Broadband Stakeholder Group Input to the UK's Digital Strategy

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Group

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The Broadband Stakeholder Group (BSG) is the UK government's leading advisory group on broadband. It provides a neutral forum for organisations across the converging broadband value-chain to discuss and resolve key policy, regulatory and commercial issues, with the ultimate aim of helping to create a strong and competitive UK knowledge economy.

Executive Summary

The Broadband Stakeholder Group (BSG) welcomes the opportunity to respond to the Department for Culture, Media and Sport (DCMS) call for input on a new UK Digital Strategy to 2020.

It is hard to overestimate the transformative role that digital applications and services are having and will have on everyday life. Increasing levels of connectivity, the power of cloud computing and the Internet of Things are likely to lead to revolutions in how we think about concepts as basic as work and car ownership. In formulating this strategy we agree that the Government is right to focus on digital infrastructure and digital literacy – the 'foundations' of any successful digital country – as well as the services and applications that are enabled by these building blocks.

We therefore hope that this strategy will be the prism through which policy decisions in these areas are examined right across Government. Clearly all departments need to be involved not just in the provision of more focused, digitally enabled, services but also in assisting in the deployment of new digital networks and smarter infrastructure. As outlined below we believe that the existing Digital Implementation and Inclusion taskforce is the right body to own and drive this strategy across Government.

To do so the strategy needs to clearly outline what its goals are – ie to see the UK tech sector grow to x% of the UK economy, employ more people or does it wish for British businesses to be the European leader in integration of digital technology. The strategy should of course seek to encompass all of these but we believe some headline, measurable, targets would be useful in focusing both Government's and industry's efforts. Further, it is important that this strategy evolves over the course of the Parliament. Clearly the UK has much to gain from new technologies such as 5G. Whilst they may not be ready to

deploy on national scale by 2020, the strategy will still need to pave the way for them if we are to maximise their potential.

BSG members are often thought leaders in how technology will affect our society and economy, however, for this consultation we have limited our comments to the impact that connectivity can have on small businesses and the 'foundations'.

1. Unlocking digital growth

Unlocking digital growth must focus on making sure that all sectors – from builders and manufacturers to architect companies and games developers – have the right access to skills and infrastructure to take advantage of the current and future digital revolutions. Yet, if we are to fully maximise the well-known £18bn[1] of incremental growth that could be unlocked if SMEs take full advantage of digital technology, then we must also tackle businesses', particularly micro and small, attitude to the internet.

The 'tech sector' by definition, tend to strive to push the boundaries of current technology. Meeting the needs of this sector is incredibly important to ensure that the UK can take advantage of our highly competitive telecoms sector. With businesses now being built around digital connectivity, reliability and resilience feature highly in the characteristics that they demand, be that fixed or on the move – in addition to often requiring high bandwidth connections.

In the wider economy however, our primary research of a 1000 micro-businesses found that awareness of and attitude to digital applications is the first hurdle to overcome in order to ensure that all businesses are able to unlock their digital potential[2]. For instance, comparable businesses in the hospitality sector had opposing attitudes to social media – with some viewing it as a way to expand their geographical reach and grow their business, whilst others viewed it as irrelevant or a waste of time. These findings have been backed up by additional research by Lloyds Bank which found in its 2015 Digital Index that: *"Attitudes and awareness of the benefits of digital are still the greatest barriers to small businesses and charities doing more online with one-quarter still stating digital is not relevant to their organisation"* [3].

Tackling this barrier is difficult and is unlikely to be changed by any action that central Government can take on its own. Rather there must be concerted action between digital skill and inclusion charities, the telecoms industry and its partners, local government, local enterprise partnerships and in specific

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[1] Booz&Co, This is for everyone: The case for universal digitisation, November 2012
[2] Broadband Stakeholder Group/Comres, Broadband usage among micro-businesses, November 2014
[3] Lloyds Bank, UK Business Digital Index 2015

business communities to ensure that comparisons between companies are on a like-for-like basis. Much progress has already been made and the Lloyds Index noted the difference that the regional work that had taken place in the North East under the Go On UK umbrella had made.

Recommendation: The BSG recognises the Government's reasons' that led to the SME Voucher Connection Scheme being closed but believes that those SME's that have taken advantage of the scheme can provide valuable insights into their approach to superfast connectivity and the productivity or economic gains that they may have realised. The Government should therefore commission research into these companies experience and build up case-studies that could be used to persuade other SMEs of the utility of making more use of digital technologies.

Our research[4] showed that younger companies are both more likely to make use of superfast broadband connections and take advantage of more advanced digital technologies such as cloud computing. Therefore, if more companies seek to make use of the services available to them they may find skills and connectivity problems although, as detailed below, our bandwidth requirements for small businesses show that the current generation 'superfast' infrastructure should be sufficient to meet the majority of bandwidth requirements.

4. Building the foundations

Digital connectivity underpins nearly all areas of the economy, with internet applications playing an often disruptive but undoubtedly positive role, and lies at the heart of the UK's critical national infrastructure. Until recently, the benefits gained from being connected for the user, be that consumer, citizen, business or Government, were largely additional to what can be accomplished in the non-digital or paper world. Today, the necessity of being online means that those who are not are in danger of suffering a 'digital detriment'. Whether it be the cost of transacting offline vs online, the 'digital by default' of government services or the missed growth opportunities for businesses, being connected is now a necessity.

Ensuring that users are able to access the internet is an important and complex issue which encompasses issues such as the ability to pay and having the relevant skills. The first step though is the provision of digital infrastructure.

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[4] BSG/Comres, Broadband usage among micro-businesses

The BSG is made up of companies that have a wide range of views on the current state of the UK's digital infrastructure and desired regulatory or policy decisions. However, all believe that by 2020 we will need a better quality, more resilient infrastructure with a higher capacity and coverage levels. This will require substantial and continued levels of investment.

We believe that this is best delivered by an approach that prioritises competition to deliver beneficial outcomes for users, accompanied by limited and targeted interventions in areas where market failure occurs.

Competition, at the infrastructure level and at the network and service level over Openreach infrastructure, has delivered substantial benefits to the end-user since the Telecoms Strategic Review, not least; lower prices, a more capable and reliable service encouraging higher take-up. Although some BSG sponsors believe that the precise approach needed to ensure effective levels of competition is in need of revision due to changing landscape, be that due to the transition to superfast broadband, network and/or service convergence, we are clear that the Government and Ofcom's approach should be market-focused.

Role of Government

We believe that Government has an important role in setting the overriding policy goal, based upon a strong foundation of evidence. Once Government has set the ambition then it needs to ensure that the right conditions are in place for the market to be able to realise that ambition. This approach will often need to span the whole of the public sector – from business rates and central government policy to ensuring a consistent approach between local councils' digital and planning teams – to ensure that commercial investment can go as far as possible. The Digital Economy Unit, which now sits wholly within the Department for Culture, Media and Sport (DCMS), as well as the creation of the Digital Infrastructure and Inclusion taskforce are a welcome step in uniting Government policy in this way.

Industry should then be allowed to meet these goals with Ofcom ensuring that economic bottlenecks, if they do exist, are regulated to allow access. In some areas though the commercial case for investment will always be weaker. Here the Government should seek to facilitate industry cooperation and attempt to create the right incentive scheme to encourage private sector investment. Only when all other approaches have been exhausted should the Government consider direct intervention – ie subsidy. Any such intervention should be evidence based with a clearly defined objective and must be done in a way that does not weaken retail competition. Ofcom should and does play an important role in helping ensure that this is the case.

Delivering 'world-class' connectivity or connectivity 'fit for 2020' does of course depend on the metrics used to define world-class. We believe that any view should be comprehensive – for instance having the best infrastructure in terms of quality and coverage would mean little if the cost for users accessing this was so prohibitively high that it resulted in low usage of that network. Rather than trying to identify and emulate countries such as South Korea or Japan we should ensure that we are serving the demand of UK users.

Government also plays a useful role in being able to convene different parts of the broadband value chain and public sector organisations to tackle particular issues. One example of this is the work that the BSG has accomplished on the Open Internet. Government played an important role in driving the issue but allowed industry to work to introduce self-regulatory Codes of Practice that has benefited both content and internet access providers and obviated the need for stricter regulation[5].

Capacity and Coverage

The BSG has conducted several pieces of research looking at the future bandwidth requirements for users in the UK. Our modelling, in line with respected forecasts such as Cisco VNI, shows that the demand for data will continue to grow across all areas – but that is not to say necessarily that peak bandwidth demand will grow in a similar fashion.

For households, video is a clear driver of demand for bandwidth. The UK market is a global leader in catch up TV: out of Europe's top five economies, it has both the broadest free-to-air catch-up viewing[6] (thanks to services like BBC iPlayer) and (with Sky Go, Netflix and ITV Player (soon to be replaced by ITV Hub)) the strongest commercial revenues – more than two-and-a half times greater than the next biggest market.[7] The availability of great UK content and the take-up of higher-speed connections have worked in a virtuous circle to the benefit of UK consumers. BSG research and modelling[8] show that the median household will require a download speed of at least 19 Mbit/s by 2023, with the top 1% of households requiring over 35 Mbit/s. These are generally lower than other forecasts which we believe can be explained by our bottom-up approach that takes into account the number of people per household (64% of which comprise one or two people) and that the improvements in compression techniques that help offset the increased bandwidth requirements of high quality video.

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[5] WIK, Review of the Open Internet Codes
[6] Ofcom, International Communications Market Report 2014
[7] Screen Digest
[8] Broadband Stakeholder Group/Rob Kenny, Domestic Demand for Bandwidth

Our similar model for small businesses[9] demonstrated that the sheer diversity in demand means there is little point in talking about an 'average small business need x bandwidth'. For illustrative purposes we found that the median small business would require a download speed above 8.1 Mbit/s in 2025 with the 95th percentile requiring over 41.1 Mbit/s.

Even this hides the diversity driven by both number of employees on a premise and the industrial sector that the business operates within – and the strain the upload requirements will place on both existing and next generation access networks. For instance a one person food manufacturers would require just 6 Mbit/s downstream in 2025, whilst a 49 person software business which will require 193 Mbit/s by 2025. Upload requirements are also an area to be considered – our study showed that by 2025 all small businesses would need access to next generation networks as upload demands exceeded those available on current ADSL lines.

Meeting this range of requirements is a challenge for both policy-makers and industry alike. It should be noted that these studies measure the basic requirements for households and businesses. End-users may demand and be supplied with more – either because they require substantially higher levels of bandwidth that the average user, for ease (ie a business entering a two contract may buy well above its current requirement to allow headroom for growth) or because the cost of buying a higher capacity or ultrafast connection is marginal.

The requirements studies should not therefore be regarded as a cap, but as a key input into determining a floor of 'required connectivity'. As in other sectors and markets there is likely to be a difference in service between rural/hard-to-reach areas and large towns and cities. The key to ensuring that the UK is a digital leader (however defined) is that everyone has access to a sufficient level of connectivity that they are able to function as a business, consumer or citizen. The most efficient way of ensuring that this is the case is allowing the market to meet this demand effectively – meaning that network deployment, be that fibre, cable, fixed wireless or mobile etc, is as easy as possible.

Recommendation: Government should continue to push the BDUK schemes bringing superfast connectivity to as many premises as possible. If market failure is still found in remaining areas then the Government should explore with industry whether further incentives could bring additional private investment into these areas before exploring direct funding or a Universal Service Obligation.

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[9] Broadband Stakeholder Group/Rob Kenny, Small Businesses' Connectivity Requirements

Even in areas which benefit from good connectivity such as central London, businesses can still struggle to secure connections thanks to the need to agree complex, costly and time consuming wayleave agreements. The City of London has been working with both telecoms operators and landlords to produce a standardised wayleave which should improve the times that businesses are forced to wait[10].

Recommendation: The Government should continue to back the standardised wayleave and if successful, should push so that it is implemented across the UK.

Meeting the demand of users who are out of buildings will also require additional sustained investment. We are only now starting to become aware of the data demands being placed on cellular and public WiFi networks – with a 64% increase over mobile networks in the last year[11]. As 4G coverage and subscriptions grow; further load will be placed on the network. This growing demand demonstrates how successful the 4G deployment has been thus far. Although we may not have been the first country we have certainly been one of the fastest in coverage and take-up terms – driven in part by our competitive mobile sector as well as regulatory pressures.

Industry must be able to upgrade their networks in order to meet this demand through the current iterations of 4G as well as looking further ahead to 5G. The UK stands to benefit from potential exports of equipment that will enable 5G, such as antennae, as well as the increased connectivity that it will bring – potentially the final step in convergence of fixed and mobile networks. Whatever form 5G takes it will undoubtedly require additional spectrum, which the Spectrum Policy Forum is well positioned to lead the debate on in the UK, and a denser network. The latter will require a more permissive planning approach than is currently the case to ensure that small cells are able to be deployed in cities far easier than they currently are.

Even with better capacity cellular networks, in extremely high-footfall areas there will need to be offload to public WiFi networks. Industry must continue to work to ensure that the interchange between the two are as seamless as possible for consumers whilst continued support should be provided for those authorities looking to make street furniture or other infrastructure available to WiFi operators.

Particular focus must be paid to transport corridors. There is the potential to boost productivity for businesses, both those commuting and those who could make better use of broadband enabled services

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[10] ISP Review, London City Streamlines Wayleave Agreements to Boost Broadband
[11] Ofcom, Connected Nations Report

when they are on the move. In addition it is essential to ensure that the route to more autonomous vehicles is clear.

Recommendation: Improvements are also needed in how land is brought into the wireless sector, with mobile operators and wholesale providers voicing concerns around land rents and access to infrastructure. Sensible reform of the Electronic Communications Code would go some way to alleviating this problem.

Quality

Bandwidth is not the sole driver of end-user's quality of experience (QoE). Indeed, based on current evidence over a certain threshold (potentially 10Mbit/s), bandwidth is not the determining factor in end-user experience. Other factors include the in-premise network including consumer devices, backhaul capacity and the interconnection between service and content providers. Ofcom are currently conducting research into both which factors affect broadband experience and critically how they can be measured[12]. The BSG fully welcomes and encourages this work. However, we must ensure that QoE can be measured objectively before attempting to encapsulate it in a public policy target.

Resilience

As all users – businesses, consumers and citizens – become more dependent on internet access or wider digital connectivity, networks will need to become more resilient.

Ofcom measures the resilience of networks as part of its Infrastructure Report. It is important that this continues to ensure that operators are able to learn lessons from each other effectively to ensure that when things do go wrong they are able to respond as quickly as possible. No network will ever be able to operate perfectly 100% of the time – networks suffer from hardware/software faults as well as cables being cut or building fires. That is why we welcome the scoring system being deployed by WiredScore in the London Connectivity Rating Scheme. This scheme reflect positively on buildings that possess multiple cable entry points and rooftop access for fixed wireless connectivity.

As well as actually being resilient it is important that digital services – be it internet access or online banking – are seen as reliable to encourage take-up. Over time it is likely that the Public Switched Telephone Network (PSTN) will be switched off and all voice services, including mobile, will be delivered as IP data packets. Industry and Ofcom need to continue to work on ensuring that access to emergency

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[12] Ofcom, Infrastructure Report 2014

services remains resilient both following this switch-off and during any transition period. However, it may be that Government is able to play a useful coordinating and support role both to drive various parts of industry to work together (potentially by setting a switch-off date) and to ensure the public of the safety of such a change.

Digital Skills

Providing access to connectivity, even as prices that are lower than many of our international competitors, is not enough to ensure that people are able to go online. The BSG welcomes the transfer of responsibility for digital inclusion from the Cabinet Office to the Digital Economy Unit. We hope that this enables closer collaboration between the inclusion/skills/network deployment work teams.

The Tinder Foundation have made clear that the economic benefits of a properly realised digital inclusion strategy far outweigh the costs. The cost of providing 100% of the adult population in the UK with Basic Online Skills has been established at £875m in a report[13] that the BSG supported. Last year they reported that the cost savings from tax receipts and NHS savings alone will mean that the investment will pay for itself[14]. We therefore support a fully comprehensive strategy that seeks to use technology to even overcome barriers such as illiteracy.

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[13] Tinder Foundation, A leading digital nation
[14] Tinder Foundation, The economic impact of digital skills and inclusion