, have helped millions of people in England. They have particularly helped the disadvantaged or older people who have not encountered digital technology at work or do not have supportive family networks. The Centres provide a safe and supportive environment, often working well with voluntary and community organisations, to show the practical uses and benefits of the internet and the essential skills to use it. The Government is currently looking at how to harness the potential of UK Online Centres for supporting digital inclusion policies as a whole.

Digital adoption is also a key Charter purpose of the BBC. In broadband the BBC can perform a leading role it has in digital broadcast: marketing, cross-promotion and provision of content to drive interest in taking-up broadband. Public service organisations can also drive the development of platforms with open standards available to all content providers and device manufacturers alike. This open-platform approach has now been extended to broadband enabled TV devices to play a part in driving people towards broadband take-up. This will be closely linked to our work on media literacy or being digital, which we address later.

We will also work towards better services for intermediaries and people who help others, such as benefits advisors and Citizens Advice Bureaux. Many of these people are mobile (e.g. using a 3G card in a laptop in an elderly person's home), so increased mobile broadband coverage will help here too.

ACTION 19

We will encourage the development of public service champions of universal take-up. The Digital Inclusion Action Plan recommended the appointment of a Digital Inclusion Champion and expert taskforce to drive the Government's work on digital inclusion. Clearly, the work of the Champion will be important in encouraging take-up.

ACTION 20

We are inviting the BBC to play a leading role, just as it has in digital broadcast, through: marketing, cross-promotion and provision of content to drive interest in taking-up broadband. With other public service organisations, the BBC can drive the development of platforms with open standards available to all content providers and device manufacturers alike.

ACTION 21

A Public Service Delivery Plan: we commit to ensure that public services online are designed for ease of use by the widest range of citizens, taking advantage of the widespread uptake of broadband to offer an improved customer experience and encourage the shift to online channels in delivery and service support.

This will include working with industry to develop affordable, reliable and easy-to-use IPTV boxes – particularly relevant to those households currently without a PC and, when a critical mass of digital public service delivery is reached, around 2012-13, there could be a new scheme to assist remaining elderly and disadvantaged households to get online. This would draw on key lessons from the digital switchover scheme in television, notably the vital role of engagement with the third sector in identifying those most in practical need and providing the level of trusted quality contact to demonstrate the practical benefits of the technology and impart the basic skills to use it.