BSG submission to Welsh Affairs Select Committee

Digital Inclusion in Wales

17 April 2009

Introduction

The BSG welcomes the opportunity to input to the Committee's inquiry in to digital inclusion in Wales.

The BSG is the UK government's leading advisory group on broadband. It was established as a cross-sector government advisory group in 2001 to help the UK lead the G7 in broadband penetration and connectivity. It provides a neutral forum for collaboration between organisations across the converging broadband value-chain with the ultimate aim of helping to create a strong and competitive UK knowledge economy. Further information about the BSG can be found at: www.broadbanduk.org

As a result of this remit, the BSG has taken, and continues to take, a keen interest in digital inclusion. It has advised government on the importance of addressing the digital divide through a number of reports published since its inception. It was also a key partner on the government's Digital Challenge, which encouraged local authorities from across the UK to create innovative digital projects for their communities.[1] This process led to the creation of DC10+, a group set up by the finalists of this competition that develop best practice on approaches to digital inclusion.[2]

Digital inclusion is one of the central challenges facing every developed society across the world. As the Internet increases in its reach and importance, as new services are developed, and as technology gradually pervades every facet of our lives, ensuring that all citizens have the opportunity to benefit from these developments is an important concern for policymakers seeking to ensure fairness and equality across society.

Digital inclusion has received an increasing focus from government over recent years. Beginning with the government's initial Digital Strategy,[3] the issue has seen the creation of a ministerial post responsible for digital inclusion, and last year saw the publication of the government's 'Delivering Digital Inclusion: Action Plan' report.[4] The issue is now being addressed by the government's Digital Britain initiative, which will see further government action in this area.[5]

While digital inclusion is an important issue for the whole of the UK, the issue is particularly pertinent to Wales owing to its demographics and geography. The reasons for digital exclusion are varied, but are exacerbated within Wales by its more rural geography,[6] which impacts citizen's ability to access digital services, and its

[1] http://news.bbc.co.uk/1/hi/technology/6447527.stm
[2] For more information see http://www.dc10plus.net
[3] http://www.berr.gov.uk/files/file13434.pdf
[4] http://www.broadbanduk.org/component/option,com_docman/task,doc_view/gid,1091/
[5] http://www.broadbanduk.org/content/view/359/7/
[6] Wales has a significant rural population - http://www.statistics.gov.uk/cci/nugget.asp?id=1081

lower income per capita.[7] However, by the same measure Wales has much to gain by addressing digital inclusion.

The Committee's inquiry is wide-ranging and touches on many issues. While the BSG is active in many of these debates, most issues will have been covered by other stakeholders and respondents. Therefore, we are focusing our response on our core area of activity, broadband. In particular, we will review broadband infrastructure provision, take-up and usage, and the policy debates currently taking place within government, with a focus on the ongoing Digital Britain process.

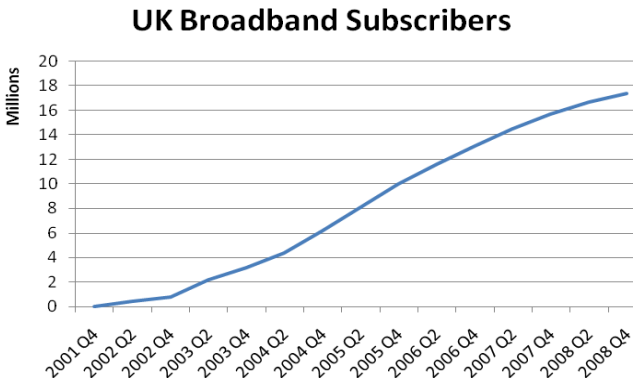
In the rest of this submission, we provide an overview of the current and next generation broadband debates to set the context for our views, before moving on to discuss broadband in Wales. We then offer some thoughts on the government's Digital Britain initiative and what this may mean for Wales, before providing our conclusions.

First generation broadband

The development of the UK broadband sector can be described as having had a slow start, followed by rapid take-up to the extent that, within a few years, it had become a world-leading broadband market in terms of coverage, take-up and price. This was facilitated by a regulatory framework that enabled competition and investment in the network, and driven by a competitive environment that saw a number of new entrants enter the market, along with competition provided by the cable network.

The last 12 months have seen the beginning of a slow-down in broadband take-up growth as the market nears saturation, coupled with the impact of the global recession.[8] Penetration has reached close to two thirds of households.

However, competition has continued to keep prices low, and network investment has enabled ADSL2+ technologies to be deployed, enabling even faster speeds for consumers.



Source: Point Topic for BSG

[7] Wales has the lowest GVA per capita of the UK nations and regions - http://www.statistics.gov.uk/pdfdir/gva1207.pdf - and a lower average weekly household income than the UK average - http://www.statistics.gov.uk/CCI/nugget.asp?ID=1158&Pos=2&ColRank=1&Rank=278

[8] The level of take-up at which the market will reach saturation depends on a number of variables. Previously, it was felt that PC penetration was a natural limit to broadband adoption. However, with the growth of the range of connected devices, this is no longer necessarily the case, and indeed broadband adoption could drive PC penetration. Further, there is also the issue of the number of homes within the UK that could take a service. A significant number of non-broadband homes are vacant or are second homes. For a fuller discussion please see http://www.rogerdarlington.me.uk/commswatch/2009/03/does_the_digital_divide_still.html

The take-up of first generation broadband has created significant benefits for UK society and the economy. Within Europe, the UK has the most active online population, the largest e-commerce market, and the highest level of online advertising spend.[9] UK citizens now have access to a wide range of public services online, and new commercial services are being created constantly. The positive impact of broadband on businesses and consumers has been reported in numerous studies, and broadband is now generally accepted amongst policymakers as a key enabler of a modern knowledge economy.

Broadband take-up and usage has also become a central tenet of creating a digitally inclusive society. The government's digital inclusion team have recognised the benefits of broadband access as part of being a digitally included member of society, and the government's recent interim Digital Britain report set out a vision for a broadband universal service commitment, to ensure that all citizens have access to broadband, in recognition of the importance of broadband access in modern life.

Next generation broadband

The success of broadband take-up, however, has led to a debate about how the UK should move to next generation broadband. The existing network is reaching its limits in terms of services it can deliver, while the volume of traffic is increasing year on year as more households move online and as new, more bandwidth-intensive services are launched. This has seen the policy debate shift over the last couple of years to next generation broadband, or superfast broadband.

The move to next generation broadband creates a range of issues for all stakeholders – the industry, government, regulator and consumer. These issues were clearly set out by the BSG's 2007 report 'Pipe Dreams? Prospects for Next Generation Broadband in the UK'.[10] The report set out a number of recommendations for all stakeholders based on a series of issues relating to the regulatory framework, the role for policymakers and public sector intervention, and the commercial models required to support investment in the network. Overall, the BSG believes that progress has been made on all of the recommendations over the last two years.

In June 2008, the BSG undertook a study into the likely economic and social value of superfast broadband to the UK.[11] This suggested that, although there would be significant costs to deploy next generation broadband, there would likely be significant benefits that would outweigh these costs. In particular, rural economies and societies would gain from those benefits that are based on travel and location substitution, which could be substantial.

During 2008, policy activity in the issue increased. In February 2008 Francesco Caio led an independent review for government into the barriers to next generation broadband deployment in the UK, which published its final report in September 2008.[12] This was followed by the government's Digital Britain initiative, which has identified superfast broadband as one of its key areas of focus. The government

[9] Broadband Stakeholder Group, June 2008, "A Framework for Evaluating the Value of Next Generation Broadband" http://www.broadbanduk.org/value
[10] http://www.broadbanduk.org/pipedreams
[11] BSG, "A Framework for Evaluating the Value of Next Generation Broadband"
[12] http://www.broadbanduk.org/content/view/304/7/

responded to the final Caio report in the interim Digital Britain Report in January 2009.

Although the Digital Britain process has yet to be completed, an emerging consensus between policymakers and other stakeholders is developing around the following view of superfast broadband in the UK. In the long term, it will be a key enabling infrastructure for the UK as a world-leading knowledge economy. In the near term, it is likely that private investment will deliver superfast broadband to UK consumers and businesses.

However, there will be limits to the extent of commercial deployment. A study published by the BSG last September as a contribution to the Caio Review suggested that, where a commercial case exists, it is likely to be applicable to 58% of UK households.[13] The high cost of deployment will make private sector investment in the remaining 42% challenging. Further, these areas are likely to be rural and remote locations, because the nature of the costs of deployment means that the less densely populated areas are more expensive to rollout to.

It is therefore likely that some form of public sector intervention will be required in these areas to provide superfast broadband. The appropriate timing and exact nature of these interventions will vary from location to location, but what is certain is that policymakers need to begin thinking creatively now about how to address this issue. Given the civil works required to deploy networks, deployment can take a number of years. Waiting to address this issue until commercial deployment has been completed could mean waiting for many years, during which time we could see the development of a new and more serious digital divide than the one that currently exists.

Broadband in Wales

Overview

Broadband adoption in Wales has shown growth slower than the UK average and that seen in the UK nations and regions, although it compares comparatively well to European peers. Welsh consumers experience speeds on average slower than consumers in the other UK nations. This can be largely explained by the greater proportion of rural households in Wales compared to other areas of the UK.

Broadband coverage and take-up has received significant attention from the Welsh Assembly, and has been on the policy agenda for a number of years. It will be important to maintain this policy commitment in the coming years, as there are significant prizes at stake for Welsh citizens, consumers and businesses.

The biggest of these prizes is that of superfast broadband, and the benefits this can bring. However, there is a real danger that, if it is not addressed by policymakers, an even greater digital divide could emerge as significant parts of Wales are left un-served by the market.

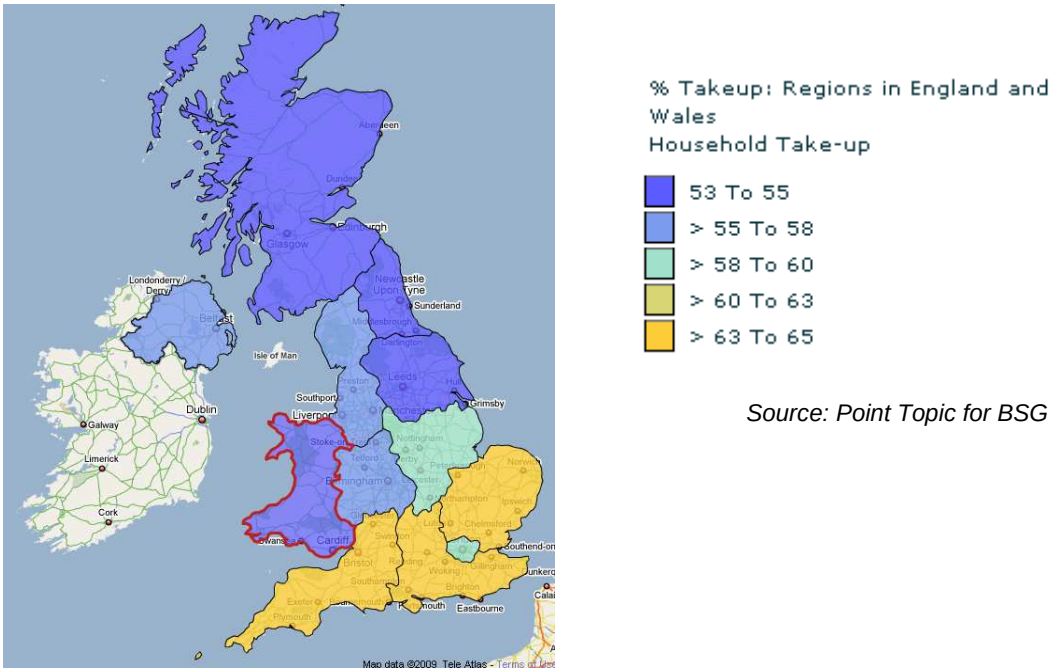
Current generation broadband

[13] Broadband Stakeholder Group, September 2008, "The costs of deploying fibre-based next-generation broadband infrastructure" http://www.broadbanduk.org/fibrecosts

Broadband inclusion is produced through two related activities: creating the infrastructure to enable access; and stimulating demand for the access. Here, we will review Wales' progress on these two sides of broadband inclusion.

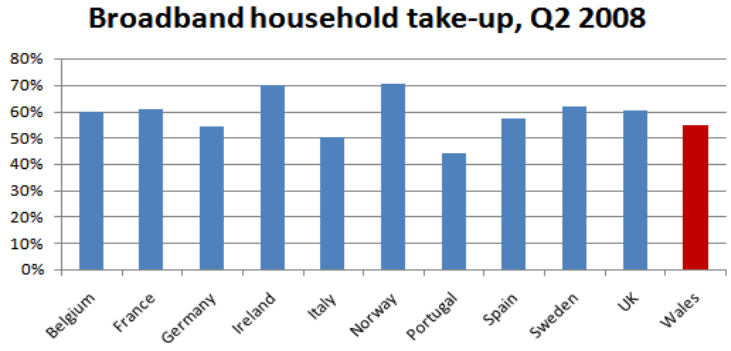
As of June 2008, broadband penetration in Wales stood at 55% of households, which made it amongst the worst performing UK nations and regions.

Percentage of households taking a broadband service



Source: Point Topic for BSG

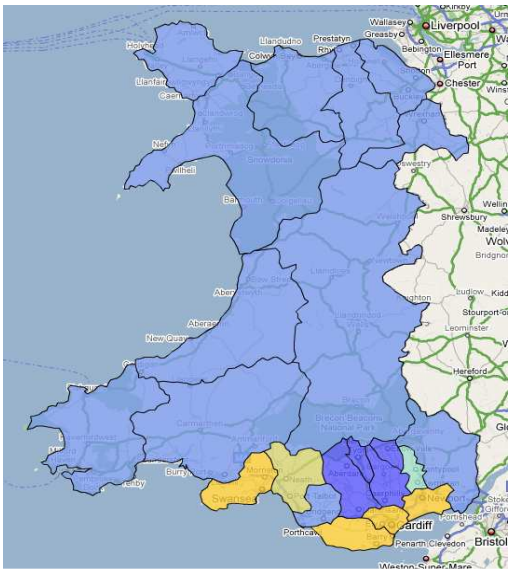
However, it compares well against European peers, with take-up higher than in Italy and Germany. This is an important reminder that although relative performance may be worse than other UK nations, Welsh performance on the whole is still above the EU average of 48% of households.



Source: Point Topic for BSG

Within Wales, take-up was most prominent amongst the more densely populated conurbations in the South, with lower levels of take-up in central and northern Wales, predominantly rural areas. This urban-rural divide is an important part of broadband access debates, and something we shall return to later.

Percentage of households taking a broadband service by Local Authority



Source: Point Topic for BSG

Reasons for non-adoption are complex and diverse. In some cases consumers simply won't be aware of the value or relevance of broadband to the way in which they live their lives, in other cases non-adoption will be closely linked to the complexities of social exclusion. This is supported by the most recent Ofcom Nations and Regions Communications Report, which stated that reasons cited by Welsh consumers for not purchasing a broadband service include cost (28% of non-users), no need (30%), and not having a computer (11%).[14] Addressing these varying reasons for non-adoption will require different approaches in each case.

However, this is broadly similar to results found across the UK. This would suggest that similar remedies to those put forward in existing policy debates in the UK are appropriate to Wales too, such as those outlined in the government's report 'Delivering Digital Inclusion: An Action Plan'. The BSG supports these proposals.

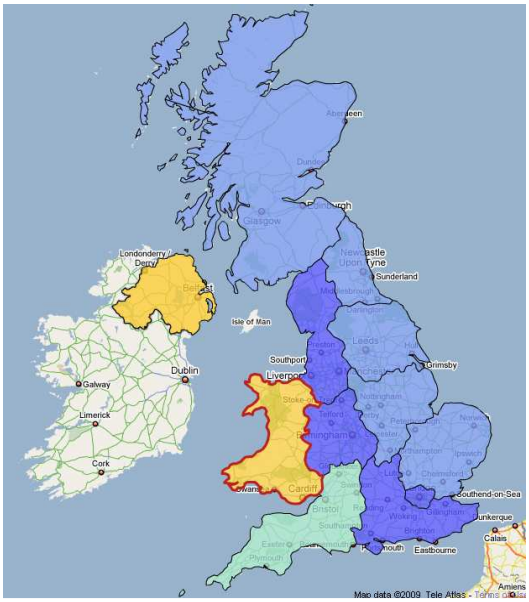
A more localised issue for Wales, however, has been that of infrastructure provision. As referenced above, the rural-urban divide is a common theme within broadband access debates due to the technical characteristics of broadband, which mean that the service deteriorates with the length of the line – the longer the line, the worse the possible service. In rural areas, on average longer lines are used to serve homes from the exchanges. Those homes with very long line lengths will often not be able to receive a broadband service at all – and these 'notspots' are more likely to be found in rural areas.

For Wales, this is a particular problem, given its greater proportion of rural homes than is found in other UK nations and regions. This is highlighted by the speeds achieved by consumers within Wales, with more homes being unable to achieve more than 2Mbps in Wales than any other UK nation or region, and similarly with

[14] http://www.broadbanduk.org/component/option,com_docman/task,doc_view/gid,1003/

fewer homes being able to achieve speeds of 8Mbps or higher than any other UK nation or region.

Percentage of households achieving less than 2Mbps

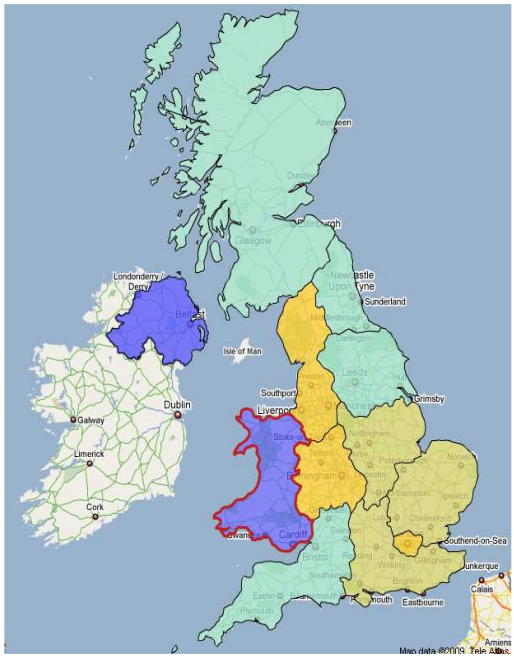


Percent of Households achieving Selected Speed by Local Authority in England and Wales
Slowband Land

- 0 To 14
- > 14 To 18
- > 18 To 20
- > 20 To 24
- > 24 To 34

Source: Point Topic for BSG

Percentage of households achieving 8Mbps or more



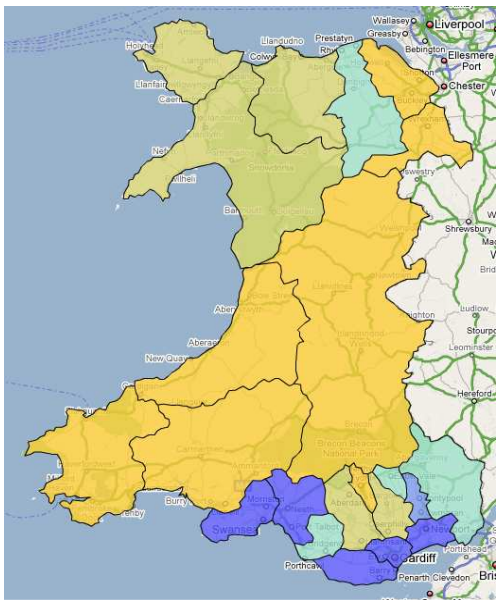
Percent of Households achieving Selected Speed by Local Authority in England and Wales
High Speed Heaven

- 36 To 44
- > 44 To 52
- > 52 To 64
- > 64 To 72
- > 72 To 96

Source: Point Topic for BSG

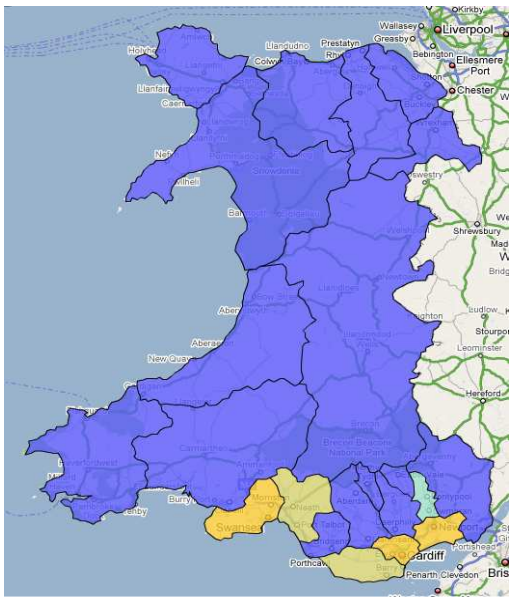
Within Wales, the impact of the urban-rural divide is further highlighted. The large conurbations in South Wales, surrounding Cardiff and Swansea, and to a lesser extent those in the North of Wales, are able to achieve faster services than those in the more rural areas of Wales.

Percentage of households achieving less than 2Mbps by Local Authority



Source: Point Topic for BSG

Percentage of households achieving more than 8Mbps by Local Authority



Source: Point Topic for BSG

Infrastructure provision has been a focus of Welsh government activity in the past. Previous activity has included providing funding to ensure all exchanges in Wales were broadband-enabled, and there is currently a scheme in place to register those who are in notspots that cannot receive any broadband service, with a view to addressing this lack of provision. The BSG advises that this scheme should work with, and be a part of, the government's proposed broadband universal service commitment, currently being developed through the Digital Britain initiative.

However, the challenge of infrastructure provision for current generation broadband suggests that a bigger issue will be facing Wales in the medium to long term – that of next generation, or superfast, broadband.

Next generation broadband

The investment required to deploy next generation broadband in the UK is of an order of magnitude greater than the investment required to deliver first generation broadband. This is because deployment requires replacing part, or all, of the copper wire from the exchange to the home with fibre optic cables. This requires significant civil works. In comparison, first generation broadband required the installation of new electronics in exchanges and in homes, and no new cabling to be laid.

The BSG published a cost modelling report in September 2008 that demonstrated the costs of deploying next generation broadband in the UK. The report modelled three different fibre technologies: fibre to the cabinet (FTTC), which involves replacing the copper from the exchange to the street cabinet with fibre; and two different types of fibre to the home (FTTH), which involves bringing fibre from the exchange all the way to individual homes. For simplicity, only FTTC will be discussed here, as this is the solution due to be deployed to 40% of homes by BT by 2012.

The report estimated that deploying FTTC across the UK would cost £5.1bn. However, the costs per home are heavily dependent on the household density in an area. This is due to the high level of fixed costs incurred during deployment – the more homes that are available to share this cost, the lower the cost per home connected.

The result of this characteristic of the costs of deployment means that, for the most densely populated areas covering the first 57% of homes (identified as A_{FTTC} on the graph below) the cost per home is roughly the same. However, these costs increase for the following 26% of homes (B_{FTTC}), likely to be rural homes, with the costs for the final 16% of homes (C_{FTTC}) being almost as expensive as for the first 57% of homes.

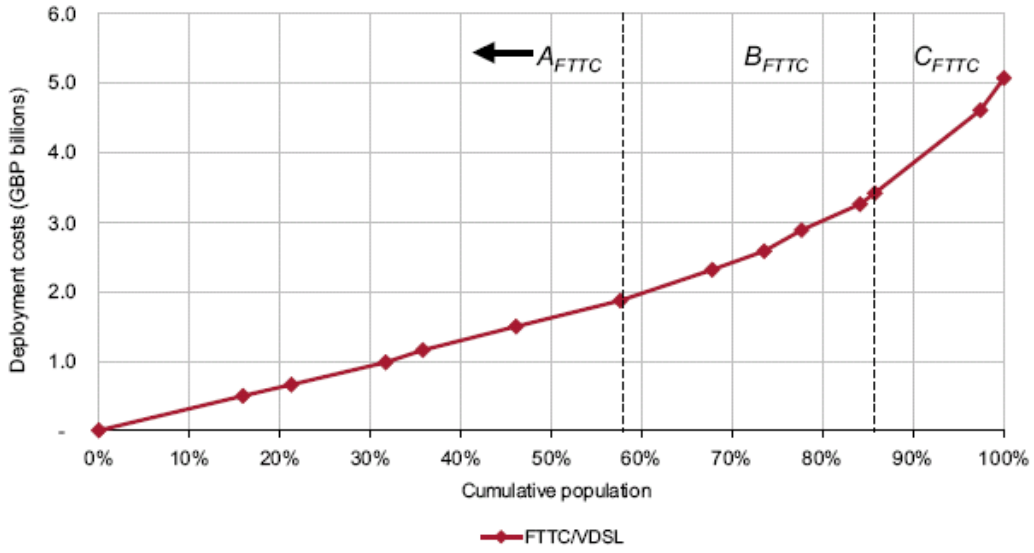


Figure 1.5: Total cost vs. percentage population for FTTC/VDSL [Source: Analysys Mason for BSG]

For Wales, with its more rural population, the extent of commercial deployment is likely to be less than elsewhere in the UK nations and regions. Based on the cost modelling report, it is likely that only 40% of households in Wales will be within the least expensive A_{FTTC} homes, to which market-led investment would be most likely. 34% of Welsh homes fall within the B_{FTTC} category, with 26% of homes in the C_{FTTC} area.

This would suggest that Wales could find that a larger proportion of its population are without superfast broadband access in the future than is the case across the rest of the UK. While this is clearly a concern for the digital inclusion debate, the impact of this could be heightened by the fact that it is rural economies and societies that could stand to gain the most from next generation broadband deployment.

This story is supported by previous commercial telecoms infrastructure deployment in Wales. The extent of the availability of local loop unbundling services, whereby alternative operators deploy their own equipment in BT's exchanges, provides a useful indicator of where the market has found deployment to be commercially viable. As suggested by the map below, unbundling services in Wales are mainly available around the conurbations in the South. In June 2008, Wales had fewer homes connected to unbundled exchanges (64%) than any other UK nation or region except Northern Ireland.

Unbundled exchanges in Wales

Source: Ofcom

A further indicator is the extent of the rollout of the cable network in Wales, which was the last time a civil works program to deploy telecoms infrastructure was undertaken in the UK. As with a commercial FTTC deployment, the cable deployment focused on the most densely populated areas, as the cost characteristics of this deployment are similar to that of next generation broadband.

As can be seen from the map below, the cable network again covers the dense conurbations in the South and the North of Wales. This is especially important, as Virgin Media are currently upgrading their network to achieve superfast broadband speeds of up to 50Mbps, comparable with FTTC. While their network covers almost 50% of UK households, so bringing next generation broadband to almost half the UK,

it passes only 20% of households in Wales. Wales has the lowest cable coverage of any nation or region in the UK.[15]

Cable network coverage in Wales

Source: Ofcom

It is likely, therefore, that the size of the challenge facing Wales in the long-term, to create a fully inclusive digital society, will be greater than that facing the UK as a whole. The less densely populated environment of Wales is likely to be less attractive for market-led investment (although those areas that are densely populated, such as Cardiff and Swansea, are more likely to see market-led deployment).

This creates both a challenge and an opportunity for Welsh policymakers. While the size of the challenge is significant, Wales could provide a useful test-bed for establishing approaches to public sector intervention in next generation broadband. It should be noted that these approaches should not simply be on the supply side, but could also focus on demand-side stimulation. This is because higher levels of take-up reduce the costs per home for deployment – high take-up could make the difference in some areas between investment being commercially viable and not for the market.

Public sector intervention in next generation broadband

While a reasonable view exists of the likely extent of market-led investment, we are still at the early stages of market-led deployment of next generation broadband. Until this investment is complete the extent of commercial deployment will be unknown. Any approaches to intervention should therefore be mindful of their impact on market investment, and should be designed to be as efficient and effective as possible.

In June 2008 the BSG published a report that set out models for public sector intervention in next generation broadband, on both the demand and supply side.[16] The report discovered a number of critical success factors for interventions.

[15] It is also worth noting that, at the time of this submission, no exchanges in Wales have yet been enabled to provide ADSL2+ services. So far, 452 exchanges in the UK have been enabled, with the rollout continuing. http://www.samknows.com/broadband/btwbc-league.php

- Interventions should not pre-empt the market, unless there are good grounds to do so.
- Interventions should use the open-access network model.
- Interventions should be designed to minimise the barriers to adoption by commercial retail service providers.
- Interventions should seek to stimulate and aggregate demand.
- Interventions should anticipate risks as far as possible via detailed planning.
- Interventions should comply with State Aid rules and other legal frameworks.

The report also set out a number of recommendations, in order to ensure that interventions are efficient and effective.

- Interventions should follow the critical success factors as far as possible.
- Next generation broadband deployment should be encouraged in areas of new build, regeneration and redevelopment.
- Pilot next generation broadband projects should be coordinated with a clear goal.
- Interventions should seek to offer a standard set of wholesale products.
- Interventions should consider using the same commercial partners.
- Additional work should be carried out to help provide clarity on the commercial business case.
- Interventions should define appropriate metrics for measuring success, which should be measured throughout the lifetime of the intervention.

Of particular importance is the need to ensure that interventions minimise the barriers to adoption for commercial retail service providers. The standardisation and harmonisation of interventions will have an important role to play in ensuring they are efficient and effective. Within this, a focus on developing standard wholesale products, using the same commercial partners, and aggregating demand (and projects) all have important roles to play.

Without harmonisation, commercial retail service providers are unlikely to provide services over these networks. This is due to their insufficient scale, and the costs service providers would incur through creating new systems to provide services over the network. This, in turn, would mean that consumers would not have the full choice of service providers.

An example of this occurring can be seen in the current generation broadband market, where Hull only have services provided by KCOM, the incumbent in the area. Commercial retail service providers do not provide services over this network as the cost involved in connecting to this network means that service provision is not commercially viable for them.

This issue, first raised by the BSG in its June 2008 report, has since been accepted by government through the Caio review and the Digital Britain Interim Report, and by the industry and regulator. As a first step to addressing this issue, the BSG is undertaking a project with the Community Broadband Network (CBN) to develop appropriate standards for local networks, to ensure that the barriers to service provision on these networks are minimised for commercial retail service providers.

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[16] Broadband Stakeholder Group, June 2008, "Models for efficient and effective public sector interventions in next generation broadband access networks" http://www.broadbanduk.org/psi

It is the BSG's position that any public sector intervention in Wales should follow the critical success factors and other recommendations set out in our report. Further, they should work with the standardisation and harmonisation process currently being developed by the BSG and CBN, as a way to achieving the most efficient and effective outcome.

Digital Britain

The government's Digital Britain initiative is addressing a series of wide-ranging and interconnected issues facing the converging sectors of telecoms, media, and technology. The BSG has welcomed the process for its holistic approach, joining up thinking on a range of issues that had previously been addressed only as standalone challenges.

Within this framework, the government is examining approaches to increasing broadband take-up and coverage, and is re-examining the issue of next generation broadband.

On first generation broadband, government has proposed a broadband universal service commitment, to ensure every household in the UK has access to a broadband service, at a service level yet to be defined. The rationale behind this is to support online public service delivery, eventually allowing government to recover efficiency savings through the switch-off of 'analogue' public services. It is anticipated that this will drive take-up amongst those who are currently non-adopters.

The BSG has welcomed this concept, and first proposed the concept of a broadband universal service commitment in November last year, in a speech made by BSG Chairman Kip Meek at the BSG's Autumn reception.[17] While the devil will be in the detail of how such a concept would work in practice, the goals of driving take-up and moving public service delivery online are supported by the BSG.

To further increase take-up, the government has reiterated its support for the conclusions set out in the 'Delivering Digital Inclusion' report, has set out a process for creating a new national media literacy plan, and has suggested that the BBC be asked to play a role in increasing broadband take-up amongst the remaining non-adopters. The BSG has cautiously welcomed these developments, and has highlighted issues the government will need to consider with these ideas.[18]

On next generation broadband, the Digital Britain Interim Report set out its strategic importance for the future of the UK's knowledge economy. A series of actions were set out in order to assess whether there is a role for public sector intervention in next generation broadband, and to reconsider the conclusions drawn by the Caio review, which took place in very different economic circumstances.

All of these developments will have important impacts on digital inclusion in Wales. Future approaches to tackling digital exclusion in Wales should build on the progress made through the Digital Britain Report, when its final version is published in June this year.

[17] http://www.broadbanduk.org/content/view/350/7/

[18] For the BSG response to the Digital Britain Interim Report see http://www.broadbanduk.org/content/view/364/7/

Given the particular circumstances in Wales, however, there may be scope for the Welsh Assembly to consider its own approach to digital inclusion, particularly on the strategically important issue of next generation broadband. Given the likelihood that more public intervention will be required in Wales than elsewhere in the UK to bring next generation broadband to all, it may be that a different, more interventionist approach could be appropriate in Wales, particularly if the final Digital Britain Report finds no case for public sector intervention generally in the UK.

However, as discussed above we are still at the early stages of market-led deployment of next generation broadband, and any interventions should adhere to the recommendations set out above.

Conclusion

Digital inclusion is a wide-ranging issue, with links to the broader social inclusion agenda. While a range of measures are needed to tackle the various challenges of digital inclusion, increasing broadband take-up and coverage are important elements of any digital inclusion strategy. As this is currently the case for current generation broadband, so it is likely to be for next generation broadband in the future.

Within Wales, the issue is perhaps more acute than many other nations and regions in the UK as discussed above. While this may apply to many of the issues involved in digital inclusion, specifically here we have discussed the infrastructure challenges facing Wales, with a focus on next generation broadband.

Currently there is a comprehensive national policy debate taking place on these issues through the Digital Britain initiative, and stakeholders are waiting to see what will be in the final report when it is published in June this year. However, depending on the outcome of Digital Britain and given the circumstances in Wales, there may be scope for an approach tailored to address the specific issues facing Wales.

Where this is the preferred approach, any interventions should follow the recommendations of our June 2008 report on public sector interventions, and be aware of the ongoing standardisation work for local next generation broadband networks.