



**Broadband deployment and sharing other utilities'  
infrastructure**

**Department for Business, Innovation and Skills**

**Consultation document**

response from BT

17 September 2010

## Executive Summary

BT recognises the importance for the Government to consider all options that may help to ensure that remote areas of the UK get broadband coverage and usable broadband speeds, including providing access to other utilities' infrastructure. Broadband is increasingly identified by customers, small businesses and communities across the UK as a vital enabler of economic growth, community connection and societal health.

The assessment of this option should examine the opportunities and risks including any impact on the very large private sector investments currently underway or planned in the UK by BT, Virgin Media, South Yorkshire Digital Region and others.

We believe that in addition to established mechanisms for sharing of non telecommunications infrastructure (for example our own pole-sharing arrangements with electricity companies), there is a case for extending this approach to general utility infrastructure by legislation to ensure it is available if required.

Providing access to physical infrastructure is not sufficient to stimulate investment and innovation. We strongly believe in the concept of 'open access' i.e. wholesale access on a non-discriminatory basis. This ensures that consumers and businesses are always able to access a choice of downstream providers with competition driving lower prices and innovation and encouraging take-up. The economics of 'passive' access to physical infrastructure are such that there is a strong likelihood that operators will use this access to foreclose competition and create vertically-integrated monopolies. We, therefore, believe that Government should seek to ensure that where companies provide a service using access to other utilities' infrastructure, they should also have to wholesale resulting products in a way that allows other providers to offer service and therefore supports competition.

Although this consultation considers access to other (non telecommunications) utility physical infrastructure, we believe that access to other telecommunications assets in a similar manner to that offered by BT is more likely to help the cost-effective deployment of broadband and broaden consumer choice. Government, therefore, should take the opportunity afforded by the transposition of the revised EU Directives into UK legislation in early 2011 to mandate infrastructure sharing on all communications providers and owners of telecommunications physical infrastructure to ensure equivalent access. Above all the UK needs a well-structured, professional approach to infrastructure sharing in which responsibilities are clearly set out and understood by all parties involved. In addition, this response proposes other potential Government interventions which would improve rural access to broadband.

## Introduction

Given that this discussion paper looks at the benefits and problems associated with sharing other non-telecommunications utilities infrastructure, the questions do not directly relate to BT/Openreach. We have, however, given general views in response to these questions where appropriate. Similarly our answers to the remaining questions are on the basis that we are considering access to non telecommunications infrastructure as proposed in the paper.

## Consultation Questions:

1. *Do you agree that the ability to share other utilities infrastructure would reduce the costs of rolling out superfast broadband and facilitate investment?*

We agree that there is potential to reduce the cost of rolling out superfast broadband if existing civil infrastructure can be opened up in a suitable way, but we do not believe that it is a “silver bullet” for lowering the costs of infrastructure deployment that will speed or extend the rollout of superfast broadband due to the range of other costs and issues that need to be addressed.

There are already examples where commercial arrangements are in place which achieve infrastructure sharing. Therefore, extending legislation/regulation to include other infrastructure may result in additional cost saving options, particularly in difficult to reach areas for superfast broadband. However, we believe it is important to ensure that they do not:

- Undermine already committed and planned investment – e.g.. through unfair terms or pricing, or removing the incentive to invest
- Stimulate CPs to focus on substituting business/leased lines circuits
- Solely concentrate on areas already well served with current generation broadband or fibre infrastructure (e.g.. metropolitan areas).

It is, therefore, key for the Government to focus on the relevant policy objectives and how those can be supported by measures imposed. Potentially these could include coverage targets, homes passed, minimum contract periods etc. for those utilising scarce assets in the long term.

There are many examples of the operational and commercial challenges which can be cited from the recent past; namely the experience of the cable television industry over the past 15 years, Energis or the challenges faced currently by the South Yorkshire Digital Region project.

Infrastructure access is not the only cost issue facing service providers wishing to deploy fibre. There are many other aspects to deployment which are complex and costly to implement both in start-up and on an ongoing basis;-

- customer facing and network management systems
- maintenance processes
- the development of open access wholesale products
- the costs and the processes associated with customer switching.

To make investment in infrastructure commercially viable the infrastructure provider requires an efficient operational model that can utilise the infrastructure, often requiring scale economies to support its investment and that of its customers.

Duct access may, therefore, make a difference at the margin in some localities but it is a complex matter. For example, whilst studies such as those by Analysys Mason for the BSG<sup>1</sup>

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<sup>1</sup> Analysys Mason (2008) The costs of deploying fibre-based next generation broadband infrastructure BIS – Broadband deployment and sharing other utilities’ infrastructure

confirm that the costs of civils infrastructure are relatively high for new build fibre, the additional costs of integrating new/non standard infrastructure into an infrastructure suppliers' systems and processes from a range of suppliers are also significant. Additionally the existing duct does not necessarily have space available for sharing; Ofcom estimates 22% of BT ducts are already full and not everywhere in the UK has ducts – some phone lines are laid through bare earth, meaning that it would be necessary to provide new duct for any fibre provision irrespective of the fibre owner, further increasing the common costs that need to be shared between the accessible users. The financial case for multiple fibre installation and the ability of duct sharing to mitigate them are, therefore, not generally clear-cut.

BT has already offered access to its ducts in order to maximise the opportunity for cost savings to all and expects others in the sector to offer reciprocal rights of access. It is our belief that changes in European regulation will force this issue and we hope Ofcom will support this. We are also heartened that this consultation is looking at the potential opportunities to extend this approach beyond the telecoms sector to general utilities.

2. *We think that encouraging infrastructure sharing might help companies extend the reach of their networks further into harder to reach rural and remote areas. What infrastructures would be most useful in achieving this objective? How much difference do you think that more infrastructure sharing would make to the ability to reach these areas?*

There are a limited number of infrastructure networks suitable for infrastructure sharing and these options become even more limited as the requirement is pushed further into harder to reach areas. Factors that make use of the various networks identified in the discussion document problematic include:-

- The availability of utility infrastructure in remote or rural areas (often there are no sewer networks, for example, in remote areas).
- The proximity of the networks that do exist to both BT's infrastructure and the customer premise. A large cost in Fibre To The Home NGA deployments is in the "last drop" to the customer premise, and useable alternative infrastructure is often not available in this section of the network in rural areas.
- Breaking out of the existing network at a suitable point for connection of the "final drop".

As a result of these issues we believe arrangements with electricity distribution companies for the joint use of poles is likely to be the most useful alternative infrastructure in achieving this objective. Although we have already agreed commercial agreements for this infrastructure, legislating for access to this infrastructure could provide possibilities for fibre deployment that enable new commercial models or new ways of working to come to the market. Possible additional interventions which may help us to achieve further coverage are most likely to be based on opening up access to alternative telecoms network infrastructure such as Virgin Media's duct (and potentially its poles); as we have already identified in the early stages of our FTTP deployment areas where Virgin may have available duct and Openreach has limited or no availability.

Therefore in general, based on our experience we do not see great benefits of opening up utility infrastructure beyond the existing commercial arrangements that are already available, particularly in rural areas where alternative infrastructure is often unavailable, but would not wish to rule it out, nor to adversely affect the choice of other CPs in this matter.

*How much difference do you think that more infrastructure sharing would make to the ability to reach these areas?*

The 16% cost savings figure attributed to the use of alternative infrastructure in the Analysys Mason report on the costs of NGA deployment is a “national” estimate that is based on the use (we understand) of both Virgin and Utility duct where available<sup>2</sup>. As such this is likely to be a maximum saving. However, the report also concludes that:

*“the percentage cost saving is greatest in urban areas and lowest in the rural areas”*  
(Section 1.2.3).

There is no specific figure for what saving may be available in rural areas, where there will typically be no Virgin Media duct, and in many cases no alternative infrastructure available in the vicinity (sewers etc.). However, our estimate is this would at least halve the availability of alternative infrastructure and in many rural areas completely remove any possible savings. It is also important to recognise that the Analysys Mason study considers both the reuse of existing utility infrastructure and the potential of new aerial infrastructure (fibre on new poles), and it is important not to confuse the savings potential of each scenario. This latter approach of deploying overhead fibre on new pole infrastructure has a number of practical difficulties but may be useful in ensuring that very hard to reach areas, or areas where other duct assets are congested, can be addressed.

So whilst there is potential for the use of other utilities infrastructure to reduce deployment costs in rural areas as identified by Analysys Mason and others, the scale of these cost reductions is not likely to be as high as the 16% figure. This is a national figure and rural areas are likely to be less able to use these assets. These savings are also likely to be reduced further, and potentially eliminated altogether, by the additional costs associated with integrating these assets into the existing product set and systems etc. as identified above. It is also worth bearing in mind that the Analysys Mason study only considered capital costs and so any charges to use these shared assets would need to be considered.

### 3. *What do you see as the main barriers to infrastructure sharing?*

We believe that anyone seeking to utilise infrastructure sharing and integrate it into their existing network will inevitably incur new costs as well as potentially lose operational control unless changes to systems and processes were introduced. The additional costs would need to be offset by any savings through infrastructure sharing. Recent studies, particularly by Analysys Mason for Ofcom<sup>3</sup> into Openreach duct, have highlighted a range of such operational issues and success factors involved in utilising underground duct networks and overhead poles; and hence deployment based on the use of such infrastructure would need to address these.

It is often these issues which are hidden from the CPs seeking access as they are dealt with on a day to day basis by the infrastructure provider who wishes to install, upgrade or expand its own infrastructure network. These issues then only become pertinent for communications providers when they are considering infrastructure access in order to deploy their own fibre network.

Typical operational issues encountered by Openreach and associated with gaining access to underground infrastructure include:

- access restrictions in traffic-sensitive areas
- special event restrictions placed by local authorities
- health and safety issues (sewage and residual gas)

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<sup>2</sup> Analysys Mason (2008) The costs of deploying fibre-based next generation broadband infrastructure

<sup>3</sup> Analysys Mason - Operational models for shared duct access (April 1st 2010)

- accuracy of infrastructure drawings
- chambers located in dense pedestrian areas
- high cable density in chambers (especially in aggregation points in the duct network)
- small chambers entirely filled with earth due to the rain washing the soil into the chambers - requiring physical excavation to even survey the asset.

These issues affect a significant proportion of duct assets as shown by the recent Ofcom study.

Typical operational issues associated with utilising overhead pole infrastructure include:

- trees obstructing poles
- access to the pole itself
- fragile roofs
- nearby overhead power lines.
- lower parts of poles being subject to vandalism.

These factors are further compounded by the issue of scale economies both locally and nationally. For example, new entrants into the market with relatively small market shares in an area, or those who are serving less densely located entities such as businesses, are likely to find infrastructure sharing less economic as they will not have the number of customers in any location to support the necessary investment in equipment to make this a viable proposition. As a result it will be vital to ensure that other means of access to the infrastructure are maintained to enable continued market entry i.e. duct sharing may be necessary but it is not sufficient for continued competition.

None of the above issues rule out the use of shared infrastructure, as indeed is highlighted by Openreach's existing commercial agreement to use electricity poles. These issues can be and are overcome where it makes economic sense to do so, but cost savings through sharing infrastructure need to take them into account and are thus not automatic.

4. *What benefits are there for utility infrastructure owners in making their infrastructure available for sharing?*

BT has already agreed with Ofcom that we are willing to open up our duct and pole networks for CPs who wish to deploy fibre and so no specific benefits are being sought by BT. For other utility operators, we presume they would be looking to improve ROCE through extending the use of their existing assets into other markets. Potential new revenue streams from enabling access to their infrastructure would therefore need to ensure that the achievable rate of return on this activity and the additional costs involved in enabling infrastructure sharing products to be deployed and maintained were sufficient to justify the investment, compared with other potential uses for their capital.

5. *What additional incentives would infrastructure owners like to see in place to encourage more sharing?*

We would expect a utility infrastructure owner to be concerned that they would be able to protect any commercial returns they received from making their infrastructure available and ensure that these additional returns did not impact their existing regulated returns.

Additionally there are other areas where the Government may be able to assist in the deployment of fibre infrastructure that utilises existing infrastructure by ensuring coordination

of local government and planning decisions. We have attached as Annex 1 to this response a more detailed view on these areas.

6. *What government action would be most likely to ensure the quickest and most effective deployment of broadband through infrastructure sharing? Is legislation likely to be required or would industry co-operation be quicker and more effective?*

Experience shows that infrastructure sharing through commercial arrangements or based on industry co-operation is more likely to be delivered quickly than a legislated solution. However, our experience from the telecoms industry also shows that other providers are generally unwilling to open up their infrastructure or will only open up wholesale services on bespoke commercial terms where it is advantageous for them to do so, rather than equivalent wholesale services in the way that BT is prepared to do. As a result legislation is probably required, at the very least as a back-stop and an incentive to parties to reach commercial agreement.

If legislation is needed it is important that any such access obligations are properly implemented and policed and it would need to be clear which regulator was responsible for implementing and enforcing any such regulation. Given that access here is required in order to provide telecoms services, this would suggest a role for Ofcom. However, other issues covered in the consultation (such as the impact on utilities' price control regimes) do relate to the existing utility regulators, so there may be a need to consider concurrent powers for regulators in this area.

## **Annex 1 – Potential areas for Government support and co-ordination to support NGA rollout**

The Government could help speed up the delivery of BT's superfast broadband to the two thirds of the UK within the scope of our plans and improve the business case for the 'Final Third' in a number of ways. Most involve support for better collaboration between local authorities and other organisations to help bring superfast broadband to communities across the UK. There is also a suggestion regarding fibre and capital allowances.

### **1. Powering superfast cabinets**

- Unlike standard street cabinets, superfast broadband cabinets need a power supply. We rely on seven different power companies to ensure these power supplies are installed.
- Often this works well, but in some areas the power companies are not installing the power supplies fast enough or are charging excessively for the work.
- The Government should strongly encourage Ofgem to support national standards for providing power supplies, to require power companies to commit to superior standard supply terms, and to help us develop new ways of working with them, for example by 'renting' their engineers.

### **2. Prioritisation of critical infrastructure in street works**

- Fibre roll-out, particularly fibre to the premises, is heavily dependent on street works. The Traffic Management Act allows local authorities to move to a new way of managing utility companies' work on the public highway: instead of notifying plans to carry out street works, a utility company books time on the highway through a permit, for which it pays a fee.
- Permit schemes could significantly increase our roll-out costs through the complexities of the process as well as charges for permits.
- Ministers should issue guidance encouraging authorities to require permits for works on major routes only; and exempt work to install new infrastructure such as superfast broadband.

### **3. Deployment-friendly planning regimes**

- Openreach does not normally need planning permission to install a new cabinet. However, permission is required in national parks, conservation areas and other areas of special interest.
- Local planning regimes have stymied our deployment in some cases because of lack of consistency across authorities and between senior officers and planning teams within individual authorities. We've also encountered a lack of transparency in decision making.
- The Government should help by issuing supportive guidance from the Department of Communities and Local Government; ensure that Planning Policy Guidance Documents reinforce support for superfast broadband investment; and stress Government's support for investment in communications infrastructure, for example through the "Planning Portal".

### **4. Micro-trenching**

- Where there is no access to existing duct, "micro-trenching" can be an effective alternative. Some local authorities and highways authorities are currently opposed to this technique. Openreach and industry are working with authorities to develop a model that all can support. The Government should encourage this process and to issue guidance to authorities.

### **5. Fostering collaboration between communications providers on duct access**

- Other providers should be encouraged to share their passive infrastructure, just as BT has offered open access to its ducts and poles.

## **6. Setting connectivity standards for the superfast broadband-enabled home**

- Common standards for connectivity in the home environment will make it easier for developers to pre-provide superfast broadband and for consumers to use new high bandwidth services. The Government should support and encourage industry initiatives such as the Intellect-led 'Connected Homes' project.

## **7. Capital allowances**

Whilst we understand the reasons for the recent decisions around capital allowances, it does have an impact on the economics for NGA deployment. The Government should consider excluding expenditure on fibre.