House of Commons Culture, Media and Sport Committee inquiry: Establishing world-class connectivity throughout the UK, evidence from BT September 2015

BT Evidence to the House of Commons Culture, Media and Sport Committee inquiry: Establishing world-class connectivity throughout the UK

1. **What role should Government, Ofcom, and industry play in extending superfast broadband to hard-to-reach premises?**

Each of the government, Ofcom and industry has a role to play in extending superfast broadband to hard-to-reach places. It is for commercial parties to deploy superfast broadband infrastructure as far as they can commercially. However, there are limits to the extent to which superfast broadband can be deployed on a commercial basis by the industry alone, because the revenue and margin that can be earned are insufficient to support a commercial business case for investment. Ofcom's role is to create the right regulatory environment to promote investment and competition, so that the scope of commercial investment is as wide as possible. The government needs to continue to accept, as it has done to date, that it has a role to promote investment, to help ensure the UK's broadband infrastructure continues to be a world leader with strong investment from industry. Specifically:

- industry's role is to innovate and invest to roll out fibre commercially as far and as fast as possible in order to meet market needs
- there are social and general economic benefits to broadband infrastructure beyond commercial objectives; government can invest subject to state-aid rules to ensure the UK economy can capture these benefits as it has done under the BDUK rural broadband programme, for example
- government also has a role to ensure the investment environment, planning rules, availability of power supply and other services, etc, are conducive to infrastructure build
- Ofcom's role is to ensure that regulation promotes long-term investment and the interests of consumers and wider industry, promoting the competition model best suited to these objectives. For example, determining whether to promote multiple competing networks or to ensure service competition over fewer networks.

2. **Is there sufficient competition in these markets? If not, how can any market failures best be addressed given the investments already made?**

Competition should be considered at two levels, competition in the 'downstream' retail markets and competition in the 'upstream' markets for the provision of infrastructure.

Competition in the retail markets is thriving in the UK market with very high levels of broadband availability, low prices, numerous providers, offering plenty of consumer choice and very high take-up, plus superfast broadband availability at over 88% of UK premises according to the latest EU scoreboard data and growing.

There are over 500 competing communications providers (CPs), ranging from the 'big four' national service providers to small bespoke local and specialist business providers, offering a range of broadband services, including fast business networks, such as Ethernet, and

bundles of communications services across the UK. This has led to very high levels of take up, highest of the five largest EU economies, and use of broadband and related services by UK consumers.

This UK's competitive retail market is distinct from most markets around the world in that it is fundamentally underpinned by the infrastructure that Openreach has deployed across the UK and made available to all CPs on an equal-access basis (equivalence of input (EoI)). This means any CP in the UK can gain access to any customer on the Openreach network and offer a range of broadband services, including superfast broadband on equivalent terms to any other CP meaning that the barriers to entry into this market are kept very low, enabling a wealth of competing players.

In the upstream market for provision of broadband infrastructure, there is competition to the Openreach network from Virgin Media, well established across virtually half of the UK population, and now expanding following Virgin Media's announcement that it plans to increase its coverage by 3 million additional premises. At the same time, there are numerous smaller network operators deploying broadband networks in competition with Openreach and Virgin Media, including Hyperoptic, Gigaclear and City Fibre Holdings. In addition to these fixed-line providers, customers also have a choice of competitive technologies for broadband supply, including 4G mobile as a broadband technology and satellite.

It is therefore important to note that the UK market is already a world leader in terms of coverage, price and competition. It should also be recognised that infrastructure and service competition have different effects, impacts and likelihood of occurring depending on where you are in the UK, resulting in the need for different regulatory and policy measures depending on the type of competition promoted.

The 'market failure', if it may be called that, which many would identify as the fact that in some parts of the country the market has not found a commercially viable investment opportunity. A fundamental feature of telecoms networks is that it is more expensive to deploy networks to customers that are geographically dispersed than to customers that are densely located. In rural areas particularly, where network deployment is very expensive, it is difficult to build a commercial case to deploy networks, when prices for network services are set on a uniform national basis, regardless of the commercial cost of serving different areas. It becomes increasingly difficult to sustain competitive/parallel infrastructure deployment as the cost of deployment per customer rise.

The Openreach model of open-access infrastructure and service competition is logical when more than one competing fixed infrastructures are unlikely. An alternative approach of removing service competition in favour of infrastructure competition has little or no track record of delivering beyond two fixed infrastructure providers, and even then only in densely populated areas.

Areas of market failure

However, there are areas where the commercial case for investment in next generation access (NGA) infrastructure is not viable, resulting in some parts of the country having no NGA infrastructure. By the end of 2017 this will equate to some 5% of UK premises. These are largely confined to rural areas. However, there are also some limited city areas in the UK where commercial investment and infrastructure competition is highly unlikely. These arise for the same basic reasons as in rural areas: high costs of rearranging networks, including lack of cabinet infrastructure, other network configuration problems and planning issues, and also low take-up because of good copper broadband speeds and low residential population and/or a combination of all of these).

Addressing market failures

In order to ensure that areas without good network coverage are kept to a minimum, a number of policy and regulatory levers could be used to remove barriers to investment.

Some deployments have been obstructed by relatively slow and inconsistent planning processes and, in some early deployments, parts of local councils actively hindering deployments. This has made it difficult to address some geographical markets.

Industry and central government must continue to engage with local bodies to ensure that these issues are resolved. Central government has made several improvements to the planning regime and is considering others, and has also supported industry initiatives with co-operating councils around issues such as producing a standardised wayleave agreement. The government is also in the process of transposing the High Speed Broadband Cost Reduction Directive (2014/61/EU) which should help reduce some of the civil engineering costs of deploying networks.

However, in spite of policy actions to reduce barriers and ensure commercial deployment goes as far as possible, there will be areas where the commercial case for superfast broadband is not viable. There are a range of actions available to both government and the regulator where this happens. The government could intervene through subsidy. So far, this has principally happened via the BDUK programme, which has helped finance fixed superfast broadband deployment in the final third of UK premises that weren't in any operators' commercial plans. It has also intervened via the Mobile Infrastructure Project (MIP) which aims to bring mobile connectivity to complete mobile not-spots. To date, however, it has not intervened to address the equivalent limitations on network coverage in cities and it should actively seek to do so. It is also important that the government continues to press forward with its plans to assist in deploying superfast broadband beyond the 95% current target.

3. **What are the commercial, financial and technical challenges the programme faces in reaching the final 5%? What technologies exist to overcome them? What investment is required, by whom and for what return?**

A fundamental feature of telecoms networks is that it is more expensive to deploy networks to customers that are geographically dispersed than to customers that are densely located. This is in principle true for both fixed and mobile networks. As a result it becomes commercially challenging to provide ubiquitous coverage: at some point the costs will exceed the likely revenues and the commercial case for deployment will fail. The issues are commercial rather than financial: it is not a limit on capital availability to finance network coverage, but a limit on the extent of commercial businesses. There is no evidence to suggest that lack of financial capital restrains network deployment.

It is also not a technological challenge. The technological issue is one of trade-offs between cost of networks versus the speed, capacity and coverage that they deliver. Different technologies, fixed fibre solutions, terrestrial wireless (4G) or satellite delivery, can all have a part to play in delivering a mix of outcomes between cost, speed capacity and coverage in different circumstances. Fibre is by far the highest speed and capacity technology. 4G may have a role to play in dispersed localities, but its speed and capacity is less than fibre. BT's fibre broadband network has about 10 times the capacity as a typical 4G network dedicated to mobile data services. Satellite has a role in the hardest to reach places, but its capacity is limited. The entirety of UK satellite broadband capacity is the equivalent of about one of the 60,000 fibre cabinets in BT's network.

Fibre to the premises (FTTP) could be delivered virtually everywhere in the UK, even in the 'hardest to reach' areas, and has the potential to deliver unmatchable speed and capacity. There is not a genuine technical challenge to delivering such a future-proof high-speed network in all but the very most challenging areas. However, it is very expensive (multiple tens of £billions) to deploy and well beyond any current commercial case for investment or public intervention intentions, though BT's laboratories are working to reduce cost and time to deploy, this is described later in this response. Also, on top of being very expensive, it would take considerably longer. Coverage would be considerably less than now if FTTP had been the default technology to deliver high speed fibre services.

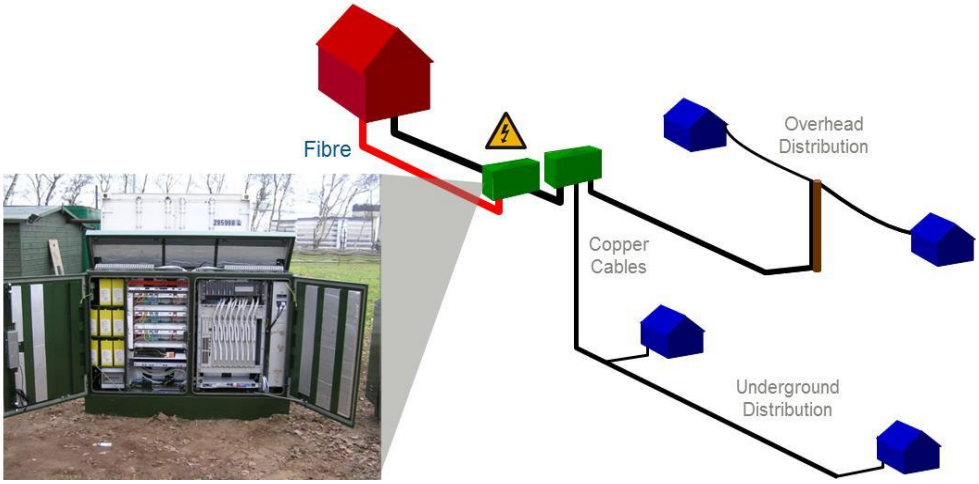
BT has developed a range of technologies and we are continuing to develop them to be as flexible as possible in meeting potential future demands within the current commercial investment case. We have also sought to extend the use of these technologies with the help of government funding to ensure services are delivered across the majority of the UK. The three main technologies are:

- Fibre to the Cabinet (FTTC, see following diagram), which allows superfast services to be delivered to most of the UK at speeds of up to 80Mbit/s currently. It can be delivered quickly and at relatively low cost, with over 20 million premises already delivered commercially under our £2.5bn commercial programme. FTTC is also the main stay of the BDUK programme, with over 3million premises to date and growing. It is based on Very high bit-rate Digital Subscriber Line (VDSL) technology. High-speed fibre is used to connect exchanges to cabinets so only relatively short lengths of

copper, which cannot carry the huge amount of bandwidth fibre can, run from cabinets to individual premises.

BT Openreach FTTC solution:

Superfast Broadband: *FTTC*



- Fibre to the Premise (FTTP, see following diagram) is the most 'future proof' of the current technologies, offering the ability to deliver multi Gigabit speeds. However, the costs of delivering the fibre to individual premises would be very expensive and prohibitive due to the need for new infrastructure (ducts/poles etc) all the way to every premise. Also, every premise in the UK would need to be visited, accessed and have equipment installed, which would extend such a scheme by years potentially. FTTC requires no premises access.

BT/Openreach FTTP solution

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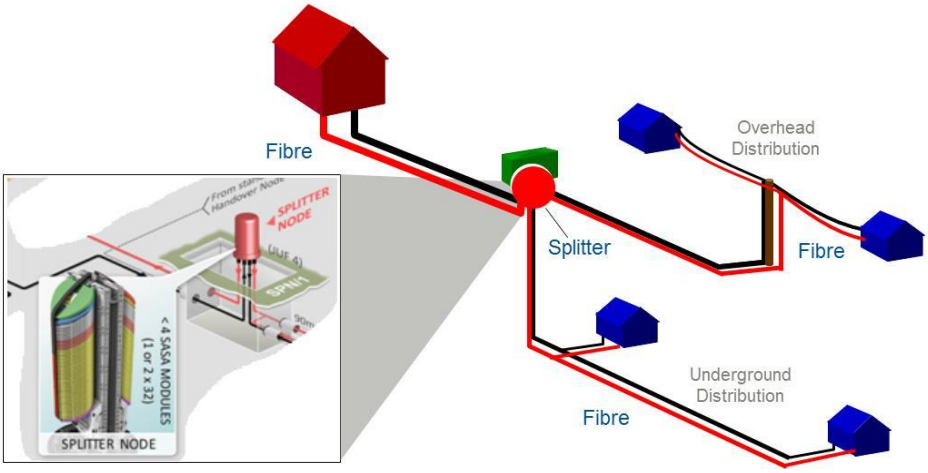
Superfast Broadband: *FTTP*



- G.Fast is a new technology BT is currently trialing that offers much higher speeds than FTTC (up to 1Gbit/sec in technology trials) such that it is capable of delivering the very high speeds typically only seen via FTTP but at a cost to deploy much closer to that of FTTC. BT has committed to deliver ultrafast broadband speeds (of 300Mbit/s-500Mbit/s) to 10 million premises by 2020, with premium fibre broadband services of up to 1Gbit/s being made available too where there is demand. FTTP will be a sizable proportion of this deployment, but the large majority will be provided by G.Fast solutions. We intend to deliver ultrafast broadband speeds to the majority of UK users by 2025, at a significant cost saving compared to using FTTP only.

For customers in some of the most remote regions of the UK we have also committed to work with government to launch satellite-based broadband by the end of 2015. This will include the installation of satellite equipment that is capable of offering superfast speeds.

4. Given that in practice a Universal Service Obligation could not capture 100% of households, what should a USO for broadband look like?

It is important to note that we are already supporting existing government ambitions for a 2Mbit/s Universal Service Commitment, which means effectively all premises could access a broadband service fast enough for things like email, and for using BBC iPlayer in standard definition. BT has also made an offer to the government and Ofcom that we stand ready to deliver universal broadband coverage of between 5Mbit/s and 10Mbit/s, if the government and Ofcom will take the action necessary to make this commercially viable. We support the goal of universal coverage of good broadband speeds. However, BT is opposed to a Universal Service Obligation (USO), one that imposes a unilateral cost on the BT shareholders to fulfil a legal obligation to provide such broadband to all premises without compensating commercial returns. How such an aspiration would be paid for and delivered, including consideration of the scale of contribution from the public and commercial sectors and from end users who benefit, is essential. We believe the time to ask and get answers to these questions is now.

BT does not think that the case for a USO of 10Mbit/s in the UK can be made. The government's freedoms are constrained by the terms of the European Universal Services Directive, which is scheduled for review in the near future. It is not obvious that the burden should be put upon fixed line, when mobile and satellite are already capable of delivering equivalent broadband speeds. It is not obvious that a legal USO is merited, when more than 20% of households do not find a need to subscribe to broadband services at all.

However, it is important to understand what constitutes a good broadband service for "modern digital services," and what features other than speed may be important. Understanding and agreeing this definition will help to inform the cost of deployment of such a service and thus how it could be delivered and paid for.

Ofcom has generally promoted the view, including in its recent discussion document in its Strategic Review of Digital Communications, that a universal broadband speed of "around

10Mbit/s" is needed. This is significantly higher than the last government's call for a 5Mbit/s USO. Ofcom's idea is based on evidence from various studies that at speeds below 10Mbit/s consumers are potentially disadvantaged, but that these disadvantages tend to disappear at around 10Mbit/s.

BT is not convinced that the evidence produced in Ofcom's discussion document, and that drawn from its research in the separate *Ofcom Infrastructure Report*, supports the conclusion that the increase in monthly data usage by customers with speeds up to 10Mbit/s suggests that 10Mbit/s is an appropriate minimum speed. The two datasets, data usage and speed, are very likely to be correlated and driven by an underlying variable of customer data need: end-customers with limited demand for data usage tend to be happy with slow speeds and have little need to download large amounts of data, potentially resulting in the effects that Ofcom observes. In BT's real-world experience, various facts point towards 5Mbit/s being a better judged minimum, for example, hundreds of thousands of customers on lines of 5Mbit/s are content to continue using those lines, even when a superfast broadband line is available in their area.

However, delivering a 10Mbit/s service would have a significant cost burden compared to the current FIA definition of 128Kbit/s, and it would also be substantially higher than any other definition of FIA in other EU member states. A lower, less costly, speed target may be more appropriate, such as the government's 5Mbit/s.

Whatever definition one seeks to put on 'good"' broadband speeds, it would be inappropriate to leap to the conclusion that such a service is now universally required. According to Ofcom data, 15% of premises do not require a fixed line at all, and of fixed-line customers, only 80% take-up a broadband service at all, and of the 80% that do, a substantial number are content to use lines of less than 5Mbit/s to 10Mbit/s. This is not compelling evidence of a universal requirement.

It would also be inappropriate to conclude that such a universal service obligation, even if the evidence supported one, should fall on fixed-line operators. Terrestrial wireless (4G) and satellite technologies are also capable of delivering wide coverage of good broadband, indeed near-universal coverage in the case of satellite. This must be taken into account in considering what role fixed-line operators should have.

Ofcom and government should consider carefully the limitations of the Universal Services Directive (USD), which does not provide for a broadband USO, and the guidance around the USD, along with consideration of the other European precedents, none of which approach the 10Mbit/s threshold. It would be inappropriate to over-interpret the provisions of the USD at a time just prior to its receiving a full review at European level.

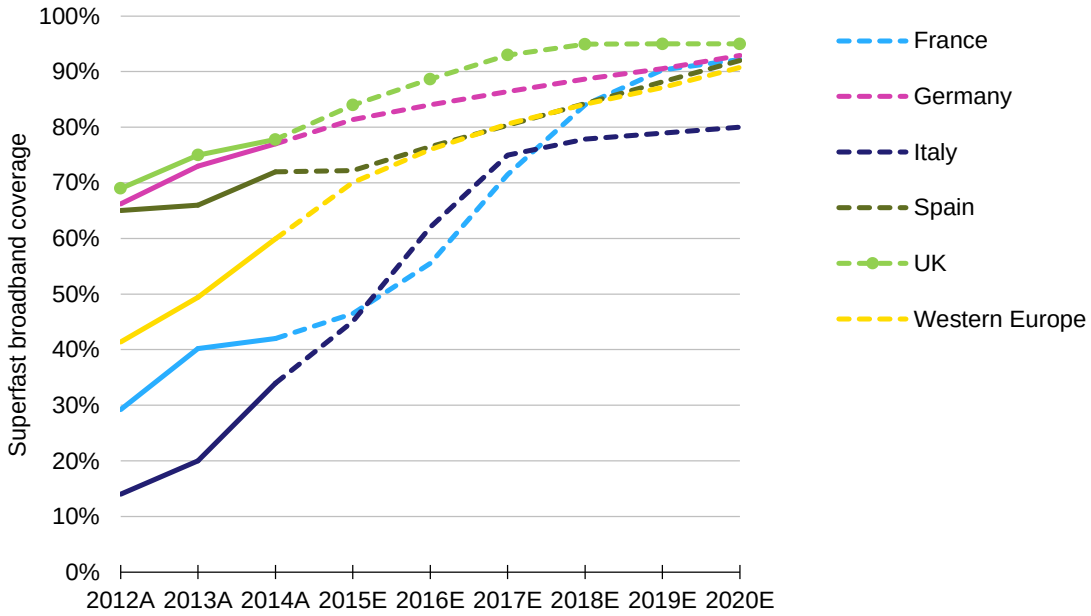
It is also clear that delivering a 5Mbit/s to 10Mbit/s broadband service universally for fixed-line operators would have a disproportionate cost burden compared to any benefits to the provider – otherwise there would already be coverage plans and no need for intervention. It would also be a massive increase in the cost burden from the current requirements. The costs of different universal speed obligations need to be weighed carefully in the balance relative to the supposed universal need. Lower speed requirements would obviously lower the cost burden and should be fully considered along with speed benefits.

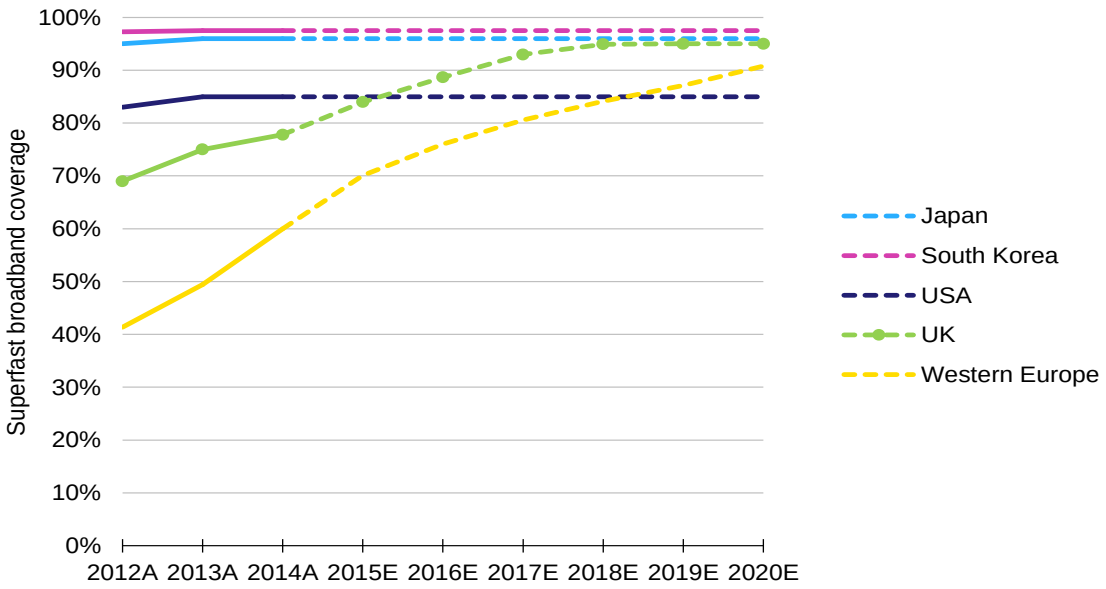
Given the various legal and EU regulatory complications, for example, the need to consult on any change in USO conditions or revised guidance on what would constitute the obligation, it is clear to BT that simply creating a new USO for broadband and either imposing it on existing USO operators or inviting bids from other providers is not straightforward without effectively changing the Universal Services Directive at EU level, any intervention would also need to satisfy EU State aid and procurement rules. It is, however, a key commitment from government to push high-speed services out to 'virtually all' UK premises and this is a commitment that BT is keen to support, within a supportive regulatory and government policy environment to bring about a commercially viable investment, as we confirmed in our announcement on 22 September 2015.

5. **What are other countries doing to reach 'not-spots'? How affordable are their solutions?**

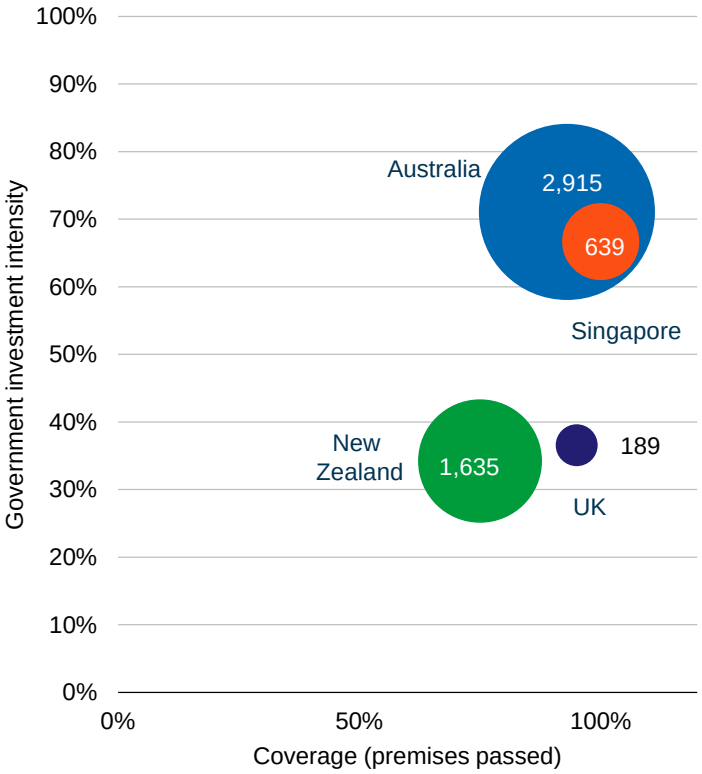
The combination of commercial and UK government investment is delivering very high superfast coverage levels at a cost to government that is significantly below other countries.

All major countries are effectively utilising a variation of the technology mix discussed above, ie, a mix of FTTP, FTTC or FTTB (Fibre to the Cabinet or Building, the latter being where fibre is taken to, for example, a multi-dwelling building and distributed from there), G.Fast and radio and satellite solutions plus DOCSIS/cable delivered via a combination of commercial (in densely populated areas) and government-assisted or funded deployment in other areas. The exact mix of solutions, funding methods and coverage to date varies by country, but the UK is at the forefront of NGA coverage amongst major economies and is leading the EU's other major economies as shown in the recently published data below from Analysys Mason.





The affordability of other countries' solutions varies considerably depending on investment conditions and targets set in each country. For many countries the information on number of premises passed with public money at what cost is generally not available, making direct comparison difficult. However, a recent report by analysts Analysys Mason, which looked at available data produced the comparative chart below on public funding. The size of each circle represents the cost per premise (in £) with x and y axis showing % coverage planned and scale of government investment to achieve that respectively.



It is clear from this information that the combination of commercial and UK government investment is delivering very high superfast coverage levels at a cost to government that is significantly below other countries.

6. **Should Government be investing more in research and development into finding innovative solutions to meet the communication needs of remote communities?**

The research and development effort of industry is already focused on delivering high-speed service cost-effectively in remote and difficult to reach areas. This research is taking place on a global scale and thus unlikely to be assisted significantly by UK government efforts. BT is a global leader in the development of high-speed network technologies and in their application in real world environments. We deployed the first single-mode fibre-optic system in the world in 1984, which is now the foundation of all telecoms networks. Ours is a world-leading application of FTTC solutions, now extensively copied by other operators. We reset the UK Access Network Frequency Plan to double fibre broadband capability even since we started scale deployment. We have driven the development of global standards for G.Fast, to make the innovative application of this technology from the street cabinets we have already built possible, radically reducing the costs of ultrafast broadband. We applied ground-breaking techniques to achieve the world record for the highest ever recorded speed on a single fibre in a real-world network, of over 3Tbit/s, proving thereby that there will be no capacity crunch in telecoms networks.

BT spends some £500m per annum on R&D (third behind only pharmaceutical companies in the UK). BT's laboratories are always looking at new engineering solutions and have some exciting new ideas to raise broadband speeds significantly on very long copper lines, which exist in many 'hard to reach' areas. We are going back to basics, revisiting the physics associated with high-speed transmission over copper. For example, we are researching a new technology we call 'Long-reach VDSL'. This shows how a 2km-long copper line, currently achieving 9Mb/s on standard VDSL, can achieve 24Mb/s. In the longer term, through standards changes, we know that we can achieve even higher speeds, bringing Superfast speeds to some very long copper lines.

Such new technology options are not without challenges: they may require new standards, new hardware and discussions with industry and the regulator alike regarding co-existence with legacy products. But the laboratory work shows our determination to develop new technology to materially uplift speeds for the many customers on very long lines.

VDSL technology at the heart of FTTC has also been driven by BT laboratories over many years. For example, we were one of only two laboratories in the world responsible for deciding the fundamental coding scheme for VDSL back in 2003. And BT continues to innovate in order to find new and more economic ways to extend fibre broadband into the last five per cent of the UK.

As we push into more remote and more sparsely populated regions, the challenge becomes one of providing fibre, and power, to electronics in increasingly difficult locations. And the economics of fibre broadband become more challenging as the

number of customers served reduces in these less densely populated areas.

In response to the power challenge, we are developing novel systems, which use our own copper lines for power distribution rather than sourcing separate power supplies from the electricity grid. We are also working on new 'ruggedised', small units for housing the electronics that can be more quickly, easily and economically deployed closer to customers. Continued innovation from the labs will ensure we have the right technology at the right cost to deliver superfast even faster as time goes on.

We are not stopping at superfast and we have recently committed to taking ultrafast capabilities out to some 10 million UK premises by 2020 and to the majority of homes by 2025. Delivering on this commitment will take yet more innovation. To deliver this ambition we must consider, engineering scale, pace of deployment and cost to deploy.

A 'winning' technology must deliver maximum bandwidth, be capable of being deployed in years and not decades, and at a cost that supports the highly competitive market with multiple service providers selling services to give the low prices that customers in the UK enjoy today.

To answer these three challenges and underpin this commitment, we will exploit two core technologies: FTTP where it is needed and is the best solution and the next generation of fast copper technologies, G.fast.

Despite the significant extra cost and time to deploy FTTP, as described earlier, Openreach has already deployed more of this than any other company in the UK but its availability will now be increased rapidly. We are innovating to find more economic and speedier ways to deliver it by changing the way we plan, build and deploy FTTP.

BT's laboratories have demonstrated changes to network architecture that remove three hours from the engineering task of delivering a fibre connection and we are trialling new techniques aimed at easing the important 'on the day installation' phase of FTTP delivery. New 'connectorised' fibre technologies will take time, cost and risk out of the delivery, giving a better experience for CPs and end-customers alike.

We are also applying advanced software techniques to the planning of FTTP, and BT's laboratories have recently delivered solutions to Openreach that more than halve the time it takes to carry out detailed planning of FTTP networks.

The result is that we will be increasing the volume of FTTP delivery for the UK. For customers who need hundreds of megabits per second we have been pioneering a new G.Fast technology that can be deployed rapidly and this new technology will underpin our vision to make up to 500Mb/s per second available across most of the UK over the next decade. To put it into context, these G.Fast speeds today, before the expected benefit from ongoing advancement in compression technologies, would enable a household to enjoy 100 simultaneous HDTV streams or 25 simultaneous UHDTV streams.

G.Fast is a technology that BT's labs have been pioneering over the past few years.

Standardised in December last year at the ITU, the global body accountable for agreeing the standards necessary before equipment manufacturers will build relevant equipment, G.Fast is currently being 'productised' by the world's leading technology equipment vendors. It can evolve to speeds significantly in excess of 500Mb/s over typical copper line lengths.

BT is the only UK contributor to the ITU standard for G.Fast. The current G.fast standard is not sufficient to deliver the ultrafast vision that we have for the UK, so BT's laboratories have been working hard on improvements that will turn this great technical solution into a great cost-effective solution that can be deployed in the time-frame demanded by the market.

Our physicists and engineers have identified key modifications to the technology, which will allow G.fast to be deployed economically across the majority of the UK and in a timeframe measured in years rather than the decades the previous standard would dictate.

BT, and the UK, is genuinely leading the world in driving standards and global vendors to produce the technology that will be the bed-rock of ultrafast networks in the UK and globally. This technical leadership is fundamental to the network BT is delivering.

There is, in short, no need for further government support for technology development in this space. However, government could do more to assist with deploying existing technical solutions and ensuring regulatory and other rules do not prevent the deployment of new technologies for remote areas and elsewhere. This could be through additional funding and assistance in current non-commercial areas or support through regulation and standards to support the delivery of G.Fast, and other technologies, as well as seeking a solution to state aid rules for inner city areas.

7. **Are BT and other communication companies investing sufficiently themselves in reaching these groups?**

BT has played a vital role in the deployment of broadband in the UK by investing £20bn of capital over the last 10 years in our networks. £10.5 billion of that money has gone to Openreach, so that the whole industry, and country, can benefit from a properly maintained and upgraded network, a network that is open to all communications providers wishing to provide voice and broadband services. We expect this year's investment in Openreach to exceed last year's, just as last year's exceeded the year before. Openreach's capital expenditure has risen year on year for six years, in aggregate, as a percentage of Openreach revenue, as a percentage of BT Group revenue and as a percentage of BT Group capital expenditure. External benchmark information shows that invested network capital per household in BT is higher than its peers in the UK and in other countries in Europe. In short, the evidence does not support a lack of investment. Coverage challenges arise instead from the limits on viable business cases, as explained above.

BT has invested up to £3bn of its own funds specifically in the UK's superfast network deployment, and committed to invest yet more in its share of the BDUK-funded deployments. BT continues to invest in ever cheaper and faster means of extending this capability, for example, with our G. Fast trials and commitments to ultrafast broadband. Virgin Media has also made significant investments and commitments to invest further in its network, such that the UK is on track to achieve 95% coverage by 2017. These commitments by the two main infrastructure providers have been made against a backdrop of relative reluctance to invest from many other major CPs in the UK who makes use of this infrastructure.

8. **What investment and progress are the mobile network operators making in improving mobile coverage across the UK and enabling a swifter process when users choose to change provider? How could these best be improved?**

Although coverage obligations have been imposed on mobile operators' licences to seek to ensure effective coverage, these are unlikely to deliver full geographic coverage. This was recognised by DCMS with the launch of the Mobile Improvement Project (MIP) procurement intended to deliver mobile coverage in a range of identified mobile 'not spots' across the UK. Although BT bid for this project we were unsuccessful and thus we are not aware of its current status or progress.

On the issue of customer switching, BT believes that regulation should ensure that consumers are able to switch their services, including bundles and mobile services, using the same process and with the same regulatory protection. No segment of the industry should benefit or have greater freedom in its marketing activities around switching compared to any other. The ability to switch easily is essential to the functioning of competitive markets. Therefore BT believes that a common switching regime is required across fixed, mobile and pay TV markets, prioritising the need for a good and consistent customer experience across emerging bundles. This doesn't exist today and BT has called upon Ofcom to consider this as part of its current review.

9. **How have the existing Government broadband programmes been delivered?**

All the Phase 1 BDUK projects that BT won are either actively delivering or indeed have already met and exceeded delivery targets, and delivered at lower cost than bid. There has been significant, ongoing scrutiny and investigation of government broadband programmes by other Parliamentary committees and the media, amongst others. This scrutiny has been particularly focused on contracts won by BT, though little if any investigation of the programmes in South Yorkshire North Wales or more recently MIP, has been carried out).

The remaining projects are on track to complete the delivery of the their coverage target by the end of 2015, with Ofcom reporting in its August Communications Market Report that fibre broadband is already available to 90% of the UK.

A January 2015 update from the National Audit Office (NAO) on its July 2013 review of the BDUK programme stated:

- Phase 1 of the Programme is progressing well. It is on track for superfast broadband to reach 90% of premises by early 2016. So far, significant cost savings and higher than predicted take-up should bring greater coverage than contracted, as local bodies will be able to extend their rollout with remaining funds.
- The Major Projects Authority carried out a project assessment review in autumn 2014. It concluded that "The 'Milestone-to-Cash' process (where payments to BT are phased against successful completion of project milestones) should be disseminated across Whitehall, as appropriate, as an exemplar of best practice."
- In terms of cost and value for money, in January 2015 Atkins working on behalf of BDUK found that BT had charged the local authority selected for Atkins' review (Suffolk) nearly 20% less than would hypothetically be charged by another 'efficient supplier'.
- Early take-up of superfast broadband has substantially exceeded expectations. Two projects have already exceeded the modelled 20% take-up rate, and two more projects are close behind.

The Phase 2 BDUK contracts have now also been let such that the 95% coverage target by the end of 2017 is also on track to be achieved. And, as recently announced, as a result of better than planned take up of broadband services by consumers benefiting from the BDUK programme, the deployment of these projects is to be further enhanced by BT enabling up to £129 million of additional government funds to be made available for re-investment in additional coverage under the Phase 1 programme.

The future additional revenue from these extra customers is therefore being made available to the build projects to take coverage further and faster, in order to maximise the overall coverage targets for the UK.

We would be happy to discuss these issues further. Further enquiries can be directed to David Pincott, head of political research, policy & briefing (0207 356 6585/david.pincott@bt.com)