

A close-up photograph of a person's hand using a computer mouse. The hand is positioned over a black mouse, with the index finger resting on the left button. To the left, a portion of a white laptop keyboard is visible. The background is dark and out of focus. The image is framed by a thin black border.

DIGITAL BUSINESS FIRST

BUSINESSES FOR BETTER BROADBAND IN BRITAIN

MARCH 2013

HIGH-SPEED BROADBAND FOR ALL OF BRITAIN

**THE INFRASTRUCTURE PRIORITY FOR
JOBS AND GROWTH**

BUSINESSES CALLING FOR BETTER BROADBAND AND MOBILE INFRASTRUCTURE

Our organisations represent hundreds of business people in the heart of our country. Together, we share a common goal to stimulate enterprise and entrepreneurship and promote job creation. We believe that the provision of a coherent policy and programme for delivering a 21st Century Digital Infrastructure for Britain is essential to delivering those goals.

The Government's commitment to the delivery of next generation infrastructure should be applauded and this investment will see a significant increase in superfast coverage across large parts of the country. However, whilst this is a good step forward, indications are that it will not be enough to ensure a nationwide target is achieved.

The UK needs to go further if it is to be considered the best-connected nation in Western Europe, thereby maximising competitive advantages and the benefits for its citizens. We are already seeing evidence of the increasing use and adoption of cloud-based services for storage, computation and wider network use. This trend is likely to continue as next generation access will enable a growing number of users the opportunity to maximise the benefits associated with cloud-based services such as reduced costs, greater efficiencies and the ability to genuinely transform working patterns and the need to travel.

A sufficient superfast network, both fibre and wireless, must be in place to enable this wider adoption of these services. Government policy and action will need to reflect this commitment with sufficient investment and cohesive infrastructure delivery at the core of a 21st century broadband network, inclusive of all appropriate technologies, that is available from Land's End to John O'Groats.

We cannot be a nation of 'haves and have nots' in which a postcode will determine the growth potential for small businesses that rely on access to a capable, coherent digital infrastructure.

Our purpose in establishing *Digital Business First* is to bring together the many voices from business people across our country that are frustrated by the patchwork approach to mobile and broadband provision today. We are urging Government to demonstrate the leadership required to enable the delivery of a digital infrastructure that will fuel economic growth for our country.

Alex Pratt
Chairman
Buckinghamshire Business First

Frank Nigriello
Chairman
Oxfordshire Business First

DIGITAL BUSINESS FIRST

Business organisations **Buckinghamshire Business First** and **Oxfordshire Business First** are working together to ensure that the Government puts digital connectivity at the heart of its vision for economic growth and business competitiveness.

Businesses are invited to pledge their support and engage with 'Digital Business First' to urge Government to create a better connected Britain.

www.digitalbusinessfirst.com



HIGH-SPEED BROADBAND FOR ALL OF BRITAIN:

THE INFRASTRUCTURE PRIORITY FOR JOBS AND GROWTH

Executive Summary

This document summarises and brings together in a clear manner the major issues under discussion in the current debate over mobile and fixed broadband infrastructure policy in the UK.¹ We believe it reveals the urgent need for a broadly - based campaign to improve Britain's digital infrastructure.

Our central message is that all Western societies and Governments are searching for the best way to promote growth and jobs in their economies. The digital economy IS the economy, and digital infrastructure is the key to economic recovery in the UK, allowing the private sector to innovate, grow and flourish. Experience around the world demonstrates without doubt that today digital infrastructure investment produces the greatest economic multiplier effect, because it empowers everybody.

In driving this campaign forward, the following considerations will be vital for success:

First, mobile broadband is becoming the new driving force in the digital revolution, while fixed connections still have significantly greater speed/bandwidth potential. No digital strategy will be effective unless both mobile and broadband are developed together.

Second, as economic recovery depends on SMEs, it is essential that they have access to broadband wherever they are.

Many are not within the current footprint of the UK's broadband infrastructure and risk having little or no access for some time to come unless a greater priority is given to the principle of universal coverage.

Third, speeds of broadband must allow businesses to be competitive for global markets. What we currently consider high-speed broadband - around 25Mbps- seems minimal when contrasted with many towns in China already having 100 Mbps available through fixed connections. Nationwide availability of both mobile and fixed broadband at technologically feasible speeds is therefore the essential enabling infrastructure.

Fourth, sufficient resources must be made available for these priority investments in digital infrastructure. The wider national debate must now be about getting public infrastructure priorities right in an age of limited resources and global, digitally-driven economic transformation.

¹ *The authors of this document are Peter Linton, Managing Director, Burson-Marsteller Brussels, and Matthew Copeland, independent advisor on telecommunications networks*

Broadband is the most important public infrastructure priority facing our generation of leadership – upstream from all other infrastructure investment, spreading economic engagement and value creation throughout our society and our economy.

Growing evidence from around the world confirms that broadband investment produces a significantly higher multiplier effect on growth and employment than any other infrastructure investment. One recent study found that an extra 10 percentage points of broadband penetration in developed countries generates a full 1% increase in per capita GDP. Another found job growth in the US of between 0.2 and 0.3% for every percentage point of incremental broadband penetration.

Nation-wide coverage for both fixed and mobile broadband of acceptable performance must be the unambiguous objective of UK broadband policy.

4G wireless licenses will have decisive implications for the future extension of **both** fixed and mobile broadband coverage, and thus for the long-term place of the UK in the global digital economy. The explosive worldwide growth in demand for mobile broadband connection demands particular attention at policy level. These decisions must not be left only to regulators, local authorities and operators.

The government's present course is paved with good intentions but failing too many communities, leading to their growing isolation from the fastest-growing sectors of the British, European and Global economies and a worrisome domestic "digital divide".

"The spectre of a widening digital divide is a profound source of concern which requires the Government to address its origin with greater vigour than we believe is currently the case."

As of March 2013, some 9 million premises (out of the UK's 29 million premises) will be outside fixed high-speed network coverage, while many areas continue to lack even basic mobile coverage (our infamous "not-spots") just as mobile connectivity becomes a major new driver for innovation and economic growth.

This puts in jeopardy the Coalition's entire jobs and growth strategy, which cannot deliver if it has to rely in the future only on major urban areas and large companies.

Only nationwide broadband coverage can connect every company and every citizen in the United Kingdom to a prosperous future, and empower every individual to participate in a Big Society.

Regulatory choices alone cannot put this nation on the right path. Increased public investment in broadband infrastructure made available within a national framework will be vital, as can be seen in every one of the world's most connected countries.

The necessary scale of this funding, together with the policy framework, objectives and conditions governing its availability, can only be determined as part of a coherent nation-wide UK broadband strategy taking full account of economic realities and regulatory choices.

The signatories of this memorandum are by no means alone in our concern. In its recent Inquiry report, the House of Lords found that "the spectre of a widening digital divide is a profound source of concern which requires the Government to address its origin with greater vigour than we believe is currently the case."

The government must urgently reassert its authority over UK broadband policy to connect our nation completely to the high-speed global superhighway rather than continue to drive around the local car park of complacency.

We therefore call upon the Prime Minister to convene a broad, open, public and transparent broadband policy review.

THE OUTLOOK FOR NATIONWIDE BROADBAND COVERAGE

March 2013

Still Not a Pretty Picture: The need for a review

This analysis has been prepared at the request of Digital Business First by Peter Linton, Managing Director – Burson-Marsteller Brussels, and Matthew Copeland, independent advisor on telecommunications networks and technologies with long experience in the build-out of the UK's telecommunications infrastructure

Foreword / Summary

In September of 2012, Digital Business First published a “call to action” from the demand side based on our analysis of last summer (see Annex 4), warning that the digital divide in the UK was already far larger than many realised and that prospects for closing this divide were uncertain, particularly when compared with

the amount of public funding available under the Government's BDUK framework.

We also highlighted shortcomings in the performance quality of BT's fibre-to-the-cabinet (FTTC) upgrade under certain circumstances, compared with both UK and European targets for broadband speeds, together with the economic reality that upgrade from FTTC to full fibre-to-the-home (FTTH) was far from certain for the majority of UK homes and premises wherever located.

In view of those findings, Digital Business First called for an urgent government-led review of the UK's high-speed broadband deployment strategy and implementing policies. At the request of Digital Business First, hereunder we update our analysis to take account of 1) BT's most recent outlook for commercial FTTC upgrade of its copper network, 2) the just-concluded auction of 4G wireless licenses, and 3) recent clarification of European Commission state aid guidelines for broadband infrastructure build.

Looking forward we also address important issues relating to the imminent implementation of BDUK funding which will impact the future reach and quality of the UK's fixed and mobile broadband infrastructures. These include:

- Potential and substantial inefficiencies in the allocation of Government funding.
- Speed targets which are outdated and too low in rural areas.
- Delays in the Government funding of urban broadband network extensions

Based on this updated analysis, our conclusion remains the same : there is an urgent need to review both the level of public funding for UK broadband network deployment and BDUK policies and processes for its implementation.

It is important to recall that the original policies and targets for UK broadband deployment were set in 2009/2010. Since then there have been major developments in broadband network technology, including the costs of deployment. Furthermore, unlike in 2009, the UK is now in a position to observe the progress of other state-funded broadband projects around the world.

UPDATE : The size of the UK's Digital Divide

Approaching the end of commercial upgrade by BT

In last year's analysis, we concluded that even when BT completes its plan for commercial deployment of fibre-to-the-cabinet (FTTC) upgrade reaching two thirds of UK "households", the remaining one third – some 8 million "households" - would remain outside either BT's upgraded network or the Virgin Media cable network (because BT upgrades may cover virtually all of the Virgin footprint) and thus would have to rely on Government funding to finance fixed high-speed broadband build. Given the magnitude of this digital divide, we questioned whether the funds allocated to BDUK were anywhere near adequate to the task.

BT is now approaching the end of its commercial based broadband upgrade:

- On the 12th of February of this year BT reported that its commercial FTTC build had reached "more than 13 million premises", with completion of its commercial roll-out now foreseen for spring 2014 reaching "two thirds of UK premises", or some 19 million "premises" (full BT statement in annex 2).
- This implies a total of 28.5 million "premises" in the UK by BT's count - a higher base than the 23.6 million total

"households" we used in our previous analysis, thus presumably including categories other than "households" (such as smaller businesses). Be that as it may, and again assuming close to total overlap of the commercial BT FTTC and Virgin Media cable footprints, this will leave something on the order of 9 million "premises" in the UK dependant on BDUK funding to close the fixed high-speed broadband access gap.

- BT also states in its February report that its commercial upgrade, when complete, will have reached about 1700 exchanges and that "the company is now beginning to identify additional exchanges that it will enable with the assistance of its Broadband Delivery UK (BDUK) partners." We understand that BT has approximately 5500 local exchanges, which suggests that the 33% of UK premises which will need public funding account for 69% of BT's local exchanges – a worrisome equation in terms of the prospective cost-per-premise-connected beyond BT's areas of commercial build.

4G mobile coverage:

In September of 2012, while awaiting OFCOM's 4G auction, we questioned the ability of future mobile 4G coverage to bridge the broadband access gap due particularly to the relatively modest obligation OFCOM had decided to impose on just one eventual mobile 4G operator to provide broadband at only 2mbit (and not necessarily indoors) in the outer reaches of the UK's geography.

OFCOM has just now completed its auction for 4G licenses in the UK. In view of the outcome, we continue to remain unconvinced that 4G mobile operators will bridge the UK's digital divide in any significant manner anytime soon. In particular, we note:

- Neither 02-Telefonica, the only operator with the modest coverage obligation, nor 3-Hutchinson bought higher capacity 2.6GHz mobile spectrum. Conversely neither Vodafone nor EE, the two mobile operators that did buy higher capacity spectrum, has a coverage obligation.
- Although we need to await operators' roll-out plans to see clearly, this outcome suggests a scenario where the higher capacity spectrum awarded in the auction may be focused on mobile connectivity in commercially attractive areas, i.e. predominantly urban and sub urban, while less attractive areas can expect only the minimum obligation, if that.
- BT also purchased 50Mhz of higher capacity 2.6GHz mobile wireless spectrum. However, based on BT's statement¹ concerning the use of this limited amount of spectrum, we have doubts that it will contribute to substantially improving wireless coverage and performance in underserved areas.

LOOKING FORWARD : Concerns as we enter the BDUK execution phase

Beyond our continuing concern over the adequacy of Government funding to close our digital divide, we call attention to the following concerns for the "execution" phase of BDUK funding we are now entering. More detailed analysis of each can be found in annex 1.

(To recall: the Government has split the country into two groups which together cover all

¹ "This spectrum, which can be used to provide fast 4G connectivity, will enable BT to provide its business and consumer customers with an enhanced range of mobile broadband services, building on its existing strength in wi-fi." BT press statement February 20th 2013

UK premises : 1) the "last 10%" (the exact locations of which are unclear as is the total actual number) which currently receive either no broadband or less than 2 mbit and for which the Government's speed target is 2mbit, and 2) the other "90%".

As shown above, total public funding via BDUK will be needed to extend broadband coverage to about one third – some 9 million – of all UK premises, comprising all of the "last 10%" approaching 3 million, plus some 6 million among the other 90% not covered by commercial networks.)

Technological neutrality :

We are concerned that BDUK funding for broadband network build may be inefficiently allocated, to the detriment of both the total number of premises covered via state aid and the performance levels they receive. This is due to the lack of any obligation under the BDUK framework process and associated legal agreements that technological neutrality, as referred to in the European Commission's guidelines, will be embraced to deliver the most cost effective NGA network to the maximum number of homes.

In those areas where FTTC does not/cannot deliver true NGA and when neither of the BDUK framework companies, BT or Fujitsu, can provide comprehensive cost effective alternatives when compared to other suppliers, then Government and BDUK should ensure that both companies (and indeed councils commissioning either company) are obliged under the framework agreement and/or associated conditions of state aid to seek efficient and cost effective alternatives from third party suppliers.

This should include notably third party providers of fixed wireless access and full fibre build. No such obligation currently exists.²

Performance levels :

It is not clear whether BDUK-funded NGA networks will actually deliver speeds of 30mbit plus (the speed specified by the European Commission) for all premises they are intended to cover within the 90% area, i.e. whether actual speeds delivered will not drop below this threshold on a post code basis, as they may do for certain premises served by BT's commercially upgraded FTTC network.

The last 10% :

We believe the 2mbit speed target for the last 10% of underserved UK homes is unacceptably low, redundant in the context of technology now available, and divisive for society.

We believe that this target should be raised towards NGA performance levels, in parallel with a clear and credible Government and BDUK plan for funding and delivery. This should include the provision of backhaul transmission facilities.

Urban centres/cities :

While we note the current DCMS consultation on public funding of urban broadband, there is a lack of clarity on how the UK Government intends to implement the European Commission's state aid guidelines with regard to the planned public funding of superfast broadband in urban centres/cities.

Consequently, the timetable for this project is slipping significantly. There are also concerns over the ability of the European Commission to rule on state aid questions expeditiously. We stress that the digital world waits for no government.

² (as regards fixed wireless for example, the guidance from DCMS of February 2013, on when fixed wireless networks may be considered for public funding, does not address this point).

Analysis of BDUK implementation

1. Technological neutrality is vital for making sure that state aid provides the maximum possible number of UK homes with the maximum possible speed

While we are encouraged to see that the Government is now determined to implement funding of broadband networks via the BDUK framework and associated legal agreements with various councils in the UK, we remain concerned that the BDUK framework agreement provides no apparent guarantee or incentive for technological neutrality, via BDUK Framework Agreement companies, in the delivery of next generation access network.

In this context, we particularly welcome the European Commission's clearance of the UK government/BDUK national rural framework process to allocate state funding, in parallel with the finalisation of the Commission guidelines on state aid for broadband networks.

Within both the UK clearance, and the finalised guidelines, the Commission has provided timely and valuable principles upon which we believe the BDUK execution phase can and should be firmly based. More specifically, the Commission clearly adopts the principle of technological neutrality in the award of state aid for broadband networks.

For instance, the Commission noted limits to the capabilities of FTTC upgrade to copper networks for delivery of next generation access (NGA) services in certain geographic areas when compared to the NGA abilities of fixed wireless access (FWA) networks (See Annex 3 for European Commission guidance on FTTC versus fixed wireless). We pointed to just such limitations in the UK in our 2012 analysis, as did the House of Lords in its "Broadband for All" report from July 2012 (pointing out for example (para 80) that "the BT Infinity product used to deliver 'superfast' in Cornwall only guarantees a minimum of 15Mbps".)

Technological neutrality can address such shortcomings, ensuring an allocation of public funding to the most efficient and appropriate technology, and thereby providing the maximum possible number of homes with the maximum possible speeds. We also note that this principle of technological neutrality should extend to the various small companies in the UK that are increasingly capable and willing to consider full fibre-to-the-home fibre upgrade in various geographic areas where the main players are not.

We note that the DCMS has provided guidance (February 2013) on when public funding may be used for deployment of fixed wireless access networks. However, the same guidance does not address any obligation for the adoption of technological neutrality with regard to Framework companies BT and Fujitsu (nor councils allocating funding) to ensure the delivery of NGA services in the most cost effective, efficient manner to the maximum number of homes via technological neutrality e.g. the guidance does not oblige them or councils to commission third party suppliers of alternative networks that are superior to/more cost effective than FTTC in various areas.

We believe that the two network build companies "approved" under the BDUK framework agreement - BT and Fujitsu - should be compelled to offer comprehensive and viable technological alternatives to FTTC in instances where FTTC cannot deliver 30mbit+ next generation network. They should do this via third party suppliers if they cannot themselves provide comprehensive technological alternatives at lower cost than third parties (e.g. third party companies may be able to provide more comprehensive fixed wireless or full fibre based NGA services in a more cost effective manner than BT).

2. Lack of certainty as to what speeds will actually be delivered to homes in areas subject to BDUK funding

Last year's House of Lords report found (page 28) that no less than three separate definitions have been used by the UK Government to define superfast broadband speed targets. Our understanding is that it is only after a Council awards a contract to either BT or Fujitsu that,

via postcode surveys, it becomes clear what speeds can be delivered to homes in specific postcodes within the area. We understand that councils appear to accept that, in various instances, speeds may be less than both the UK's various definitions of superfast and the Commission's NGA/30mbit threshold. Indeed, the Department of Culture, Media and Sport (DCMS) itself notes that in certain instances less than 30mbit speeds may be delivered, while generally the "target" is 30mbit:

*"All new projects must target delivery of superfast broadband speeds of 30 Mbps or more, which is in line with the EU's superfast/NGA broadband targets. However, due to earlier UK definitions of superfast referring to speeds of more than 24 Mbps, projects already underway will be satisfying the superfast broadband speed requirement if they seek to deliver speeds of more than 24 Mbps."*³

Aside from the fact that sub 30mbit delivery is sanctioned by DCMS, it is unclear to what extent the 30mbit "target" (where it does apply) is absolute and binding on councils, BT or Fujitsu. The use of the term "target delivery" suggests that it is an aspiration which Government is setting rather than an obligation.

We urge the Government and BDUK to ensure that any public funding of broadband network in the "90% area" categorically delivers at least 30mbit NGA network. Anything less will be a waste of valuable Government funds.

3. The 2 mbit target for the last 10% of the UK population should be upgraded towards 30mbit NGA speeds and a clear BDUK plan created for delivery

The reality is that the Government, BDUK and local councils are entirely reliant on BT to identify who this 10% actually includes. As such, it may well be that not only are some of the last "10%" actually to be found in more sub urban and densely populated areas, but that the actual number of broadband "deprived" premises is higher than 10%.

³ http://www.culture.gov.uk/images/publications/State_aid_Guidance_Overview_of_the_Scheme.pdf

Within 50 miles of London for example, Buckinghamshire and Hertfordshire have a significant number of premises that fall within the "last 10%". 8% of premises in Buckinghamshire and 3% in Hertfordshire receive less than 2mbit. (These figures are best approximations that may be subject to revision following future BT surveys: the figures could turn out to be better - or worse.) . And we repeat that we remain unconvinced that the licensing obligations imposed on the UK's mobile 4g operators will consistently and uniformly help deliver 2mbit or above to these areas of the UK. The outcome of the 4G auction has changed nothing in this regard.

More fundamentally, we believe that the 2mbit target is far too low. This target for the last 10% was decided by the previous Government in 2009. Since then technology has evolved which can approach 30mbit speeds for these areas, rendering the current target unduly low. If unchanged, this target will widen the digital divide between the last 10% of UK homes versus the other 90%. The Government urgently needs to both revisit its target for the last 10% of UK homes, which we believe should now be NGA speeds/30mbit+ (or as close as possible to it) and develop a coherent plan for delivery. This should include (as per the House of Lords recommendations) plans for adequate back haul transmission facilities.

4. Government funding of urban superfast broadband

While we note the current DCMS consultation on public funding of urban broadband, there is a lack of clarity on how the UK Government intends to implement the European Commission's state aid guidelines with regard to the planned public funding of superfast broadband in urban centres/cities. Consequently, the timetable for this project is slipping significantly. There are also concerns over the ability of the European Commission to rule on state aid questions expeditiously.

From the demand-side perspective of Digital Business First, and indeed from the perspective of the national interest, the worrisome prospect of prolonged regulatory uncertainty and supply-side litigation surrounding this framework is quite simply unacceptable.

BT reveals latest phase of fibre roll-out

1.2 million premises to be added to fibre footprint

99 new exchanges added to the list Further work to be carried out in previously announced areas

BT today revealed the details of the latest phase of its £2.5 billion commercial roll-out of fibre broadband. A further 1.2million premises will be passed with the technology under this phase, bringing the total footprint announced by the company to date to around 19 million premises.

Openreach, BT's local network business, will upgrade 99 new exchanges with the technology before or during Spring next year. These exchanges serve approximately 600,000 premises which are mostly spread across Scotland, the Midlands, the North East and North West of England¹. An additional 600,000 premises will also gain access to fibre broadband as a result of additional 'infill' work in previously announced areas.

BT has now confirmed around 1,700 exchange areas across the UK which will make up the bulk of its commercial fibre footprint. The company is now beginning to identify additional exchanges that it will enable with the assistance of its Broadband Delivery UK (BDUK) partners.

Mike Galvin, Managing Director, NGA, Openreach, said: "The UK is making great progress with super-fast broadband and this latest phase of work will keep up the momentum. Speeds are increasing all the time with the UK second only to Japan within the G8². I am sure that communities across the UK will be pleased to see that they are factored into our commercial plans and I now look

forward to working with councils to identify further areas that we can enable with their support."

"Our fibre deployment continues to gather pace. Our engineers are working round the clock to hit our ambitious target of reaching two thirds of UK premises with fibre during Spring 2014 – at least eighteen months ahead of the original timetable. The work doesn't stop there however as we are also helping to roll out fibre to other parts of the country working in partnership with local authorities as part of the BDUK activity."

BT's commercial fibre network is already the largest in the UK, reaching more than 13 million premises. When complete, BT's engineers will have installed tens of thousands of fibre cabinets, enabled around 1,700 exchanges and laid more than 50,000 kilometres of fibre cables across the country.

Openreach, BT's local network business, is deploying a mix of fibre-based technologies. This includes fibre-to-the-cabinet (FTTC) technology, where the fibre runs from the exchange to a local roadside cabinet. FTTC offers download speeds of up to 80Mbps and upload speeds of up to 20Mbps and could deliver even faster speeds in the future³. Fibre-to-the-premises (FTTP) technology, where the fibre runs all the way to the home or business, is also being deployed in certain areas. FTTP will offer the top current download speed of 330Mbps⁴. According to the regulator Ofcom, the current average UK broadband speed is 9Mbps.

From Spring 2013, Openreach will also start to make FTTP commercially available on demand in areas where FTTC has been deployed⁵.

At home, fibre broadband enables a family to simultaneously download a movie, watch a TV replay service, surf the internet and play games online all at the same time. A whole album can be downloaded in less than 30 seconds and a feature length HD movie in less than 10 minutes, whilst high-resolution photos can be uploaded to Facebook in seconds.

Unlike other companies, Openreach offers fibre broadband access to all service providers on an

open, wholesale basis, underpinning a competitive market. For further information on Openreach's fibre broadband programme visit www.superfast-openreach.co.uk

¹ Due to the current network topography, and the economics of deployment, it is likely that some premises within selected exchange areas will not initially be able to access fibre-based broadband. Openreach is considering alternative solutions for these locations.

² Source: OOkla/Netindex.com results for 18 January – 6 February, 2013. Relates to average speed experienced by end users.

³ These are the download speeds offered at a wholesale level. It is up to individual communications providers to decide on the level of download speeds offered to consumers and businesses.

⁴ Above footnote also applies.

⁵ Openreach will levy an installation charge for FTTP on demand. It will be up to service providers to decide whether they pass that on to businesses or consumers wishing to use the product.

European Commission View on Technology

In clearing the BDUK framework (State aid SA.33671 (2012/N) – United Kingdom /National Broadband scheme for the UK - Broadband Delivery UK), the European Commission notes:

(Para 74): Since the adoption of the Broadband Guidelines in 2009, technology has evolved and some fixed wireless access solutions can have now similar characteristics than wired NGA solutions such as FTTC and are able to deliver comparable services. Notably some fixed wireless access (FWA) networks, which bridge the last 100-200 meters to the homes with high capacity wireless links are often now comparable in speed to FTTC networks, especially if the distance between the FTTC cabinet and the home is relatively long which is often the case in low density areas. Notably, similar to FTTC, FWA networks can inter alia be

capable of reliably providing speeds in excess of 30Mbps download, they have characteristics (e.g. latency, jitter) that enable advanced services to be delivered such as video-conferencing and High Definition video streaming.

This technological solution is scalable as it would be able to cope with increased take-up and increased demand for capacity and its performance likely to further develop in the coming years.

(Para 75) Therefore the Commission is of the opinion that recent technological and market developments made it possible for certain FWA networks to provide NGA capabilities in low density, rural areas and they can be competing alternatives to FTTC networks...etc .”

The Outlook for Nationwide Broadband Coverage : Not a Pretty Picture

(Analysis of September 2012)

It is important to keep in mind that fixed and mobile broadband connectivity are two very different animals. One is not and cannot be a satisfactory substitute for the other. Although the availability of either fixed or mobile connectivity of acceptable quality where neither of acceptable quality exists today is self-evidently better than the *status quo*, nation-wide coverage for **both** fixed and mobile broadband must be the unambiguous policy goal.

Fixed broadband infrastructure coverage : current picture

While particular concern grows over fixed (and mobile) coverage for so-called “rural” areas, the problem is not confined to marginal areas and populations. As of May 2012, Ofcom reported that some 40% of all UK households – or 9.6 million of an estimated 23.6 million total - have no access to high-speed fixed broadband⁴. In UK policy terms, “high-speed” can currently be considered a minimum of 24mbps, although this has been a moving target⁵. The EU target is 100% coverage of at least 30mbps and 50% coverage of 100mbps by 2020. Looking more closely at this picture:

- Just over 74% - close to 10.4 million - of the 14 million UK residences with high-speed broadband availability fall within the footprint of Virgin Media’s cable network, largely concentrated in the highest-density urban

areas. This cable infrastructure already routinely delivers speeds of 100 mbps, with higher speeds on the way. Recent Ofcom research also confirms that actual cable speeds are as advertised and stable.

- Ofcom data shows that as of May 2012 just over 7.3 million UK households were connected to BT exchanges where copper lines have been replaced with fibre-optic cable from the exchange to the local cabinet (FTTC), but with very rare exception not from the cabinet onward to the home or customer premises (FTTH). While not on a par with Virgin Media cable performance for both speed and stability, BT’s FTTC networks currently deliver a top speed of 76mbps to at least 10% of the area covered by FTTC, falling off for the remaining 90% depending on the length (and quality) of the copper line connecting the cabinet to the customer premises⁶.

However (**again as** of May 2012) some 51.6% - or 3.78 million of the 7.3 million UK residences covered by BT’s £2 billion investment in FTTC so far, fell **within** the Virgin cable footprint (presumably in an effort to compete with Virgin in these high-density, high-value urban markets), thus only extending total UK fixed high-speed broadband availability to an additional 3.54 million homes outside the Virgin footprint.

- This left some 9.6 million UK households which as of May 2012 were served neither by Virgin’s cable network nor a BT FTTC exchange. Virtually all households in this category – if they have a fixed internet connection at all - are connected via BT all-copper legacy ADSL networks delivering varying and relatively low speeds, certainly compared to FTTC in urban areas.

Ofcom’s broadband report of August 2012 shows BT ADSL “up to 20/24mbps” services (e.g. those available outside of FTTC areas) actually delivering a median speed of

⁴ Superfast broadband availability varies by region: England 61%, Scotland 41%, Northern Ireland 97%, Wales 31%, total UK 58%.

⁵ Page 28 House of Lords report, *Broadband for All* : <http://www.publications.parliament.uk/pa/ld201213/ldselect/ldcomun/i/41/41.pdf>

⁶ Ibid. “With the latest DSL technology: a 700 metre line could achieve 40 Mbps; for 2km of copper, ‘up to 5Mbps’; with more than 3km of copper, probably less than 2Mbps.”

5mbps, with 10% of the coverage area receiving 14mbps. Other non FTTC areas reliant on BT's "up to 16mbps" services typically receive a speeds of between 7mbps and 10mbps.

Outlook for extension of fixed high-speed coverage

Under the current policy framework, there is no confidence that the UK's digital divide in fixed high-speed broadband coverage is about to change:

- Virgin Media's cable network has been pieced together over years by the consolidation of two pre-existing networks, both of which had difficulty managing the debt incurred to build them. There appears to be little economic incentive for Virgin to invest in new build beyond its current high-value market footprint, except perhaps in a few more densely populated areas
- BT's stated intention is to pass 66% of UK premises with FTTC extension by end-2014, up from 31% today. If realised, this would extend BT's high-speed fixed coverage from 7.3 million to 15.58 million homes, an increase of 8.28 million.

As of the date of this memorandum (September 2012), BT has announced that they have reached the 10 million benchmark, up from 7.3 million in May. Be that as it may, even reaching their full target would only add an additional 6% - or 1.6 million - of UK homes to the UK's current total fixed high-speed coverage area, still leaving 8 million UK homes outside, down from 9.6 million. Moreover, if BT's priority is to compete with Virgin for the 6.61 million homes in the Virgin footprint where they have not yet deployed FTTC (and may ultimately have to deploy FTTH – much more costly than FTTC⁷), it is fair to ask how much investment capacity will remain to go

beyond. (There is no data yet available on how much of the 2.7 million home increase since May is extension beyond the Virgin footprint .)

- We also note the important conclusions of the recent House of Lords Inquiry highlighting lack of high capacity backbone infrastructure linking unconnected communities/centres to national high capacity networks.
- Meanwhile, Fujitsu appears to have backed off its early enthusiasm for building fixed infrastructure outward geographically from the existing BT platform. This appears to have at least as much to do with perceived economic risk as it does with their inability to strike a deal with BT on the price of access to the BT infrastructure. There is also an open question as to whether BT duct network in non-urban areas can uniformly support fibre deployment. More information may emerge on this issue in the future.
- It also bears stressing that the extension of 4G mobile broadband coverage will **in no way** fill the high-speed performance gap in areas without fixed high-speed infrastructure coverage. This is made crystal clear in Ofcom's recent announcement cited below, foreseeing speeds 1/50th or less of the top speeds already routinely available through fixed connection in most UK urban centres.

⁷ BT's current FTTH plan foresees full replacement of copper with fibre for up to 15 exchange areas. BT has approximately 5500 exchange areas, meaning that this plan provides for about 0.27% coverage by exchange areas. The current roll-out appears to be less than this.

Mobile broadband coverage : the current picture

“Everything is going mobile. This evolution is driven by video, cloud-based services, the internet and machine-to-machine (M2M) connectivity. It changes how people behave and how they leverage mobility to communicate and to improve their daily lives, through new and existing services. Users now demand connectivity anywhere and anytime.

Important driving forces include new affordable smartphones, and the many new connected devices on the market. The total number of mobile subscriptions globally (excluding M2M) will reach around 9 billion in 2017, of which 5 billion will be for mobile broadband. With an increased number of subscriptions, evolved devices and 24/7 connectivity to use them, we expect global mobile data traffic to grow 15 times by the end of 2017.”

*Ericsson Traffic and Market Report (June 2012)*⁸

Current UK 3G licensing policy calls for at least 768kbps broadband coverage for 90% of the UK population (under certain conditions) by 20 June 2013⁹. One need only look at a recent map¹⁰ of mobile “not-spots” (areas with very low

or no 3G coverage) across the UK to understand that mobile operators have seen no financial interest in extending even such basic coverage to these areas – many of which are by no means remote but rather simply more costly to reach and less densely populated than close-by urban areas. And these are of course “not-spots” for anybody and everybody passing through, not just residents.

Outlook for extension of mobile broadband coverage

The coming 4G mobile roll-out has been seen as a way to improve this situation. After much delay, Ofcom has now announced the terms of the coming 4G spectrum auctions. The key coverage obligation, which will only apply to one license of the four to be awarded, is...

“... that users in an area within which 98% of the UK population lives should be able to receive a 2Mbps mobile broadband service both outdoors and at some indoor locations within the vast majority of premises, provided that there are few other users using the service simultaneously in the vicinity. (Note 140 -The precise service level that a single user receives will depend on, for example, the user’s location within a cell, the usage of other nearby users and on the location of those users within the cell and surrounding cells.)”

2Mbps of uncertain quality is a modest obligation and upgrade from 768kbps. It remains to be seen how realistic it is to expect that the single mobile operator with this obligation will see in it a priority market opportunity and incentive to build mobile 4G infrastructure with anything more than the minimum required performance capacity much rich urban and sub-urban areas.

By the same token, the remaining 3 licensees not under this obligation have every incentive to invest in capacity and related transmission capability mainly in densely-populated areas where it is more cost effective to build higher capacity mobile networks covering many more potential subscribers. There is thus clearly a risk not only that mobile 4G roll-out will do nothing to overcome the UK’s entrenched fixed

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http://www.ericsson.com/res/docs/2012/traffic_and_market_report_june_2012.pdf

⁹ <http://stakeholders.ofcom.org.uk/binaries/consultations/2100-MHz-Third-Generation-Mobile/annexes/methodology.pdf>

¹⁰ <http://opensignalmaps.com/reports/uk-august-2011.php>

broadband divide, but little or nothing to overcome our mobile broadband divide.

UK broadband policy needs urgent review

Broadband infrastructure is the most important public infrastructure priority facing our generation of leadership – upstream from all other infrastructure investment, spreading economic engagement and value creation throughout our society and our economy. Nationwide coverage for both fixed and mobile broadband of acceptable performance quality must be the unambiguous objective of UK broadband policy.

Judged against this imperative, it becomes increasingly clear that the Government's current policy strategy based on local initiatives and competition for inadequate funding is contributing to a worrisome digital deficit outside our most densely populated areas. This directly threatens our wider strategy for renewed growth and jobs, and our social cohesion. The signatories of this memorandum are by no means alone in our concern. In its recent inquiry report, *Broadband for All*, the House of Lords

"...make the case for a national broadband network which should be regarded as a fundamental strategic asset, to which different people can connect in different ways according to their needs and demands... Access to the internet should be seen as a domestic essential and regarded as a key utility. The spectre of a widening digital divide is a profound source of concern which requires the Government to address its origin with greater vigour than we believe is currently the case."

The UK urgently needs to put a genuinely national broadband policy in place. One need only observe the strategic priority now accorded broadband infrastructure policy by the governments of Australia, Canada and the United States – to name just three - to gauge the degree to which successive UK governments have essentially outsourced to

regulators and local authorities one of the most vital national policy priorities of our time.

The funding gap

It is self-evident given the current state of broadband infrastructure build that neither fixed nor mobile operators have so far seen sufficient financial incentive to invest in extending their broadband coverage to the millions of households and smaller businesses in poorly served areas of the UK.

At the same time, it has become crystal clear that both the scale of public funding currently available to support the necessary network extensions together with the decentralised process by which local councils compete for it have proved largely inadequate to fill this funding gap. This situation cannot be allowed to endure.

We also endorse the House of Lords suggestion that the scope of public network funding should also include infrastructure connecting isolated communities to national backbone network.

The technology gap

The government needs to consider all technical solutions for nationwide broadband coverage. For example, Australia, Canada and Brazil have made some 4G spectrum available to fixed network operators - not just mobile operators. Fixed wireless connection allows for less costly extension of fixed broadband coverage in less densely populated areas compared with in-ground cabling.¹¹

¹¹ A fixed wireless network connects a single emitting tower to stationary receptors on any subscriber premises in the coverage area without a wireline. The lower cost significantly improves the economic incentive for fixed operators to extend coverage this way, particularly compared with the high cost of fibre all the way to all premises in the area. Today fixed 4G wireless infrastructure can be expected to deliver speeds of at least 15 mbps (using Australia as an example), while recent advances in LTE 4G technology indicate that speeds approaching 50mbps may be achievable in certain geographic scenarios. While not strictly speaking "high-speed" on a par with Virgin cable or BT FTTC, 15 mbps would be a vast improvement for the millions of UK residence who currently have either no prospect of broadband or

The regulatory framework

We need to disabuse ourselves of the idea that the rollout of 4G mobile services will miraculously eliminate our mobile broadband coverage divide, let alone our fixed coverage divide. The latest statement from Ofcom regarding the 4G mobile spectrum auctions gives no confidence that the regulator is imposing conditions on 4G licence-holders sufficient to drive mobile 4G investment with acceptable performance in areas where there is little or no coverage today.

The need for political authority

It is in nobody's interest to force fixed or mobile operators to invest in loss-making operations. Regulatory measures can only redress to a certain degree the economic risk/reward hurdles which today deter would-be investors in both fixed and mobile broadband infrastructures from building out beyond the UK's densely populated, high-value markets.

The necessary scale of this funding, together with the policy framework, objectives and conditions governing its availability, can only be determined as part of a coherent nation-wide UK broadband policy strategy also taking full account of economic realities and regulatory choices. This is why the government must urgently reassert its authority over UK broadband policy.

This memorandum has been prepared by Peter Linton, Managing Director – Burson-Marsteller Brussels, with strategic analysis and support from Matthew Copeland, independent advisor on telecommunications networks and technologies with long experience in the build-out of the UK's telecommunications infrastructure. September 2012.

limited speeds via BT's ADSL services, and certainly preferable to 2mbps mobile 4G service.



Join business leaders, industry experts and government and EU representatives campaigning to bring better broadband and mobile communication to our country.

The '**Digital Business First**' campaign was started in Oxford where over 50 business leaders from both counties signed up to support to promote the creation of a complete digital architecture for Britain.

Business organisations Buckinghamshire Business First and Oxfordshire Business First are working together to ensure that the Government puts digital connectivity at the heart of its vision for economic growth and business competitiveness. Businesses are invited to pledge their support and engage with 'Digital Business First' to urge Government to create a better connected Britain.

This campaign has already drawn significant support from the many business organisations across the country that are frustrated by the lack of a coherent and capable digital infrastructure. As the campaign continues, we will be reaching out to many more businesses on a regional and national basis to gain their views.

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