

# Strategies for accelerating Next Generation Broadband in your region



## An industry perspective

This briefing explains what local and regional bodies need to consider if they want to bring faster speed broadband to their area. It summarises alternative approaches and sets out the questions to help assess the options to achieve the desired regional outcomes and benefits.

### The importance of broadband

Broadband has now been with us in the UK for more than ten years and current generation broadband is available to 99% of UK households. Today, virtually every business, every learner and many citizens rely on broadband for productivity, inclusion and access to a universe of services most of us had not even imagined just ten years ago. However across the world the focus is now on next generation broadband and the step-change in the way we work, learn and live that this will enable. Governments right across the world see wide scale availability of next generation broadband as a key priority and as being fundamental to the competitiveness of their economies.

In the UK the Government has taken the view that the market will deliver next generation deployment to around 60% of the country. As part of the Digital Britain initiative the Government has proposed setting up a levy on fixed line telephones to create a fund to help address the issue of providing next generation broadband to the 'final third'. The Government's view is that the levy based deployment and the market led deployment will together make available next generation broadband to 90% of the UK.

Many regional authorities around the UK are looking at intervening in next generation broadband availability at a local level in advance of any centrally-driven initiative to accelerate coverage in their region and to ensure the future prosperity of their community.

### Where in the market to intervene?

Broadband networks are comprised of a number of 'layers' in their value chain. Different projects have looked at approaching intervention by targeting different layers:

#### ▪ Infrastructure layer intervention

The majority of the cost of next generation broadband deployment is in the underlying infrastructure – the fibre optic cables and the street 'ducting' they sit in. Projects have

therefore looked at building new duct and/or laying optical fibre and then renting this to operators to enable them to offer services.

This approach is driven by a belief that addressing the greatest capital challenge will fix the 'market failure' for next generation broadband. However, there is a risk that disconnecting the deployment of infrastructure from those offering service can result in a sub-optimal deployment where the infrastructure maps poorly to emerging demand. There is also no guarantee that a substantial investment in infrastructure will be exploited by service operators risking the creation an expensive 'white elephant'.

#### ▪ Wholesale & infrastructure layer intervention

Intervention at the wholesale layer looks for an operator who will build and operate a network of duct and fibre, and who will also add the necessary electronics and business processes to offer ready-made wholesale services. These services are then consumed and branded to sell to end user customers by independent service providers.

This approach reduces the risk of unused infrastructure by making it easier for services to be developed by service providers and builds the foundation of a fully functioning market. However, there is evidence that small networks – covering perhaps just one city or region – may not offer access to sufficient customers to enable the end user service providers to justify the significant investment they need to make in systems and processes to be able to offer services. In the UK in particular, the highly price-competitive broadband market drives service providers to seek out opportunities where they can see economies of scale, developing systems and processes once and in return being able to reach many millions of potential customers on that same network.

This approach might therefore only attract a very small number of service providers resulting in a lack of price competition (and so hampering affordability) and a lack evolution and innovation in the services offered to end users. And if no service providers are attracted at all then no one will benefit from the intervention. There is therefore still significant risk in this approach.

#### ▪ Retail, wholesale & infrastructure layer intervention

“Choosing how and where to intervene in the market is critical to ensure the private sector is encouraged to invest and the most sustainable outcomes are achieved for our citizens and businesses”

Nigel Ashcroft  
Director of NGA for Cornwall  
Cornwall Council

In this model, intervention includes ensuring that participation from a range of competing retail service providers will be delivered to complement the investment in wholesale and infrastructure layers. Under current state aid rules, this approach (like the previous ones) will also need to offer a wholesale element to allow other service providers to offer services and the intervention must not subsidise the retail element of the project.

Although probably the most complex approach, this combines the positive elements of infrastructure and wholesale intervention by addressing the most expensive elements, while ensuring end user services are made available, thereby guaranteeing a minimum level of benefit. Through the wholesale element the foundation of a competing eco system of service providers is established to ensure price competition (and so affordability) and ongoing innovation, thereby giving the greatest assurance of long term commercial sustainability.

The key point to note here is that service providers will want to reuse as far as possible their existing systems and processes to serve end users and interact with their suppliers. They will not want to develop new systems and processes for every potential development that comes along as this can be prohibitively expensive.

#### Models for intervention

Having looked at where to intervene, the second key issue is the model for affecting this intervention. Five broad approaches have been observed – the first three focus on 'supply side' approaches and the others on the 'demand side':

- *Pure public sector*

In this model the public sector effectively creates its own network operating company to build infrastructure and offer service. This approach offers the greatest control to the regional authority but also attracts the highest risk and can stretch the organisational capacity of the parent authority. Longer term, examples in Europe have demonstrated that it is difficult to generate the economies of scale that ensure ongoing service evolution, investment and commercial sustainability comparable with the other models available.

This model also requires the public authority to take all the risk and is further complicated by the need to raise public investment capital and service this debt. This can result in similar barriers to investment in unattractive geographies or disadvantaged communities seen with the private sector.

- *Public-private joint venture*

In this model the public sector forms a joint venture company, or a formal public-private partnership with a private sector company, selected through open competition. Together they fund the formation of the new network, with the private sector partner bringing the necessary technical expertise. This approach brings shared risk and a reduced investment required from the regional authority but with less control and more complexity.

This type of approach tends to be unattractive to existing operators who dislike the departure from well honed standard business processes

and the complexity arising from needing to share revenues and ownership of assets with the public authority. They also dislike the need to give up a degree of control over their business direction and over their ability to mitigate their business risk.

Instead, the approach tends to attract new operators looking to build a market presence, especially equipment manufacturers who are able to use network equipment (at minimal marginal cost of production) as their matched investment. New operators bring significant risk that they will not attract the all important ecosystem of service providers, resulting in failure to gain a foothold in the market with significant negative consequences for a regional broadband initiative.

- *Gap funded investor model*

In this model the regional agency runs a competition for a private sector investor and asks them to identify the 'investment gap' in their business case for deployment in that region and for a committed business plan for deployment.

This approach gives the greatest scope to the private sector to be innovative, agile and develop the optimal solution. It is also attractive to existing operators who already have economy of scale and a community of service providers already able to work with their network. In this way it can provide a potentially lower risk profile and can score well in terms of a value assessment and ongoing commercial sustainability. However, this approach requires careful contract management by the regional authority.

- *Public sector anchor tenant model*

In this model the public sector brings its significant purchasing power into the equation. By committing to place its networking needs, for example connections into council buildings and schools, within the new initiative, the new operator is able to de-risk their assessment of potential future revenues and reduce the investment risk premium they perceive.

This approach intelligently leverages existing procurement and is low cost. However, in the case of a new networking venture, there is a risk of service quality issues from a new network affecting the authority's operations that needs to be considered. Note that this approach can be used in conjunction with all the other approaches listed above/below.

- *Demand stimulation model*

In this model the authority focuses its resources on driving take up for the new network by encouraging its businesses, citizens and its own services to utilise the next generation broadband infrastructure. Higher take-up of the new network reduces the risk for all parties by improving the commercial sustainability and seeing the benefits reaching more citizens and businesses.

The approach can be low cost by using the influence of the authority with other local stakeholders – such as chambers of commerce, Business Links, authority employees, through schools and local community groups. This approach can be used in conjunction with all the other approaches listed here.

## Factors to consider

Having looked at the broad models for intervening, there are a number of important factors to consider when thinking about potential partners and approaches. The following sections set out some of the key topics:

- **Commercial sustainability**  
Building a next generation network can seem like an exciting venture. But how will this look in 5 years or 10 years time when continued investment and management activity will be required to ensure the network keeps up with the rest of the world? Will the same people be there to drive this when the initial excitement inevitably dies away? Or will the network gradually become a distraction from the authority's 'core business'?
- **A real competitive platform with committed service providers**  
How will the new network be sure to attract enough service providers from the start to ensure services remain price competitive and continue to evolve and innovate?
- **Committed investment**  
How much money is a potential partner guaranteeing to invest irrespective of how well the project goes?
- **Demand generation & take-up**  
Is there a plan for ensuring that take-up of the new network – by businesses, citizens and the public sector – is maximised. It is only through adoption that the benefits of the network will be seen.
- **Resources to build, resources to support**  
What resources does the partner have for building the new network and can they ensure their design minimises ongoing costs and copes with ever increasing bandwidth demand? In the long term the biggest cost for a network operator is keeping the infrastructure running to a high standard. Experience of designing for low maintenance costs will be key. And as your economy becomes more dependent on the new network, what are the resources available to fix problems – including disasters – as quickly as possible?
- **Economies of scale**  
What economies of scale is the partner bringing to the project? Very few communications operations work efficiently on a small scale as it is the customer revenues that need to pay for every new development. What impact will this scale have on commercial sustainability and risk of commercial failure?
- **State aid**  
How will state aid rules be addressed? Does your partner understand these and now how to work with them?
- **Coverage – across attractive and less attractive areas**  
What coverage will the new network offer? Urban areas and business parks offer attractive coverage for network operators. Conversely, rural areas and disadvantage areas are much less attractive. How will you ensure your partner does not cherry pick just the most attractive areas? It is tempting to structure the geography into different parcels but beware that this can be counterproductive by preventing some optimal solutions.
- **Network performance and future proofing**  
Much of the discussion on next generation broadband talks about high speeds – perhaps 100Mbps (around 10-12 x faster than today's broadband). But the requirements are more subtle than this:
  - ❖ **Future proofing & optical fibre technology**  
How upgradable is the underlying technology? Networks based on optical fibre to the end user offer the greatest future proofing as they can be upgraded over time as electronics and user needs increase. But how much thought has the potential partner put into this and what sort of upgrades have they planned for in the long term?
  - ❖ **Symmetry**  
How fast can information be uploaded as well as downloaded? Often uploading is much slower than the download speed but upload speed is important in services like video conferencing or for businesses services.
  - ❖ **Latency**  
This is the 'delay' in the network – how long it takes for data to pass through it. This can be crucial for some applications.
  - ❖ **Reliability**  
How reliable will the network be? If businesses are starting to build mission critical, knowledge based operations on top of your network they need to be confident it will be reliable and that it will be fixed quickly if there are problems.
  - ❖ **Network features**  
How clever will the network be? For example, can important traffic, such as a video conferencing, be prioritised over less time critical information like an email – a function called 'Quality of Service'. These sorts of network features will be important to a new generation of service.
- **Prices & affordability**  
What will end user be charged to connect to the service and subsequently each month, and will it be affordable? How will prices change over time? If the new network has a 'local monopoly' over offering next generation broadband services there is a risk that a partner could exploit this opportunity to charge unnecessarily high prices or just not be driven to operate efficiently or to continue to innovate.
- **Customer experience**  
What will the experience of the end customer be like? This includes marketing, ordering, installation and ongoing support. Any problems here will reflect badly on the public authority.
- **What if things don't go according to plan**  
What happens to the plan if something changes? Is the partnership built on making the project a success? Is there trust, commitment and a good working relationship on both sides that will see the project through any unforeseen challenges?
- **Environment, equality and diversity**  
What impact will the new network have – both directly and indirectly - on environment, equal opportunities and diversity? The investment

“At a time of economic slowdown when private sector companies are scaling down their investments, this multi-million pound injection in our infrastructure has the potential to indirectly create up to 1,000 additional jobs per annum”

Arlene Foster  
Enterprise Minister  
Northern Ireland Dept for  
Enterprise Trade and  
Investment commenting on  
the regional broadband  
programme with BT

can play a significant roll in all these agendas if carefully constructed.

▪ *Flexibility*

How can flexibility be built into the project? If the requirements are too prescriptive then some opportunities for an optimal approach can be missed and the partner will see their ability to manage risk being hampered. Focusing on outcomes may be a better approach.

▪ *Talk to lots of potential partners*

Its wise to talk to as many different potential partners as possible to gauge what will attract them as a partner and potential investor and what they might bring to the project. Challenge them on what attracts them, what concerns them and how they would approach some of the issues raised here. Structuring a project that is attractive to the private sector will get the best from them.

▪ *Don't be afraid of profits*

This may sound obvious, but expect the private sector to want to make a profit. Without this they will not invest as they have shareholders and investors to satisfy. Remember also, that a profitable network will increase its commercial viability and so, in turn, its long term sustainability. Good returns will also encourage the private sector to continue to invest in your region.

▪ *Collaborate with other regions / sub regions*

Consideration should also be given to the scale of plans. The private sector can incur significant costs engaging with a selection process and this can be difficult to justify if the eventual project is small. Joining together a number of initiatives across a region or sub-region or even across more than one region can be an effective way to get maximum interest from potential investors.

## How to engage with the private sector

One of the greatest difficulties for the private sector is to understand the structure of local authority service provision. From the outside, there appear to be many organisations and agencies, and it is not always clear who to engage with or how to encourage consensus. This can be confusing and frustrating for potential investors.

Regions that have developed a specific group to develop their strategies and plans around next generation broadband, obtaining buy-in across the local stakeholders and agencies, have been best able to engage with potential investors, develop well thought through initiatives, and drive forward effective action. It is also important to include stakeholders from the business community and third sector who are able to reflect the specific needs of these communities.

Integrating these plans with the public sector's own drive for efficiency in its operations will not only generate saving and productivity gains, but will also set a good example to business.

## Engaging advisers

Potential private sector investors will be keen to help authorities develop plans and shape their vision. However, the broadband industry is a complex one, with many subtleties and nuances not least around the technology and market structure, and there are many perspectives.

It will therefore be important to obtain professional and independent assistance from consultants and legal advisers to develop plans and ensure any selection processes is open, fair and robust. But it is also important to select consultants with relatively deep industry knowledge in order to make sense of complex proposals and evaluate both the suitability of potential partners and the commercial viability and sustainability of their proposals.

## About BT and Super Fast Broadband

BT operates in a highly competitive broadband market where consumers have an extensive choice of services with some of the lowest prices in the world. Over 600 service providers offer service through BT Openreach infrastructure or BT Wholesale services. Our unique 'competition-ready' platforms, allow all service providers in the UK to access our new fibre technology through their existing systems and processes. We also bring our own services to the market at the retail level through BT Retail and Global Services.

Broadband has boosted the UK economy in recent years, becoming an essential part of our customers' lives. In 2008 BT announced that it would invest £1.5bn to make next generation fibre-based broadband - super-fast broadband - available to 40% of the UK, some 10m homes and businesses, by summer 2012. Our fibre to the premise and fibre to the cabinet solutions are already in use in the UK and this allows us to be highly confident of both the performance levels and deployment commitments. The first 162 exchanges have been announced, with fibre-based service available to 2.5m homes and businesses by late summer 2010.

BT has also been selected as preferred partner to work with Northern Ireland's Department of Enterprise Trade and Investment on a £48m regional next generation broadband programme. We are also in discussion with a number of UK regional authorities on their next generation broadband plans.

For further information contact your local BT Regional Manager - for contact details see:

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