

The next phase of digital policy: Stimulating demand for superfast broadband

Response to DCMS Digital Communications Infrastructure Strategy consultation

Introduction

The current phase of digital policy has focused almost entirely on supply. In this Parliament upwards of £1.5bn of public subsidy is being spent to try to achieve the objective of delivering 95% penetration of superfast broadband by 2017.

This submission focuses on the critical next phase of digital policy – how to build and sustain demand for high speed connectivity.

In setting upon the next phase of digital policy, we should feel optimistic about the base we are starting from. The UK market is characterised by aggressive infrastructure competition driving investment in world-class networks and services. Those investments are already driving an explosion in consumer demand for data-heavy services, which our future-proof networks are absorbing. Taken together, those two conditions have delivered a digital economy already worth £82bn per annum and growing.

In building on that success there are two key challenges that policy makers now need to address.

First, there are 10m adult citizens and 20% of small businesses who currently have no online presence. The underlying lying reasons for that are not about access. 92% of SMEs have access to the internet and, with rollout of superfast to rural areas, residential access to superfast will exceed that by 2017. The central barriers to take up are: 1.lack of awareness of the benefits of connectivity - a marketing barrier; and 2. low levels of digital skills and confidence - a capability barrier.

There have been some early examples of demand-side intervention over the course of this Parliament aimed at removing the marketing and capability barriers. The Super Connected Vouchers scheme, “digital by default” public service reform, Web Fuelled Businesses, GoON UK’s work and the sponsorship of Tech City have all produced laudable successes. However, each has operated as a largely distinct policy intervention, and Departmental responsibility has been spread across Government. A more coherent policy framework targeted at ending digital exclusion by stimulating demand for superfast broadband is now required.

The **second** challenge is to create the right conditions for infrastructure investors to continue to invest and to keep pace with rising demand. In considering that challenge, there has been a tendency for the debate to fixate on setting a particular speed target for the market to reach and/or prescribing a particular network topology required to meet it. Evidence of existing network capacity and success in absorbing exploding data consumption strongly suggests that these are red herrings for policy makers – the market has an incentive to deploy future-proof technologies. What’s more, it is widely recognised that the strong dynamic of infrastructure-based competition delivers the best outcomes for consumers. Specifically, where there are competing infrastructures – such as the insurgent (Virgin Media) and incumbent (BT) – consecutive counter-investment occurs as each

provider vies for speed and quality leadership. Government must therefore do all that it can to incentivise and maximise such competition and ensure that it is sustainable.

The challenge for policy makers then, is how to spread that dynamic of infrastructure-based competition across more of the market. Private investment in broadband infrastructure is currently restrained by a series of planning regulations and red tape which constitute 85% of the total cost of network build. Many of those regulations are out-dated and do not reflect the technological advances that the telecommunications industry has gone through over the past two decades. By giving network operators more flexibility in the methods we use to deploy broadband networks, and removing some of the costly red tape associated with streetworks management, Government could dramatically improve the financial conditions limiting network investment.

Similarly, the right regulatory framework is a crucial factor in both incentivising and sustaining investment in infrastructure. Regulatory certainty is critical, and intervention should be reserved for circumstances in which there are proven, tangible market failures.

Virgin Media's submission does not address all of the questions raised within the Digital Communications Infrastructure Strategy consultation but instead focuses on three broad questions that run throughout the strategy:

Question 1: How to best ensure networks keep up to date with new business models and changes in technology?

Question 2: What changes to the regulatory framework could incentivise the provision of more communications infrastructure?

Question 3: What is the appropriate focus for Government intervention?

How to best ensure networks keep up to date with new business models and changes in technology?

Delivering infrastructure-based competition

Commercial investment in next generation network infrastructure - £13.5 billion on the part of Virgin Media - is the foundation on which an internet economy currently worth £82 billion is built. This investment represents extremely good value for UK plc, with every £1 invested in networks underpinning a further £5 of value¹ generated by use of that infrastructure.

In markets where there is a strong challenger network operator investing alongside the incumbent, broadband penetration is on average 20% higher and the incumbent invests 8% more of its revenues in network upgrade². In the approximately 50% of the UK where Virgin Media has network, our investment, and the response it has stimulated from our competitor BT in upgrading its own network, has delivered globally competitive speeds. Virgin Media's commitment to raising the ceiling of broadband speeds in the UK – most recently through the introduction of a new top tier of 152Mbps and an entry level 50Mbps speed which is three times faster than the UK average – has spurred increases in speed by our competitor to the benefit of the entire market. As a result, average broadband speeds have quadrupled since 2008 and BT has been pushed to upgrade its own network through the roll-out of Infinity.

Our investment delivers genuine choice for the consumer. Our hybrid fibre coaxial network is a fundamentally different topology to that of BT's and delivers a different quality of service. As demonstrated by 6 years of Ofcom broadband speed reports, Virgin Media delivers the headline speeds it advertises to consumers. We have topped each Ofcom report and have proven that there is no significant degradation of speeds over our network, since speeds do not decrease with distance over coaxial as they do over copper. Aggressive competition in the UK broadband market has not only delivered genuine choice but also value to consumers. Average broadband bills have decreased by 7% in real terms since 2008 and the UK has the lowest priced available broadband products of the EU's leading telecommunications markets.

Virgin Media's network has the capacity to continue to meet projected trends in consumer demand for more traffic long into the future. A recent study undertaken by Communication Chambers on behalf of the Broadband Strategy Group³ identified that, even in peak times of consumption, the average home broadband connection was using just 0.8% of its capacity. The report draws an important distinction: whilst total internet traffic continues to increase rapidly (Analysys Mason estimate by 42% per annum⁴), that does not correlate to consumers needing radically higher bandwidth (speed). In fact, the report projects that "the median household will require bandwidth of 19 Mbps by 2023, whilst the top 1% of high usage households will have demand of 35-39 Mbps". Since Virgin Media's entry level speed is now 50Mbps, these projections clearly fall well within the existing capability of our network. What's more, we have demonstrated that our standard

¹ <http://www.atkearney.com/index.php/Publications/the-internet-economy-in-the-united-kingdom.html>

² http://cable-europe.eu.apache11.hostbasket.com/content/uploads/2012/09/091008_Solon_Cable-in-Europe-FINAL.pdf

³ <http://www.broadbanduk.org/2013/11/05/bsg-publishes-new-model-for-analysing-domestic-demand-for-bandwidth/>

⁴ <https://www.gov.uk/government/publications/digital-communications-infrastructure-strategy>

residential network is capable of delivering far higher speeds. In 2011 we trialled a 1.5Gbps connection – at the time the world’s fastest broadband speed – across our standard residential broadband network at Tech Hub in Shoreditch Roundabout. We are currently trialling a 1Gbps offer to a small village in Cambridgeshire.

The report identifies three factors that influence the peak bandwidth requirements of a household: the number of people using the internet simultaneously; for what period time; and the bandwidth requirement of the activity they are doing. The first two factors are clearly limited in how much they can increase. The average number of internet users per household is stable at 1.9 and the rate of increase in average time spent online has started to slow (37hrs for the UK in 2013 – an increase of 5% on the previous year). The bandwidth requirements of online activities are also currently very stable. HD video is the main driver of increasing traffic and estimates of its bandwidth requirements vary between 5Mbps and 10Mbps. Streaming via 4k TV is estimated to require a maximum of 20Mbps. The report also notes that networks are getting more sophisticated in how they process video. Video compression rates are improving at a rate of c10% year on year, which has a significant impact on the bit rate – and therefore – bandwidth requirement of video streaming.

In short, the report concludes that the UK’s existing network infrastructure is more than capable of meeting the plausible demand scenario that it projects. Where there is strong demand for high speed connectivity and two competing infrastructure investors, the market benefits from a self-sustaining cycle of investment. Those conditions are serving the UK well and should be encouraged to flourish.

First and foremost, that requires that Government is wary of any intervention that might disrupt those competitive dynamics and chill private investment. For example, any Government intervention to use public money to subsidise network build in areas where the market is already meeting supply would critically undermine those conditions. It is therefore vital that any future Government-funded broadband roll-out be precisely targeted to areas where there is proven market failure in the supply of superfast broadband and is administered in a way that does not distort competition. However, Virgin Media believes that it is in the taxpayers’ best interest for Government to first consider how far private investment can help meet failures in the supply of broadband under optimum investment conditions before considering whether public funding is required.

Similarly, Government, regulators and policy makers must be alert to the effects and consequences of regulation. This must include not just consideration of the impact on regulated entities, but on the wider market – particularly competing investors in infrastructure. It is widely accepted that the best outcomes for consumers are achieved in competitive markets, where market forces have been allowed to evolve and flourish. While genuine market failures and distortions caused by uneven playing fields should of course be addressed, regulatory (and policy) intervention must be a last resort. Providers should be allowed to innovate and to experiment/prove new technologies and products.

In an increasingly evolving and convergent environment, this principle should also extend to new and emerging markets and technologies, which must be given time to develop and evolve, absent of

over-zealous regulatory influence. While it is critically important to avoid regulatory asymmetry between new and existing players, this does not mean that additional regulation is the answer. An intrusive regulatory approach would serve only to frustrate investment and innovation leading, ultimately, to sub-optimal outcomes for consumers.

What changes to the regulatory framework could incentivise the provision of communications infrastructure?

Virgin Media is committed to expanding our network footprint beyond the approximately 12.7 million homes that can currently access our services, where there is a viable economic case for investment. In 2014 alone, we have announced a network expansion programme to c.150,000 and are determined to build out further. Our ability to do so is limited by the fact that 85% of our build out costs are the product of planning restrictions relating to how we deploy our network or burdensome and costly streetworks regulation. These are not optimum investment conditions and as such, there is a high risk that taxpayer money could be wasted subsidising network build – particularly on the fringes of existing networks in UK cities – where private investment could meet demand if regulatory barriers were removed.

The following areas of planning regulation act as barriers to private network investment:

- **Restrictions to innovative deployment techniques:**
 - Innovative deployment techniques could radically reduce the cost of network build.
 - Narrow trenching would cut the costs of trench deployment by one-third.
 - Approximately 85% of the cost associated with building broadband infrastructure is civil engineering cost or "civils" and the vast majority of those (again 86%) are from the average £43 per metre cost of digging a traditional trench in the footpath.
 - Narrow-trenching reduces the width of a trench from c250/350mm to anywhere down to 70mm. That dramatically increases the amount of distance that can be dug in a day whilst cutting the environment impact of broadband deployment in half. Narrow-trenching does not alter the depth at which broadband networks are deployed.
 - Specification for the Reinstatement of Openings in Highways (SROH) Code of Practice allows for narrow-trenching.
 - Even though narrow-trenching is included in the SROH, in Virgin Media's experience, Local Authorities are simply resistant to entering into discussions about any method of innovative deployment.
 - The one exception is Cambridgeshire County Council which has agreed for Virgin Media to undertake a narrow-trenching trial in Papworth, supplying 290 homes in that village with 1Gbps speeds. This trial is currently live and will be complete by the end of September.
 - Narrow-trenching delivers mutual benefits to all parties.
 - The increase in speed of deployment is in the end consumers' interest and also allows local authorities more flexibility in scheduling of works.
 - The cost savings allow telecommunications companies to build network to more homes
 - There are environmental benefits, with a 60% reduction in the amount of waste

- **We encourage DCMS to work with the Department for Transport to update the code with a firm encouragement of innovative techniques such as narrow-trenching and consider the role that Central Government can play in giving firm direction to local authorities to adopt these techniques.**

- **Moving from methods-based assessment of reinstatements to performance-based**
 - Linked to the issue above, the Specification for the Reinstatement of Openings in Highways is currently extremely prescriptive in setting rigid standards on the methods used for reinstating footways following a broadband deployment.
 - In practice, these prescriptions limit our ability to apply flexible civil engineering solutions and act as a barrier to techniques like narrow-trenching.
 - For instance, Virgin Media's narrow-trenching trial in Papworth utilises foam concrete in our trench reinstatement, a proven, high-performance material. Many local authorities are resistant to allowing foam concrete for use in a reinstatement. Ironically, that resistance is based on the fact that foam concrete is a rigid, non-sinking material meaning that a ridge will develop if the surrounding pathway sinks. Virgin Media believes that it should not be penalised for failures in the performance of pathways surrounding our own well-performing trench reinstatements.
 - In addition, Local Authorities can and do charge for technical failures to comply reinstatement standards, even where the reinstatement is performing perfectly.
 - Since 2008, VM has paid more than £12m to Local Authorities on coring/sampling/testing and replacement of fully functional reinstatements.
 - Further, there is no effective arbitration process for telecommunication companies and Local Authorities to go through to help resolve cases so they often unnecessarily result in costly litigation.
 - **VM wants an urgent review of reinstatement rules under the SROH Code to move to a performance-based assessment whereby a reinstatement is only considered failed if it is not functioning, and believes that Local Authorities should bear the cost of sampling/testing/coring where a reinstatement is not a fail.**
 - **We would also welcome a formalised arbitration process and incentives for Local Authorities to go through arbitration before litigation.**

- **Wayleave applied to overhead deployment:**
 - Virgin Media has been unable to build a viable business case for overhead deployment using third party infrastructure owing to the unrestricted wayleave demands that third parties are able to place on us.
 - Overhead deployment can reduce "civils" costs associated with network expansion by c35%.
 - However, there is insufficient arbitration between landlords and network operators and no constraint on landlords freedom to charge.
 - **Virgin Media believes that the Electronic Communications Code is in urgent need of review and measures should be introduced to constrain the demands of landlords beyond a reasonable market price for access to their infrastructure or land.**

- **Wayleave arrangements for installation of broadband to private property**

- Under the existing Electronic Communications Code, wayleave negotiations between Communications Providers and private landlords lack a robust arbitration mechanism to moderate payment demands and truncate negotiations.
- As a result, in some negotiations, Communication Providers can be held to ransom and end users are frustrated by delay. The system of comparable pricing in practice means that landlords have freedom to set an arbitrary value for access which can be far removed from the open market value of the land.
- By contrast, gas and electricity companies have statutory rights to acquire wayleaves compulsorily via the Courts. Water companies have the right to lay pipes on "reasonable notice" – i.e., permission is not required, nor is there a right to object. In the event of disputes, gas and electricity go to a specialist court which has experience and knowledge. This speeds the process. Compensation provisions are applied based on the open market value of the right, not the "ransom" value.
- As Government brings forward legislation to address the Law Commission proposals on Code reform, Virgin Media believes the following reforms would remove barriers to access:
 - Communications Providers should have access to a **specialist court** to arbitrate on disputes with landlords as other utilities do.
 - Recourse to courts should be available in relation to any issue of disagreement – the Law Commission's proposal that recourse can only be sought where valuation is the single outstanding issue leaves the arbitration open to gaming by landlords
 - Communications Providers should have the right to apply to this court for early access to the land for network installation pending final resolution of any dispute.
 - A standardised legal agreement should be produced in coordination with Ofcom
 - Tenant's ability to sign a wayleave agreement for as long as they want the service should be retained.
- **Permit scheme**
 - Guidance from the Department for Transport says that permit schemes should only be applied to Category 1 and 2 roads, where the risk of congestion is highest.
 - 50 of the 63 permit schemes currently activated by Local Authorities extend the schemes to Category 3 and 4 roads – smaller, residential, non-critical roads. These are the roads that VM typically provides residential broadband, TV and telephony services to.
 - Since 2010, VM has paid £13m to local authorities to undertake small works on Category 3 and 4 roads.
 - Department for Transport guidance is purely advisory and there is no requirement for Local Authorities to comply with it.
 - Virgin Media wants to see Local Authorities design permit schemes with the actual policy objective that they were created for in mind – reducing traffic congestion on critical roads.
 - **The guidance exempting Category 3 and 4 roads should be included in the regulations via amendments to the Traffic Management Act.**
 - **Those regulations should be applied retrospectively to existing schemes**
 - **Guidance should promote zero-rated permits for works taking place on traffic sensitive roads but at non-traffic sensitive times.**

An appropriate role for Government

Demand stimulation as the focus of the next phase of digital policy

There are significant societal and economic benefits associated with getting more people online. Digitalisation of public services is projected to save Government between £3.30 and £12 per transaction⁵ - a potential annual saving of £5.1bn⁶. The UK already benefits from a thriving digital economy – the largest in the G20 – which is projected to constitute 12% of GDP by 2016⁷ and sees UK consumers spend more per annum online - £1,175 per head in 2013⁸ – than other developed economies. Digital maturity and online presence is directly linked to business growth. A digital mature small business is three times more likely to grow than an immature one⁹. The total economic benefit of getting SMEs online is estimated to be as high as £18.8bn in annual revenue growth and could stimulate the creation of 58,000 new jobs¹⁰.

The fact that 10 million UK adult citizens and 20% of SMEs currently have no online presence therefore has a direct impact on the UK's long-term global competitiveness.

Some believe that the remedy to digital exclusion is simply to provide access to superfast broadband. Of course addressing access is the starting point to driving digital engagement, but evidence of existing consumer behaviour strongly suggests that access alone does not solve the demand challenge – and in any event, if demand is present, providers have a very strong incentive to deliver services to meet that demand.

- 79% of non-users state that they do not use the internet because they don't see the benefits of being online and 63% cite a lack of basic digital skills¹¹.
- The possession of basic online skills have also been linked to socio-economic conditions, with BBC research suggesting that 68% of people from lower socio-economic backgrounds cannot perform basic online tasks.¹²
- Only 19% of digitally immature SMEs believe that being online could help grow their revenue¹³ whilst lack of access does not appear to be widespread – according to the FSB, 92% of SMEs have access to the internet.
- A quarter of SMEs say that a lack of basic digital skills holds them back¹⁴.
- The Centre for Economics and Business Research listed as the primary barrier to the UK realising the £42 billion opportunity associated with SME adoption of data optimisation was the prohibitive costs for SMEs in gaining technically trained staff capable of undertaking large scale data analysis¹⁵.

⁵ PWC research

⁶ <http://www.go-on.co.uk/wp-content/uploads/2013/12/The-Booz-Report-Nov2012.pdf>

⁷ <http://www.bbc.co.uk/news/business-17405016>

⁸ <http://media.ofcom.org.uk/news/2013/uk-communications-deals-cheaper/>

⁹ <http://resources.lloydsbank.com/economic-research/uk-business-digital-index-2014/>

¹⁰ http://www.cebr.com/wp-content/uploads/1733_Cebr_Value-of-Data-Equity_report.pdf - Executive Summary, page 4

¹¹ <http://www.go-on.co.uk/wp-content/uploads/2013/12/The-Booz-Report-Nov2012.pdf>

¹² BBC Media Literacy: Understanding Digital Capabilities follow-up September 2013 and March 2014

¹³ <http://resources.lloydsbank.com/economic-research/uk-business-digital-index-2014/>

¹⁴ <http://www.go-on.co.uk/wp-content/uploads/2013/12/The-Booz-Report-Nov2012.pdf>

¹⁵ http://www.cebr.com/wp-content/uploads/1733_Cebr_Value-of-Data-Equity_report.pdf Page 21

- The Intel Small Business Index (2011) identified lack of financial and human resources as the primary reason that close to 50% of SMEs have failed to adopt advanced technology¹⁶.
- In the creative sector, where technical capacity is perhaps a greater need than most, 8 out of 10 SMEs have no specific training budget or spend less than £1,000 per annum on workforce training¹⁷.
- Given these financial constraints, there is a strong sense amongst SMEs that lack of direct government funding prevents them from training staff in new technologies – 78.5% agree¹⁸.

This evidence points to a more complex set of challenges to meet in getting digitally excluded citizens and businesses online. There is a significant section of society that is not yet sold on the benefits of being online. That presents a marketing challenge to both private organisations and Government. Equally, many of those who currently live offline lack digital confidence and skills presenting a capability challenge. Virgin Media does not have specific policy solutions to these challenges at this stage. However, we make the firm recommendation that the next phase of digital policy – and any public funding associated with it - should focus on a coherent demand stimulation policy framework that seeks to meet those two challenges.

In developing that framework, Virgin Media offers some observations on early policies targeted at demand stimulation that have been developed over the course of this Parliament.

Super Connected Cities Voucher Scheme

The £150million Super Connected Cities Programme, providing financial support of up to £3,000 for SMEs to upgrade their internet access – is a welcome move towards demand stimulation on the part of Government. Virgin Media Business is the largest provider of vouchers under the scheme to date.

The Voucher scheme has, in its infancy, focused on one perceived barrier to SME take-up of broadband – upfront affordability. For very small businesses that have traditionally existed offline, and have tight budgetary constraints and single figure numbers of employees, it is undeniably the case that many are unconvinced that the benefits of connectivity outweigh the costs. For those hard to reach businesses, it may be that removing the price barrier is sufficient to unlocking demand.

Early experience from the Voucher Scheme suggests however that the challenge is more complex than that. Greater focus and funding may be required in marketing the potential benefits of broadband under the Vouchers Scheme. **There is a strong case for increasing the proportion of Super Connected Cities funding spent on marketing in addition to that spent on the connectivity subsidy itself.**

We urge Government to continue to fund the Voucher Scheme beyond its existing deadline of March 2015.

¹⁶<http://newsroom.intel.com/docs/DOC-2451> - 2011 Survey of 3,000 SMEs

¹⁷<http://www.e-skills.com/Documents/Research/General/StrategicSkillsAssessmentfortheDigitalEconomy.pdf>

¹⁸<http://newsroom.intel.com/docs/DOC-2451>

Tech City

Tech City has also been an extremely successful marketing project, building the profile of East London as a tech centre, attracting inward investment, stimulating demand for connectivity amongst SMEs, and driving an uplift in digital skills.

Tech City provides a useful blueprint but is a narrowly focused initiative – Virgin Media believes the model should be extended and made more ambitious.

In doing so, it is important to reflect on what has made Tech City a success. It was not a victory for Government-sponsored investment in infrastructure – Old Street Roundabout already benefitted from world-class broadband as Virgin Media demonstrated in 2011 when we tested the then world's fastest speed of 1.5Gb. The vast majority of business premises in Tech City are within reach of a Virgin Media business grade leased line connection and Virgin Media announced in August 2014 that we are in the process of expanding our network in East London, including areas within Tech City, by 100,000 homes.

The real lesson that Tech City has demonstrated is what can be achieved when Government markets the UK as a leading site for technical innovation as part of its trade and investment story to the world. Attracting leading brands as anchor tenants was critical to its success. It has shown what can be achieved when cities aggregate demand for digital skills, services and innovation in a location that has the right foundations of connectivity and a pipeline of talent.

Virgin Media would encourage similar Government support for Tech City-style initiatives which are being launched by cities up and down the country focusing on marketing the attractiveness of those cities and the strength of their broadband infrastructure to global tech companies, and ensuring that a pipeline of skilled workers and SMEs exist for anchor tenants to take advantage of.

Digital training for small businesses

Existing Government-supported digital training programmes for SMEs could be better targeted towards 'hard to reach' digitally immature businesses.

The BIS sponsored Web Fuelled Businesses programme features some extremely valuable content for SMEs, as well as very high profile entrepreneur endorsement. Content can be accessed – largely free of charge – by small businesses via a series of webinars hosted on the website. However, the content and format is not as accessible for businesses that have yet to embrace the digital world as it might be for more digitally confident users. Whilst it is a valuable contribution, Virgin Media would question whether a more hands-on approach to digital training is required for digitally immature businesses.

In 2013, Virgin Media partnered with digital skills provider Freeformers to conduct an intensive, three week training programme for 25 small businesses in Birmingham. We deliberately targeted businesses who had to date had not invested in digital services and were unconvinced by what broadband could offer them – so-called hard to reach businesses – from a range of sectors. Virgin

Media and Freeformers devised a digital training module that started at a very basic level of technical understanding and built to providing advance training on how to code, build a website and populate it with content, inbed video and develop a social media strategy. The fast moving curriculum demanded a classroom-based environment to ensure that the participants could ask questions and build as they learnt. Virgin Media received extraordinarily positive feedback from the group of businesses and at the end of the three week training programme, observed a material improvement in the digital capability of all participants.

The key lesson we took from this process is that it is possible to engage even very traditional small businesses in digital technology and empower them to pursue digitalised business practices. But the forum and curriculum that is used to achieve that result is critical. **For hard to reach businesses, Virgin Media's experience was that they required structured, classroom based teaching and benefitted most from a learn-by-building approach.**

October 2014