Cynulliad Cenedlaethol Cymru / National Assembly for Wales

Pwyllgor yr Economi, Seilwaith a Sgiliau / Economy, Infrastructure and Skills Committee

Seilwaith digidol Cymru / Digital infrastructure in Wales

Ymateb gan BT Group/ Evidence from BT Group

Economy, Infrastructure and Skills Committee
National Assembly for Wales
Cardiff Bay
Cardiff
CF99 1NA

20 December, 2016

Dear Committee Members,

Call for Evidence: Inquiry into Digital Infrastructure in Wales

What is the performance to date of the roll-out and take-up of Superfast Cymru, including the extent to which the project has been communicated to people in the intervention area and interim targets have been met?

BT is proud to be delivering Superfast Cymru in partnership with Welsh Government. Wales is on the cusp of 90% coverage at 30mbps[i] when also taking into account coverage attributed to our fibre broadband commercial investments. Prior to Superfast Cymru, coverage was approximately 40%. Therefore the project has been a huge success so far, allowing benefit to be delivered to homes and businesses as the project has progressed. Ofcom's latest Connected Nations Report[ii] acknowledges the "good progress on the availability and take-up of communications services". Local Authorities in Wales that have had no coverage from commercial providers have seen significant uplifts in availability, such as Blaenau Gwent – was at 0% and now at over 97% coverage[i]. Wales has more fibre broadband as a percentage of coverage than Germany, France, Italy and Spain. Wales is also ahead of the other devolved nations.

By the end of December 2016, BT's fibre footprint through Superfast Cymru is forecast to have passed 700,000 premises. Welsh Government has verified that 620,000 premises can receive superfast speeds so far. It's worth noting that there is a lag between premises receiving a service and Welsh Government verification. There are premises in the 700,000 number that receive less than 24mbps and will not be classified as superfast - BT will be working on uplifting some of these speeds where viable.

An open access network has been put in place allowing a multitude of retail providers to offer their services. This competitive environment means ISPs are chasing business resulting in low costs for the consumer. It is important to note that BT's consumer business has equal access to the network alongside all other service providers.

The speed of rollout has been unprecedented, a fact not well understood by stakeholders. Superfast Cymru has re-used the wider UK experience of delivering high speed broadband to over 25 million premises. The equivalent of Singapore has been delivered every three months in the UK at its peak. Fibre to the Premise (FTTP) is being rolled out across rural Wales in particular. At this stage of the project with less than a year to run, very challenging parts of Wales remain to be completed. The outlook is positive and BT is committed to ensuring the schedule of work is achieved.

Superfast Cymru has a gainshare clause written into the contract which means that beyond 20% overall take-up, BT begin to return funding annually into an investment fund to spend on further broadband improvements. Take-up currently stands at c28%. BT made the decision in 2015 to bring forward £12m of this money (before even being accrued) for more coverage to be delivered earlier than otherwise would happen.

On communications, it is very difficult to predict availability dates for individual areas due to the number of factors which influence when infrastructure can be built. Factors include the ability to find power sources in rural areas that are cost effective, the need to apply for road closures that cannot be obtained immediately and land access. Land access is a particular challenge and time consuming to resolve. For example, in order to deliver 229 premises in Hirwain and 205 premises in Worthen, 11 and 10 wayleaves respectively need to be resolved. This takes time. It should be noted that BT is not contracted to deliver fibre structures by dates, it is contracted to deliver volume of premises across Wales. Whilst elected members see communication from constituents about 'delays', what they do not hear about is when service has been successfully delivered – as happens in the vast majority of cases. A recent report commissioned by Welsh Government identified that for every £1 invested, £6.70 in GVA will be delivered by 2024. With coverage on the verge of exceeding 90%, focus should be put onto driving exploitation whilst the build is allowed to complete.

Industry commentators have lamented the fact that Wales and the UK have not aspired to full FTTP. A report by Communications Chambers[iii] states that the UK does have one of the lowest FTTP coverages yet average speeds in the UK are higher than Spain and Portugal which have around 60% FTTP coverage. Japan has over 90% coverage but average speeds only slightly higher than the UK's average. The report concludes that there is therefore a poor correlation between FTTP

network and actual broadband speeds. It is also BT's experience that very few customers take up high bandwidth products. The same report mentions that Norway with very high FTTP penetration has just 8% of users choosing products of 100mbps or more. This of course is the case in 2016 but our infrastructure is there for the long term and where speeds are likely to increase over time has been built with expandability in mind.

Many countries with high FTTP penetration such as Japan, Korea, Spain and Portugal correlate closely with the percentage of people living in multi dwelling units. In the case of Spain and Portugal, c50% and 60% respectively live in multi dwelling units where deployment costs are very less expensive than the distributed way people live in Wales. The UK has less than 10% of people living in multi dwelling units[iii] thus the cost of deployment of full FTTP from day one would have been very high.

Superfast Cymru is the right project for Wales and BT the right partner to deliver it.

What work can Welsh Government do to improve mobile coverage, including use of the planning system?

Ofcom notes in its latest Connected Nations report that EE has the highest level of voice and data coverage in Wales. Nevertheless, EE has ambitious plans to go further for Welsh mobile coverage. We anticipate reaching c.90% 4G geographic coverage of Wales by the end of 2017 through upgrading our existing network and building new sites. We have also set an ambition to reach 95% geographic coverage of the UK by 2020 which will see further coverage improvement for Wales. At the end of 2015, EE won the contract to deliver a new 4G voice and data network for Britain's emergency services. The additional infrastructure being built to meet that contract will also benefit the people and businesses of Wales.

Low population density and the physical geography of certain areas of Wales make it challenging to deliver mobile connectivity. The Welsh Government can lower some of the hurdles mobile network operators face in delivering new sites by reducing capital and operating expenditures, and by amending the planning system to better reflect the importance of digital inclusion.

Capital Expenditure: Power is a major cost in building remote sites. Whilst costs are regulated, we would urge the Welsh Government to consider how they can contribute to the costs of laying power cables to new mobile sites, supporting the reduction of substantial cost barrier to new rural sites in particular.

The use of Government assets is a direct way in which Welsh Government can support mobile networks. The Scottish Government has already stated that the aim of initiatives to allow use of public sector assets is to improve coverage rather than generate revenue. This is a powerful statement of principle on the importance of the digital economy and we would encourage Welsh Government to match that ambition in its offer of public assets.

Operating Expenditure: Non-domestic rates can often have a bearing on the speed and extent of marginal sites. The Scottish Government is currently trialling rate relief on new sites in non-commercial areas, including the Isle of Arran and the Cairngorms National Park. A similar rate relief that covers new sites and upgrades to existing sites in the Snowdonia, Pembrokeshire Coast and the Brecon Beacons National Parks would improve the case for new sites in those areas, whilst not representing any loss of revenue to local authorities. Snowdonia National Park alone covers a third of the landmass of North Wales. By stimulating greater coverage, such rate relief could encourage new businesses into an area, with the associated positive impact on business rate collections overall. We also believe that a site that exists purely as a 'hop' site, to enable coverage in a more rural location and does not transmit coverage itself, should be exempt from business rates.

Reform of the planning system: New technology moves rapidly and with 5G deployment in the UK likely from the start of the next decade, the infrastructure that is built now will be key to how quickly 5G – and other technologies – can be rolled out in the future. It is therefore key that planning regimes and guidance meet the needs of the future, not the concerns of the past. Planning law in England has recently changed to support mobile network infrastructure and the Scottish Government has just closed a consultation on planning law in Scotland. Wales is lagging significantly behind.

The Welsh Government must implement improvements to the planning regime, including:

- Strong permitted Development Rights for small cells in protected areas
- Permitted Development Rights for upgrades to existing ground-based masts or structures;
- Permitted Development Rights for new ground-based masts
- Permitted Development Rights for emergency works.
- Addressing the issue concerning time limits to planning consents.

Moving towards the closer alignment of planning policy on fibre and mobile assets would also be welcome. Planning guidance should be technologically neutral as far as possible.

Welsh Government should also consider removing the time restrictions on planning consents. For example, in Snowdonia this is a particular problem where the planning authority seeks to add a ten year condition.

What has been the efficacy of the Welsh Government's other broadband schemes, such as Access Broadband Cymru and Ultrafast Connectivity Vouchers?

Welsh Government's two schemes are the most generous in the UK. BT is not participating in ABC as the money can only be used for connection and not the building of infrastructure. Informal discussions have taken place between BT and Welsh Government on our participation, but it would require a major policy change on their part. BT runs a scheme called Community Fibre Partnerships which allow not spot communities to work with BT to define a solution. This involves the building of infrastructure and not just connection to existing equipment.

BT is currently trialling participating in the Ultrafast Connectivity Scheme.

What are the plans for the Superfast Cymru successor scheme?

Welsh Ministers have announced that they will be releasing an Invitation to Tender in 2017 for a successor scheme to Superfast Cymru. This will be to address the not-spots in the last few percent of Wales.

Across other parts of the UK, Councils funded by Broadband Delivery UK (BDUK) and Local Enterprise Partnerships are requesting Ultrafast broadband, i.e. over 100mb capability and encouraging 1Gbps capability for business parks. Fixed fibre is therefore deployed to rural areas as far as possible before other solutions are considered. Wales should aspire to the same for a successor scheme and match this ambition. BT's G.Fast and FTTP solutions can achieve over 100mb and up to 1Gbps requirements respectively. BT strongly advocate taking fixed fibre as far as possible in Wales before considering other alternative broadband technologies. Developments in fibre deployment should mean fibre can go a lot further at a lower price point.

A successor scheme will only be able to intervene in the areas where Superfast Cymru has not benefitted. It is not anticipated that the 'intervention area' will be contiguous but very distributed and therefore very difficult and expensive to fill.

BT's network is open meaning retail providers can complete for business. Big names offering product bundles such as Sky, Talk Talk and BT Consumer all compete for a consumer's business. No other infrastructure provider offers such an array of retail competition. A non BT solution, would potentially see neighbours being offered a limited monopoly retail service even though the network would have to be procured as open access. It is BT's belief that customers want real and not a façade of retail choice.

BT have put forward plans to UK Government on meeting their requirement for a 10Mbps universal service obligation. We can deliver universal coverage without legislation or public funding with the right regulatory and policy environment and we are waiting for clarification from Government on how we can work together on this.

How could alternative technologies be used to improve superfast broadband and mobile coverage?

Fixed Wireless solutions have been deployed by publically funded programmes in various parts of UK including Wales. BT do not have any of this type of network in any of its BDUK funded programmes anywhere in the UK as we do not see them as sustainable. The actual performance of a wireless technology is dependent on 3 key variables: Distance of the user from the cell site or mast; the number of users active in the cell at any one time; the amount of spectrum available for use at the mast.

For any particular user in a fixed wireless system, two of these variables i.e. distance from the cell site and the amount of spectrum, will be fixed but the third; the number of active users, will vary throughout the day and in relatively unpredictable and uncontrollable ways. This makes effective prediction of user performance difficult for these networks.

As an analogy we can consider delivery of NGA via Fibre (FTTP or FTTC) as like a hosepipe delivering water direct to a garden. The amount of water coming through the hose and therefore available to the user on the end of the hose is predictable although water pressure in the mains system may drop slightly at very busy times resulting in slightly reduced flow. With

fixed wireless the same hosepipe can be considered as delivering the same type of fixed flow to the radio mast (determined by the amount of spectrum available) but in this case it is delivered by a sprinkler system attached to the hose. The water is spread over a much larger area of course and is thus available to lots more parts of the garden, but the actual amount of water each part receives is only a fraction of the total. It is possible to focus the direction of the sprinkler onto one part of the garden or another but in doing so other parts of the garden must effectively go without any water. Similarly the more the water is spread over a bigger radius of coverage the less there is to go around. The same basic principle applies to the distribution of bandwidth to multiple users in a fixed wireless system.

In assessing the ability of fixed wireless to deliver an NGA service it is therefore imperative to understand how bandwidth in any system will vary with distance to the end user and the number of simultaneous users that will realistically use the service in a particular cell area. This assessment will be critical to establish the sustained rate that users are likely to experience in any real deployment.

BT does not consider these technologies have developed to an extent where they are capable of sustaining NGA capabilities in any real network scenario i.e. where there are multiple simultaneous users spread over a range of different distances from the mast. These users will receive a sustained speed significantly lower than the theoretical peak speed achievable by a single user very close to the mast typically quoted in press releases etc.

In Sweden the government has recently committed to delivering total coverage by 2025. In doing so they have recognised a geographical split between the 98% who will receive at least 100mb from a fixed solution, with the rest getting at least 30mb from a satellite as this small percentage are too remote to receive a fixed service. Wireless is not being considered therefore for the bulk.

5G is in development, not mature and not expected to be commercially available in the timeline of the successor scheme. It is BT's belief therefore that fixed fibre solutions are the best.

On the mobile front, EE continues to trial new small cell technology in communities. Our small cells solution uses the 4G network to provide inband backhaul, which means they are not reliant on fibre being present at a community. Once built, this infrastructure can be used to support future technologies and the spectrum they will use. Reform of the planning system to ensure flexibility over the number of small cells that can be deployed under permitted development, including in National Parks, would be enormously helpful to the further roll-out of this technology.

EE is also considering the use of Airmasts to provide temporary coverage. The solution is particularly good for resilience issues. Like any infrastructure, a range of external factors can impact on service – for example, flooding, extreme temperatures, arson attacks, storm damage. Having a back-up option to deploy replacement coverage quickly will make a huge difference to the customers affected.

How could Welsh Government learn from international examples of public sector intervention in the roll-out of broadband and mobile coverage?

It is BT's belief that Wales is a leader in public sector intervention in the rollout of broadband. It is receiving a high performance fibre network for a low cost, less than Australia (£1,931 per premise), New Zealand (£699 p/p), France (£445 p/p) and Singapore (£355 p/p)[iii]. It is very difficult to run direct comparisons with other countries as their regulatory and planning systems are different.

Finally, the network being deployed in Wales by BT is competition ready and has a large and diverse ecosystem of retail providers operating on that network. Other countries have very different regulatory regimes where single national operators dominate at both a network and retail level.

Edward Hunt,
BT Group

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[i] Think Broadband: http://labs.thinkbroadband.com/local/wales

[ii] https://www.ofcom.org.uk/about-ofcom/latest/media/media-releases/2016/digital-divide-declines/superfast-broadband-in-wales, Ofcom, 16/12/16

[iii] Communications Chambers, Robert Kenny, "An Analysis of FTTP's role in UK Connectivity. The Evidence For a Targeted Approach"