

UK Government Digital Communications Infrastructure consultation Buckinghamshire Business First response

Buckinghamshire Business First (BBF) is the genuine voice of enterprise in Buckinghamshire, represented by a vocal and passionate membership base, which articulates the needs and priorities for local business. As a result, BBF, working closely alongside Councils, the Buckinghamshire Thames Valley Local Enterprise Partnership (Bucks TVLEP) and Government, has a strong focus on digital infrastructure, from a delivery, strategic and policy perspective.

The centrepiece to this is the Connected Counties Project, ensuring the extending rollout of fibre to over 90% of premises across Buckinghamshire and Hertfordshire, aligned to the Government's Broadband Delivery UK (BDUK) programme. In parallel, there is also a focus on a variety of complementary activity to support fixed and mobile infrastructure deployment, including engagement with suppliers, development of local policy, support through the local planning system with an emphasis on new sites and reflection of local priorities and opportunities through Central Government representation.

BBF is therefore pleased to submit this consultation response as a reflection of its interest in digital infrastructure and an endorsement of the development of a UK strategy outlining the basis from which we can compete on an increasingly globally competitive scale.

Responses to consultation questions

Note – the most relevant questions have been selected for response. Some areas are technical in nature, requiring relevant experience and expertise which is not present within BBF.

Q1.

a) Is this an appropriate role for Government?

Yes. Government must take a central role in supporting a core growth agenda, using a suite of tools at its disposal, including policy, investment, regulation aligned to the ambitions of being 'Digital by Default' and a global leader.

The forecasting elements of this exercise are very important; if the UK is to maintain its competitive advantage and accelerate its digital credentials, then it must be prepared for continued change, technological evolution and the growth of customer expectation and application. 'Always on, everywhere' will soon define this, based on evidence outlined with reports such as that published by Digital Business First.

The UK has been in need of a longer-term digital strategy for some time, taking into consideration the wealth of platforms and technology that can support the digital agenda and managing this as a strategic asset, incorporating spectrum, wireless, 4G/5G, satellite and not just fixed line broadband.

Government support for this agenda must be unerring, ready to take on the challenge of developing nations who are investing heavily in 21st Century infrastructure. Government Departments need to be better aligned to this common objective and the recognition of its economic and social contribution must span all political parties.

b) What other high level principles might the Government adopt?

The Government has a key role to play from a strategic perspective, setting the policy agenda and conditions for significant and long-term investment in digital infrastructure.

The Government must take its regulatory role seriously, in recognition of the desire to deliver ubiquitous connectivity and that it has the power to secure a genuine step change away from telephony licence requirements, towards more ambitious levels of minimum service.

The Government should also consider the importance of the UK as a home for technological development, invention and R&D, ensuring focused policy enables this to flourish. Inward investment and skills policies will be key in securing private sector investment and a commitment to the UK as a place to do business.

c) What resources do you consider the Government should aim to deploy to effectively manage its role?

A mix of capital and revenue investment will be required.

Direct investment will continue to be appropriate through State aid, particularly as remaining digitally disadvantaged areas are brought into sharp focus and where the commercial rationale becomes weaker. Equally, this should be reflected in a broader mix of investment strategies rather than a sole reliance on 'gap funding'. The permissible use of loan finance or a commercially-driven view of wholesale infrastructure ownership are options which could be explored, so as to encourage wider market participation.

The Government must ensure it has the right skillsets to influence and manage this policy agenda, with commercial, technological and regulatory expertise all being essential. Ideally, this would be centralised within the relevant Ministry or Government department, avoiding the creation of digital silos and the duplication of effort.

Q2.

What potential opportunities are there for Government to leverage its combined buying power to support policy objectives?

There may be scope for Government to consider its portfolio of strategic assets and how these can be leveraged/commercialised in order to secure greater digital connectivity. Examples of this can be seen where a wholesale infrastructure provision is deployed, following the models utilised by certain EU regional Governments, which use owned infrastructure as a way to deliver next generation broadband to the most remote communities.

The Government also needs to consider its purchasing power at a national level and the benefits that this may bring. There is a case for national attention being given to remote and rural areas (the final 5%) where even a subsidised case for investment at a local/regional level is questionable. The ability to maximise economies of scale and efficiencies when considering a solution that can be acquired on a national level would be worth exploring, particularly when considering the evolution of satellite, which by definition, offer virtual blanket coverage to the entirety of the UK.

Q4.

Is an ongoing disparity of provision of broadband services inevitable? If so should this be addressed and how might this be done most effectively?

Policy must match the aspiration – the Government has to be serious about the transformational impacts of connectivity from an economic, environmental and social perspective. The productivity and economic opportunities associated with this are clear. It cannot allow for an increasing digital divide where disadvantaged areas of the UK have little to no access to reasonable broadband speeds, meaning their connectivity is inconceivably poor when compared to countries such as Peru.

Infrastructure investment must be prioritised appropriately and we feel strongly that digital infrastructure should be at the core of any investment strategy. The benefits are well established, noted in many reports such as those published by the DCMS and Digital Business First, and the degree of political support is strong across all parties.

The UK cannot afford to be reactive in an increasingly globally competitive marketplace, with other countries increasingly emphasising investment in their digital capabilities. Given the foresight placed within the detailed scenarios in this consultation, it's essential that investments are sufficient to meet future demands and provide necessary capability to track the ever-evolving technology and application.

The development of a strategy with a 'toolbox' of Government interventions, including sufficient investment, is therefore essential. Speed targets seem to be on the low end of the spectrum when considering global ambition.

Q5.

How symmetrical will digital communications networks have to be in the future? Will this differ across user types? What implications does this have for fixed and wireless broadband provision?

As data is processed and used in more complex ways, symmetry becomes more important, rather than a focus simply on download speeds. The Cloud, Internet of Things and interplay between data and systems, supporting business and consumer activity, will lead to a greater reliance on resilient and fast connections, supported by 21st Century infrastructure.

This need for bandwidth needs to be reflected in a mobile and fixed infrastructure environment where switching between technologies to access data, systems and applications becomes less relevant to the end user, in the knowledge that interoperability is no longer an issue and the true ability to 'roam' becomes the expected norm.

Q6.

Which countries should be our benchmarks on communications infrastructure to ensure that businesses remain in the UK and continue to invest?

Whilst comparisons within a European and Western World context are important and offer some level of homogeneity in relation to the historical development of communications networks and the manner of growth, evolution and regulatory input, the UK must be drawing comparisons with the full spectrum of global peers, including those who are investing heavily in fibre optic and mobile networks.

In a global 'race' for economic competitiveness, the strength of the UK economy and its pedigree in digital infrastructure and innovation will be judged on how it benchmarks against international competitors, including those pushing the bounds of technology and digital policy, such as South Korea and in the Far East.

Given the Government sees digital infrastructure as playing a growing and more embedded role in its success as a global economic powerhouse, it must therefore reflect this in measurements which accurately and objectively reflect progress.

Q7.

What metrics do you think should or will become relevant in comparing network performance in different countries? Which metrics should most appropriately be used as the basis to set objectives for government policy?

Whilst headline metrics and rankings can sometimes be unhelpful in disguising relative performance of broadband networks, these do help to emphasise progress and the relative strengths and weaknesses of digital infrastructure, offering an insight into how policy can influence this positively and inform remedial actions.

Metrics and indicators should be used which fully reflect the spectrum of digital infrastructure quality and performance, including benchmarks that will be relevant in the future, such as latency, symmetric speeds, network resilience and the interoperability of technology, for instance.

Equally, metrics need to be genuinely comparative with those used globally, so as to ensure they are meaningful and contextual. They must also be digestible to non specialists, including Government, enterprise and consumers, ensuring that data is an accurate reflection of the real world customer/business experience. A focus on data robustness will support the growing expectation of a seamless and 'always on' connection, with the intention that this is appropriately monitored and ultimately delivered.

Q8.

It is suggested that Scenario 3 is the most likely and therefore detailed responses are provided in relation to this.

Q18.

Do you agree with this scenario or elements within it? Where do you agree/disagree? If you disagree, what alternative scenario do you envisage?

The pace of change in the last decade and continued adaptation and evolution of technology could not have been predicted, yet shows no signs of abating. As such, one would expect significant shifts in digital infrastructure in the next 10+ years, with an ever-increasing push towards mobile connectivity, as advocated by Ericsson's annual reports. Equally, the Government's role in developing policy based foresight and research, should fully consider emerging trends and the push towards a ubiquitously digitised society. After all, these are the aspirations of our global competitors.

Equally, it is acknowledged that there must be a rationale for equivalent market response. We would expect this to come from demand led growth, supported through appropriate policy,

regulatory input and an acute focus on the UK reinforcing its position and reputation for nurturing innovation and R&D in digital technologies.

There can be no denial that the prevalence of mobile devices and desire for seamless connectivity is increasing, with an expectation that being economically and socially productive should not be constrained by location, rather defined by tasks and applications. In order to deliver this mobile connectivity, a convergence of technologies will be inevitable, providing an end to end service that business and consumers don't question in terms of fixed or mobile infrastructure. As such, greater consolidation and interplay between fibre, spectrum and backhaul will be essential in order to ensure sufficient capability across the hardest to reach areas of the UK.

Q19.

What are your views on the technology commentary underpinning this scenario? To what extent might the infrastructure/technology discussed evolve irrespective of demand and how far it be a direct consequence of the level of demand?

In terms of 5G – we agree with the emergence of this and its importance as a key technology, supporting a connected society that will increasingly rely on seamless access to broadband at any given time. The technology, whilst in its infancy, is showing evidence of its capabilities and it is encouraging to hear the Government's support for this and the development of technology within the UK. In addition, Local enterprise Partnerships in the Thames Valley are seeking to support this evolution with the University of Surrey and technology partners, with a view to piloting real world 5G application from a business user perspective.

In addition, we believe that network resilience will become increasingly important as more users require greater bandwidth through new applications and the transfer of data. This will be essential – essential business and consumer experience, regardless of location, and will also have a significant role to play in providing further confidence in the security of online platforms and transactions.

Fibre penetration will need to increase to provide flexible backhaul and sufficient capacity for complementary technologies to service rural areas and those that provide the greatest barriers to commercial investment. A Convergence of technology is likely to be a reaction to demand but also to drive economies of scale that will be necessary to penetrate the most challenging locations.

Q21.

Are there wider environmental issues not reflected in the scenario e.g. the price or availability of energy that will affect any of the scenarios in what way?

Resiliency of networks and connectivity will become increasingly important, particularly during period of poor weather. Such instances appear to be more common aligned to more variable climatic patterns and conditions.

Energy consumption is also a key consideration and an increasingly scarce resource when evaluating fossil fuel resources. Key questions will focus on the ability to manage and run more complex networks requiring more capacity/bandwidth and the use of active equipment energy efficient ways. The reduction of power consumption and adaption of renewables will be pivotal to this issue.

Finally, the limitations of certain technologies in certain topographies/geographies will need to be challenged, either through advancements or substitution with new products and services. This will

be challenge the ability for a Government to deliver universal service commitment to all homes and businesses.

Q22.

How likely is any unforeseen disruption to this scenario and what area might it occur?

Disruption is always possible and may come in many forms. The Failure of technologies to develop quickly enough (such as 5G) means that growing customer expectations and associated applications may be put at risk. Aligned to this, dispersed support for technology platforms and marginalised adoption of accepted protocols also threatens the development of technology.

A lack of competitive tension in the marketplace may hinder R&D and the evolution of devices/application. Government infrastructure investment and political vision for other projects (such as transport) may also marginalise the focus on digital connectivity, particularly if political consensus is not present. Finally, large national projects such as HS2 have the potential to create huge disruption to existing and planned digital infrastructure rollouts.

Q23.

Are there factors, for example technical or unrelated to the regulatory framework, that could create bottlenecks and delay future infrastructure deployment in the UK in this timeframe, that would result in demand not being met or the UK not being seen as a leading digital nation?

A number of factors could cause such delays:

- Ineffective Government economic policy, focused on the growth of other sectors and enabling infrastructure.
- A lack of investment in Higher Education and research institutions, required to foster the skills and innovation that drives the UK's excellence in technology-related industries.
- A lack of acceptance of a truly digitised society by consumers and businesses, shunning efforts to implement new technology, processes and applications.
- Excessive emphasis on cyber security, meaning developers and technology providers are unable innovate and achieve desired market penetration.

Q24.

Do you expect commercial providers to deliver future infrastructure and meet demand on a purely commercial basis, or is some form of public intervention likely? If public intervention is likely how might that work with the commercial provision of infrastructure? What form might that intervention take?

Given the presence of market failure, forms of public intervention will be required, particularly in the most rural and isolated areas where the business case will always be incredibly challenging. This needn't be solely focused on direct State aid investment, but through a variety of policy incentives and regulatory measures, aimed at stimulating market response and interest.

The Government may also seek digital infrastructure asset ownership, enabling direct wholesale accessible passive infrastructure (akin to regions in the EU) which can act as the platform for the deployment of deeper fibre networks, whilst also providing yields for the Government through generated revenues.

Q25.

Which current or draft legislation might prevent or facilitate the emergence of any of the scenarios?

Recent legislation regarding mobile and fixed infrastructure deployment flexibility is warmly welcomed. This will encourage greater market investment and efficiencies, such as the sharing of infrastructure and is helpful in removing commercial barriers.

Defining sustainable economic development is also essential from a planning standpoint. The planning system has an opportunity to adapt and find a way to support digital connectivity and reflect 21st century infrastructure needs on new sites/developments from the outset, removing the need for retrospective State intervention.

Q26.

Do you have views on which scenario (or combination of scenarios) is most likely and should influence the development of future strategy?

As above.

Scenario 3 best matches emerging trends, rapid evolution of technology and the degree of ambition that the UK should be aiming for on behalf of its business community and citizens.

Q27.

How might efficient investment in communications infrastructure be supported, for example by changes in the regulatory framework?

Fundamentally, Ofcom has ability to further regulate open access/passive infrastructure pricing, to increase potential demand from suppliers to push their networks and technology deeper into the 'last mile'. The Passive Infrastructure Access (PIA) policy needs to be carefully managed to ensuring pricing and regulation does not adversely hinder third party interest. With greater technology convergence proposed and accepted, it would seem opportune to assess the viability of offering similar PIA access to mobile networks as part of a holistic infrastructure view.

Ofcom also has the ability to mandate technology shifts, urging a move away from a reliance on copper networks to a new breed of NGA technologies that will be essential in serving future demand and ubiquity of access. It is accepted that any such transition would need to be carefully managed so as to not stifle existing investment commitments.

Ofcom also has the ability to accelerate convergence through incentivising commercial investment and the removal of policy/legislative barriers which may allow for greater economies of scale collaborative arrangements between suppliers.

Ofcom's focus on retail level competition, where the UK currently performs well, is duly noted. Where increased retail competition can be promoted and demand for next generation connectivity stimulated, revenues generated through greater take-up will also help to secure greater infrastructure investment at the technology/wholesale level.

Q28.

Are there any further measures necessary to incentivise the rollout of future mobile infrastructure in currently underserved areas?

The strategic management of the UK's spectrum as an asset for mobile connectivity is warmly welcomed and supported by organisations such as Digital Business First and Local Enterprise Partnerships, moving away from a somewhat myopic view of fixed and mobile infrastructure being treated and managed in isolation.

We would also encourage coverage obligations to increasingly take a geographic view, rather than a sole focus on population density, given the need to ensure equality of service in the most rural and demanding of locations.

Q29.

Is there a role for a revised USO or USC to ensure that minimum consumer demand requirements are met and to reduce the potential for a new digital divide? What might this look like?

Yes, the principle of a USO/USC is a sound one, particularly if ubiquitous and equal access to digital infrastructure is a genuine policy objective. The USC, however, should be revised to better reflect the increasing appetite for bandwidth/speed, cognisant of the fact that 2Mbps is no longer reflective of the needs of consumer and business users in rural communities and so-called 'not spots'.

As such, a revised USC target of 15Mbps should be considered, mirroring the desire for a 'step change' in broadband access, which is currently being advocated by BDUK through its Superfast Extension Programme procurements.

Whilst it is noted that Ofcom, as the regulator, has the ability to enshrine this obligation in policy, it is noted that this may meet significant resistance from suppliers linked to the enforcement of commitments which could require significant commercial investment or have an adverse effect on revenue streams. It should therefore be treated with appropriate thought and delicacy.

Q30.

In terms of supporting future innovation and long-term investment in infrastructure, what areas of broadcasting regulation may have served its purpose by 2025 -2030 (or indeed earlier)? What future technical developments may also have longer term implications for regulation and wider public policy?

Any future regulation and policy must reflect the increasing trend of online access to media, TV and content on mobile devices and the desire to be connected anywhere and at all times. Strategic management of spectrum will be key to this and sensible choices made regarding licencing requirements for standard TV formats, enabling transition to a greater variety of broadcasting formats.

Q33.

In what ways can you see competition driving technological change in the UK in the future?

Competition, if nurtured by UK and EU regulation, should support technological change, with a particular emphasis on network and infrastructure convergence, enabling greater access to all aspects of existing/planned infrastructure. This may enable better penetration, the advancement of new commercial relationships and increase the degree of bundled of service/product offerings.

Q34.

How can the regulatory framework keep up to date with new business models and changes in technology?

The regulatory framework will need to match the potential for greater competition, convergence and sharing of IP/new technology, as part of a drive towards a true single European market. Imposed consolidation should not be sought, but anti competitive behaviour will need to be regulated in a manner which increasingly recognises the complexity of changing commercial relationships and technology advancement, moving away from a focus on ubiquitous voice/telephony.

Q35.

Are there any changes to legislation other than the Communications Act that would incentivise the provision of communications infrastructure?

There has to be a balance between incentivising commercial investment and maintaining a code of practice that is respectful of the planning system and regulation that protects the interests of the countryside and a wide spectrum of stakeholders.

The steps taken by Government are an excellent progression forward, facilitating more innovative and accelerated deployment of digital infrastructure. However, practicalities show the importance of wayleave access, which can be an intricate process of negotiation. A review on how best to define market values would therefore be welcomed, enabling swift deployment of infrastructure that will benefit citizens and business. This also needs to reflect the broadening technical opportunities to achieve this connectivity, either by mobile or fixed infrastructure.

We would also endorse a review of the Valuation Office Agency's approach to business rates. This needs to reflect the need for upgraded infrastructure and incentivise the deployment of technologies which offer the most future proof access to speed/bandwidth. Excessive financial penalty will have the opposite effect if not carefully managed.

Q36.

Would there be benefits to investment from a focus on broadband only services? Are there any barriers to the emergence and adoption of broadband only services, whilst still providing necessary access to emergency services?

The emergence of VoIP and an increased adaptation of the USC requirement present an opportunity to remove the incumbent's reliance on copper infrastructure, whilst also helping to dissociate the requirement for a costly telephone line alongside a separate broadband service. Some companies

are already offering broadband only products, which may help to accelerate the take up of superfast services and the associated user benefits, through lower cost. There is an inevitable barrier here as revenue streams generated from telephone lines would be adversely impacted, which would force alternative differentiation in products and services, creating inevitable resistance from suppliers.

Q37.

How might copper access networks evolve over time alongside other access technologies? Is there a role for policymakers in helping manage any transition from copper to other access networks?

There is a push from the incumbent in particular, to push the existing copper network further in terms of its capability to deliver greater speed and resilience. This is seen in the field testing and expected commercial deployment of Fibre to the Remote Node, which combined with the next incarnation of VDSL and shorter copper 'drops' can produce much higher performance, as well as other technological advancements enabling reduced copper interference, such as vectoring. However, this still relies on greater and deeper penetration of fibre optics to the end user, with a logical position being the eventual extension fibre to the premises or using alternative complementary technologies to replace the copper 'drop'.

Policymakers clearly have a role in supporting the transition away from copper, as part of a focus on realising the UK's ambitions to match the network investment and performance of global peers. This may come in the form of incentivising investment in fibre and replacement technologies, through the removal of commercial barriers and also encouraging greater competitive access to passive network infrastructure. The establishment of a revised USC would also facilitate a more immediate strategic debate regarding how well a hybrid copper network could continue to support ubiquitous access to higher download/upload speeds.

Q38.

Views are sought on whether there are any additional actions the Government should consider to ensure:

a. That the provision of all areas of the UK's digital communications infrastructure remains competitive in order to ensure that the UK can take full advantage of growth opportunities in the Digital Age;

Fundamentally, the Government must ensure that digital infrastructure is embedded into the heart of its economic growth policy, with sufficient capital investment apportioned to reflect its importance to the national prosperity. In parallel, policy and regulatory frameworks must continue to support a thriving a competitive marketplace, enabling sufficient private sector investment.

b. Aside from legislation and adapting the regulatory framework in the broad sense which other actions should the Government take to encourage investment in communications infrastructure?

The UK is a hot bed of creativity and innovation, stimulating the development and application of digital technologies. It is important that the Government is fully cognisant of this, maintaining a business and educational environment that harbours R&D investment and the skills that will maintain the UK's position as a hub for digital infrastructure.

c. That potential investment in the provision of digital communications infrastructure offers a suitable risk and reward profile to ensure that they can be financed by the private sector.

The Government has a role to play in creating a stable regulatory and political environment from which commercial investments can be made in digital infrastructure. This will install greater market confidence, within a regulatory framework that does not stand still, but adapts appropriately. Equally, the Government requires the necessary technical expertise to understand emerging technologies and their role in evolving digital networks, ensuring the UK has an opportunity to secure a first mover advantage.

Q39.

Views are sought on:

a. The case for the UK to invest to gain 'early mover advantage';

The case is clear. The UK is competing in a global race which requires an aggressive investment policy in digital infrastructure to ensure it maintains a leading position amongst its rivals. This is no longer true of just Western Europe, but of the Far East and other developing nations, where there is a very strong focus on reaping the economic benefits of a truly digitised society.

b. What areas in particular the UK should aim to see investment;

The bullet points outlined in paragraph 5.30 provide a succinct summary of the areas where the UK should aim to focus investment.

c. Are there any actions not covered elsewhere in this report that the government should consider to ensure digital communications infrastructure is in place before it is needed and such that it helps generate need.

The Government should carefully consider its own strategy for the application of digital infrastructure, incorporating the evolution of public services delivery through agencies such as Local Government and the NHS. A well developed strategic plan for maximising the benefits of this may provide further incentive to invest ahead of demand, given the ability to shape the need for online products, services and information at a national societal level.

Q41.

In which future communications technologies do you consider the UK has, or could achieve, an international leadership position?

The UK has the potential to be a global leader in fixed and wireless technologies, on the foundation of suitable policy, regulatory and investment frameworks being in place to support such aspirations. It is accepted that the presence of incumbent copper networks may act as a barrier to a step change and that spectrum must be managed effectively to enable mobile connectivity to maintain maximum coverage.

Q42.***What more might government and industry do to exploit future technologies, associated new applications and emerging business models?***

There is a question for Government in its acceptance of finance models, outside of the current 'gap funding' proposition. Government and industry must have a platform from which to effectively engage, discuss emerging technologies, laying the groundwork for effective policy and regulation. Equally, other forms of investment and asset ownership may be explored, which could also be advocated to local administrations who continue to play a role in broadband network procurement. This may allow greater market competition to emerge at a wholesale level.

Q43.***What role might local bodies have in facilitating the future delivery of digital communications infrastructure?***

Local bodies will continue to play a role in facilitating the future delivery of digital infrastructure through:

- Direct capital and revenue investment in broadband programmes, aimed at extending the reach of open access next generation infrastructure. This includes a collaborative dialogue with neighbouring counties/administrations, identifying common needs and the potential for economies of scale and greater purchasing power.
- Establishing the demand and local needs of business and consumers through engagement and demand stimulation, affirming the commercial case for investment. This must feed through to Government strategy, via consultation and political representation.
- Developing corporate policies that promote the application of digital infrastructure for the purposes of transformation, service delivery and workforce efficiency.
- Establishing a relationship with fixed and mobile providers to assess opportunities for collaboration, enabling greater commercial investment in infrastructure. This may include access to public sector assets and the removal of potential cost barriers.
- Via the planning system, developing a supportive commitment to digital infrastructure. In addition, connectivity requirements may be embedded within local policy affecting new residential and commercial sites and more general infrastructure projects, ensuring the best quality digital infrastructure is available from the outset.
- A consideration as to whether new Council assets (such as enabling infrastructure in the **form of ducts**) may expedite digital infrastructure investment and also generate potential revenue streams.

Q44.***How can council's maximise the digital communications infrastructure in their local area to support their work on economic regeneration?***

Through the role and actions identified in Q43.