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BT White Paper  
January 2011

# Accelerating Next Generation Access roll-out



## **Abstract**

This paper explains the advantages of next generation internet access for regional agencies, devolved governments, local authorities, business and community organisations, and presents an outline of how roll-out of the technology might be achieved successfully in partnership with BT. It argues that deployment of fast internet access provides economic and social benefits for citizens and businesses, is willed politically at national and international levels, and feasible through proactive partnerships with appropriate network operators.

## Contents

“The question is not ‘why broadband?’ The question is rather who will rise to the challenge for social and economic transformation offered?”

ITU & Unesco Broadband Commission report (1)

|   |         |
|---|---------|
| Introduction  | page 4  |
| Section 1: Benefits of fast internet access                   | page 5  |
| Section 2: Transforming the network                           | page 9  |
| Section 3: Facilitating NGA deployment                        | page 10 |
| Section 4: The dangers of choosing the wrong path             | page 13 |
| Section 5: Selecting a broadband partner                      | page 14 |
| Section 6: BT super-fast broadband                            | page 16 |
| Glasgow planning: Where past and future coexist               | annex A |
| Glasgow night work: While you were sleeping                   | annex B |
| BT in Cornwall: Fibre boosts Cornish bid for digital business | annex C |
| References  | annex D |

## Introduction

Digital technologies are playing an increasingly important role in public and business life. Private sector organisations are dependent on the efficiencies of online operations to maintain competitiveness. Similarly, central, regional and devolved governments are adopting online delivery models so as to provide public services sustainably, especially given current restrictions on public spending, and to the greater

“The move from analogue to digital technology is one of those revolutionary changes. It will define the competitiveness of our economy and change dramatically the way we lead our lives”

UK Government Digital Britain report, 2009 (2)

satisfaction of citizens.

Access to a fast broadband infrastructure is the foundation for e-government and digital business. The future development and delivery of many public services, from education to healthcare, lies online. Businesses bring wealth to a region and, as they increasingly move into the digital realm, fast internet access is arguably more important to where a business locates than

access to conventional physical infrastructures.

But the era of build-it-and-they-will-come infrastructure is over. Proactive partnerships with network operators are the future for communities that want to seize the opportunity of providing fast access infrastructure to their citizens and businesses.

Developed and developing nations alike are jostling for position in the knowledge economy and any nation or region which fails to invest in the basic infrastructure will fall behind. Business will be throttled and citizens will not be able to participate fully in public life. It is imperative that economic strategies should ensure that internet access infrastructure is at the top of investment priorities.

This is not just a doctrine preached by IT and telecommunications firms eager to sell technology products and services. It is a message repeated by the UK and devolved

“Broadband will be the basis for digital invention and innovation and the foundation for digital and other investments that lie at the very heart of our shared knowledge economy and society.”

ITU & Unesco Broadband Commission report (3)

governments, by the European Commission and by the United Nations.

According to Unesco, every 10 per cent increase in broadband penetration results in

## Section 1: Benefits of fast internet access

1.3 per cent additional growth in national GDP. (1)

Fast broadband access provides a number of benefits which can be summarised under three headings: business enablement, public service delivery and digital participation and entertainment for citizens.

The three are not entirely distinct. For example, fast broadband can enhance the delivery of existing public education services, encouraging students to remain in a region after graduation and found digital businesses given a ready market of online consumers with known local preferences. In fact, the knowledge economy is largely envisaged as this virtuous circle of online public service delivery, entrepreneurship, and consumption

“The UK’s digital dividend will transform the way business operates, enhance the delivery of public services, stimulate communications infrastructure ready for next-generation distribution and preserve Britain’s status as a global hub for media and entertainment.”

Digital Britain

of digital information and media by businesses and consumers.

### 1.1 Business enablement

Business enablement has two aspects:

enhancing the competitiveness of existing firms, and attracting new type of business.

In the last 15 years, e-commerce has evolved to become the default means of trade for both business-to-business and business-to-consumer organisations. Therefore, fast broadband infrastructure makes a region more attractive to businesses and high-earning knowledge workers. It enables organisations to conduct more of their business online and reap considerable efficiencies.

Businesses can improve efficiency by participating in global value chains with their business partners and stakeholders, and can offer customers rich online experiences such as video and real-time interaction. They can take advantage of teleworking and high-definition teleconferencing, thus lowering office and travel costs and consequently reducing carbon emissions and regional traffic congestion. They can offer parents more flexible family-friendly working practices, and tap into a global workforce.

Some of this is technically possible with conventional broadband infrastructure, but with fast broadband it becomes much easier to achieve and is more likely to become the de facto way of working rather than an exception.

In the knowledge economy, access to fast broadband provides access to the global market. Geography is no longer a barrier to participation and the constituent players of a

virtual global business could just as well be based in a rural location as in a city (see box Fibre boosts Cornish bid for digital business).

Fast internet access also attracts new types of sustainable business, especially in high-margin creative sectors such as advertising, digital entertainment and software development. These businesses require fast infrastructure which enables them to upload content quickly to their customers as well as to download information.

High-earning knowledge workers and graduates in these sectors will also be attracted by fast broadband infrastructure, bringing prosperity to an area.

Now businesses of all sizes are looking forward to the next stage of effectiveness via shared computing resources – known as utility or cloud computing – which provide them access to IT capabilities beyond their individual budgets. Underlying cloud

“Governments have today an unprecedented opportunity to unleash the creativity and inventiveness of their citizens and industries to innovate and invest in health and education. Although broadband is a means to an end, and not an end in itself... broadband can help generate jobs, growth, productivity and, ultimately, long-term economic competitiveness.”

Broadband Commission report

computing is an assumption of fast broadband, providing employees real-time access to data and applications.

## 1.2 Public services

What applies to businesses in terms of increased efficiency and effectiveness also applies to public service provision.

Digital capability is an integral part of the financial solution for restricted public finances. Online delivery of services can unlock significant cost savings and serve to increase levels of satisfaction among citizens.

For example, the cost to the DVLA of issuing vehicle excise discs has been cut by 45 per cent by transferring the process online, saving around £8 million a year. The system was used by 18 million people in 2008. (5)

These dynamics can be applied to services such as health and education. For example, NHS Choices had 5.2 million visitors a month as at January 2009. Not that hospitals and schools can be replaced by broadband connections, but many health and education services lend themselves to online delivery, such as information about healthy diet, exercise, treatment and recovery; or self-paced tuition as part of life-long learning, both of which improve the well-being of citizens.

Furthermore, fast broadband access enables existing health and education establishments to amplify the services they can offer in the region by tapping into the expertise available in national and even international centres of excellence.

Joining the virtuous circle with business, public service data can also play an important

“Better use of public service information has great potential to generate new businesses and jobs and to provide consumers with more choice and better value for money.”

Neelie Kroes, European Commission vice president for the Digital Agenda (6)

role in the digital economy. For example, on a national level the mapping data released by the Ordnance Survey has given rise to hundreds of commercial applications.

### 1.3 Digital entertainment

Fast broadband access also enables over-the-wire suppliers to provide entertainment services to homes, adding to the desirability of a geography.

It will enable music tracks to be downloaded in just two seconds and an entire HD film in 10 minutes, and it will vastly improve video streaming and online gaming experiences. Faster upload speeds will mean it is much quicker for consumers to post photos and videos to their favourite sharing sites.

Home information services, such as smart grids for utilities, will also be enabled by fast broadband.

### 1.4 Political will

A society based on a knowledge economy and digital inclusiveness is envisioned at national and international policy-making levels.

#### 1.4.1 UK government

The Digital Britain report of June 2009 made clear the then UK government’s intent for the transformation to a low-carbon knowledge

economy based on as wide a roll-out of fast broadband as possible, and to ensure that public services are as accessible online to as many people as possible and business and enterprise have fast and reliable connectivity.

The UK’s Coalition Government is currently exploring a number of options to deliver next generation broadband to areas of the UK that are not likely to be covered by existing commercial deployments – often referred to as the ‘final third’. Its objective is to have the ‘best superfast broadband network in Europe by 2015’ and Ministers are clear that local authorities should play a central role in its delivery. In addition to this, in March 2010 the Government produced new guidance for public sector bodies to help ensure their community is not left behind. The report conducted a risk assessment of local communities across the UK and found that **87 per cent of rural communities need to take action** to mitigate the risk of not being included in the roll-out of next generation broadband.

Communities that want to seize the opportunity of providing fast access infrastructure to their citizens and regional businesses will need to seek proactive partnerships with appropriate network operators.

As part of the Comprehensive Spending Review on 20 October 2010, the Chancellor of the Exchequer announced that £530m will be provided for super-fast broadband to be extended to rural areas. This comprises £230m of under-spend from the existing Digital Switchover Help Scheme (DSHS) available now, and £150m in each of 2013/14 and 2014/15 from the new BBC

licence fee deal. There will also be an additional £150m in each of the following two years, making a total of £830m by 2017.

How the money will be spent and under what conditions will be determined by Broadband Delivery UK (BDUK), created as the delivery vehicle for the Government's policies on broadband. BDUK has announced that there will be initially four NGA pilot schemes - in the Highlands and Islands, North Yorkshire, Cumbria and Herefordshire.

#### 1.4.2 European Commission

The European Commission has also articulated a similar vision of smart, sustainable and inclusive growth for the 27 member states of the EU in its Europe 2020 strategy.

One of the seven flagship initiatives of Europe 2020 is the development of the Digital Agenda for Europe, which was presented in May 2010.

The Agenda sets targets for the deployment and take up of fast broadband, namely that by 2020, all Europeans should have access to the internet at 30Mbps or above.

"The roll-out of ultra-fast open and competitive networks will stimulate a virtuous cycle in the development of the digital economy, allowing new bandwidth-hungry services to take off and fuelling growing citizen demand, which in turn will stimulate further demand for bandwidth," says the Commission. (8)

#### 1.4.3 UN

The Broadband Commission – a joint committee of Unesco and the ITU – also sees fast internet access as fundamental to sustainable economic growth. The Broadband

Commission's report lists seven benefits of fast access:

- Social mobility
- Financial savings
- Educational attainment
- Improved salary prospects
- Democratic engagement
- Increased satisfaction with public services
- Improved health services

It may seem that this is building a picture of a digital utopia in which citizens, business and public services exist in a harmonious virtual world. At BT we believe this is attainable.

**"Smart, sustainable and inclusive growth as envisaged by the Europe 2020 strategy will very much depend on the efficient and effective use of the internet, and internet access speed will be a key factor in achieving this."**

European Commission, Europe 2020 initiative (4)

It is not science-fiction to imagine citizens treated by their family doctor in their local hospital under the real-time direction of a world-renowned medical expert; for students to receive in their local college teaching from an overseas Nobel prize-winner; for citizens to engage in local issues from their living rooms; and for local firms to build world-beating businesses with access to global markets and global talent.

## Section 2: Transforming the network

Currently, most households and businesses receive broadband over the existing copper-based infrastructure. With technologies such as ADSL2+ this is capable of download speeds of up to 20Mbps. To facilitate fast broadband, the network requires upgrading to fibre optic, providing much higher bandwidth.

There are two basic network topologies for deployment: fibre to the premises (FTTP), where fibre optic connections are run to every household and business; and fibre to the cabinet (FTTC), where fibre cables are run from the local exchange to street-level distribution points and interfaced with the existing copper network for connection to individual premises.

FTTP can provide download speeds of up to 100Mbps and upload speeds of up to 30Mbps. FTTC currently provides download speeds of up to 40Mbps and upload speeds of up to 15Mbps.

The aim of this paper is not to examine in detail the technologies involved, but to explain the transition process and how this might affect regional issues such as road traffic and planning.

Once deployment has been agreed in principle, the first step is for BT's network planners to establish how the network will be physically built, including where new cabinets will need to be located.

New street cabinets are larger than existing units, need to be within 100m of existing cabinets (preferably within 50m) and require a metered power supply.

The latter requirement means any decision over their position is necessarily a multi-party collaboration between the appropriate planning and highway teams, BT's network engineers and representatives of the relevant electricity supplier.

The aim of fast internet access is clearly to enhance a community, not despoil it. BT has a successful track record of deploying street cabinets in highly sensitive conservation areas, such as Glasgow's West End (see box: *Where past and future coexist*).

Similarly, while the laying of fibre cables inevitably causes some disturbance to road traffic, BT has proved that a flexible, collaborative approach can minimise disruption even on some of Britain's busiest routes (see annex: **While you were sleeping**).

## Section 3: Facilitating NGA deployment

### 3.1 Investment

The investment required depends on many variables: the size of the community, the complexity of the network and intervention model chosen (see 3.2 below). A review by the European Commission indicated that between €38bn and €58bn would be needed to achieve the target of universal 30Mbps coverage in all 27 member states by 2020.

For its part, BT has committed £2.5bn to upgrade the UK network with fibre-optic lines in preparation for the roll-out of fast broadband.

Furthermore, the OECD has concluded that the cost savings in four sectors of the economy – transport, health, electricity and education – would justify the construction of a national fibre network. And the UK, for historical reasons which are embodied in national regulation, enjoys one of the most competitive broadband retail markets in the world.

The EC estimates that around 80 per cent of the costs of deploying new infrastructure are civil engineering costs. Private investment should be encouraged by appropriate coordination of planning and rules for sharing physical infrastructure and by financing measures, in line with the EC's state aid rules (9), to reduce risk and promote new open infrastructures.

### 3.2 Intervention

Deployment may be facilitated by intervening

at different layers in the broadband value chain.

#### 3.2.1 Infrastructure layer

The majority of the cost of deployment is in the underlying infrastructure – fibre optic cables and their ducts. Projects have therefore looked at building new duct and/or laying optical fibre and then renting this to operators.

Addressing the greatest capital challenge overcomes any unwillingness to invest among network operators, but there is a risk that disconnecting deployment of infrastructure from service providers can result in sub-optimal deployment where the infrastructure maps poorly to emerging demand. And service operators will be unlikely to exploit the network – and thus the public sector unlikely to recoup its investment – unless infrastructure is indeed mapped to demand.

#### 3.2.2 Wholesale & infrastructure layer

Intervention at the wholesale layer looks for an operator to build and operate a network with ready-made wholesale services which are then sold to subscribers by independent service providers.

This reduces the risk of unused infrastructure by building the foundation of a fully functioning market. However, in a highly price-competitive broadband market, service providers require access to large numbers of subscribers to be profitable and networks covering perhaps just one city or community may not offer sufficient customers.

If only a very small number of service providers participate this approach could result in a lack of price competition and under-investment in service development hampering affordability and satisfaction for subscribers.

### 3.2.3 Retail, wholesale & infrastructure layer

In this model, intervention ensures that participation from a range of competing retail service providers will be delivered to complement the investment in wholesale and infrastructure layers. Under current EC state-aid rules, the intervention must not subsidise the retail element of the project and will need to offer a wholesale element to allow other service providers entry.

Although complex, this model combines the positive elements of infrastructure and wholesale intervention by addressing the most expensive elements, while ensuring a minimum level of subscriber benefit. Intervention at the wholesale layer establishes a competing ecosystem of service providers, driving down subscriber prices while developing services and gives the greatest assurance of long-term commercial sustainability.

## 3.3 Models for intervention

Five broad approaches have been observed for deploying fast broadband – the first three focus on supply side and the others on demand side.

### 3.3.1 Pure public sector

If the public sector creates its own network operating company to build infrastructure and offer service, this offers the greatest control to the public authority, but also attracts the highest risk and can stretch the

organisational capacity. European examples demonstrate that it is difficult to generate the economies of scale that ensure ongoing service evolution, investment and commercial sustainability comparable with the other models.

This model also requires the public authority to take all the risk of raising capital and servicing debt. This can result in the same barriers to investment in unattractive geographies or disadvantaged communities experienced by the private sector.

### 3.3.2 Public-private joint venture

If the public sector forms a partnership with a private sector company, selected through open competition, to develop the network, this brings shared risk and reduces the required public investment but with less control and more complexity.

This model tends to be unattractive to existing operators who dislike the departure from standard business processes and the complexity of sharing revenues and asset ownership with the public authority. They also dislike giving up a degree of control over their business direction and over their ability to mitigate business risk.

### 3.3.3 Gap-funded investor model

Here, the relevant authority asks a private sector investor to identify the investment gap in their business case for deployment and to draw up a business plan.

This allows the private sector to develop an optimal solution. It is attractive to existing operators who have economy of scale and an established community of service providers. It can reduce risk and ensure ongoing commercial sustainability. However, it

requires careful contract management by the relevant authority.

#### **3.3.4 Public sector anchor tenant model**

If the public sector commits to place its networking needs - connections into council buildings and schools etc - within the new initiative, a private sector operator is able to de-risk potential future revenues and reduce the perceived investment risk premium.

This intelligently leverages existing procurement and is low cost. However, there is a risk of service quality issues from a new network affecting the authority's operations. This approach can be used in conjunction with all the other models.

#### **3.3.5 Demand-stimulation model**

If the authority focuses on driving take-up for the new network among businesses, citizens and its own services via local stakeholders, such as chambers of commerce, Business Links, authority employees, schools and local community groups, this reduces risk for all parties by improving the commercial sustainability and delivering benefits to the maximum number of citizens and businesses.

This can be low cost and can be used in conjunction with all the other models.

## Section 4:

# The dangers of choosing the wrong path

In a time of much-restricted public finances, it is tempting to do nothing about next-generation internet access, but this puts at risk the long-term economic prosperity of the region and dooms it to be an anachronistic backwater left out of the digital age.

The authors of the Broadband Commission report wrote: “In this brave new world of digital opportunity we believe the burning issue is what price will be paid by those who fail to make the global, regional, national and local choices for broadband inclusion for all – choices which must be made sooner rather than later. Neglecting the deployment of broadband can severely jeopardise long-term economic growth prospects and competitiveness.”

We have already reviewed in Section 3 the risks associated with various intervention models, such as saddling an area with a white elephant infrastructure and commensurate public debt. But is there an opportunity to form a joint venture with a new network operator, for example a local business, rather than a national operator?

This will be attractive to new operators looking to build market presence, especially equipment manufacturers who are able to use network equipment (at minimal marginal cost of production) as their matched investment.

However, the risk is that a new operator may not attract the critical ecosystem of service providers who will want to use existing systems and processes – such as their established interactions with BT. They will not want or be able to develop new systems and processes for individual geographies as this undermines their economies of scale.

## Section 5: Selecting a broadband partner

### 5.1 Shop around

It's wise to talk to as many different potential partners as possible to gauge what attracts them as a partner and investor and what they bring to the project. Challenge them on what concerns them and how they would approach some of the issues raised here.

Consideration should 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. Deploying to an entire geography can be the most effective way to maximise interest from potential investors.

Expect the private sector to want to make a profit, or they will not invest. A profitable network will increase its commercial viability and thus its long-term sustainability. Good returns will also encourage the private sector to continue to invest in an area.

One of the greatest difficulties for the private sector is to understand the structure of local authority service provision. From the outside it is not always clear who to engage with or how to encourage consensus.

Areas that have developed a cross-departmental group to develop their broadband strategies, obtaining buy-in from local businesses and other stakeholders, have been best able to engage with potential investors, develop well thought-through initiatives, and proceed to successful outcomes.

### 5.2 Engage advisers

Potential private sector investors will be keen to help authorities shape their vision. However, the broadband industry is complex, so it is important to obtain professional, independent assistance from consultants and legal advisers to develop plans and ensure any selection processes is open, fair and robust.

It is also important to select consultants with industry knowledge to make sense of complex proposals and evaluate the suitability of potential partners and the commercial sustainability of proposals.

### 5.3 Questions

As a starting point here are 10 questions to ask a potential broadband partner.

1. Who is responsible for maintaining commercial sustainability? Few communications operations work efficiently on a small scale because customer revenues pay for new development. Can the network operator attract enough service providers to ensure services remain price competitive and continue to evolve? What will subscribers be charged initially and over time?
2. What resources does the partner have for building the network and can they ensure their design minimises ongoing costs – the biggest long-term cost for an operator – and copes with increasing bandwidth demand? Experience of designing for low maintenance is key.

3. How reliable will the network be? As the local economies become more dependent on the new network, what resources are available to fix problems – including disasters – as quickly as possible? How upgradable is the underlying technology? Fibre networks offer the greatest future proofing. What sort of long term upgrades has the partner planned?
4. How much money is a potential partner guaranteeing to invest irrespective of how well the project goes?
5. What is the plan for maximising take-up of the network by businesses, citizens and the public sector? What will the subscriber experience in terms of marketing, ordering, installation and ongoing support? Problems here may reflect badly on the public authority.
6. Does the partner understand EC state aid rules?
7. What is the plan for covering rural and disadvantaged areas? The relevant authority has to ensure a partner does not cherry-pick the most attractive areas, such as high-density urban developments and business parks.
8. How does the network cope with latency-sensitive real-time applications such as voice and video? What traffic management and quality of service features are built in and how do they affect other traffic?
9. Is there trust, commitment and a good working relationship on both sides that will see the project through any unforeseen challenges? Are both parties focussed on outcomes? 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.
10. What direct and indirect impacts will the new network have on environment, equal opportunities and diversity? The investment can have significant positive outcomes for all these agendas if carefully constructed.

## Section 6: BT super-fast broadband

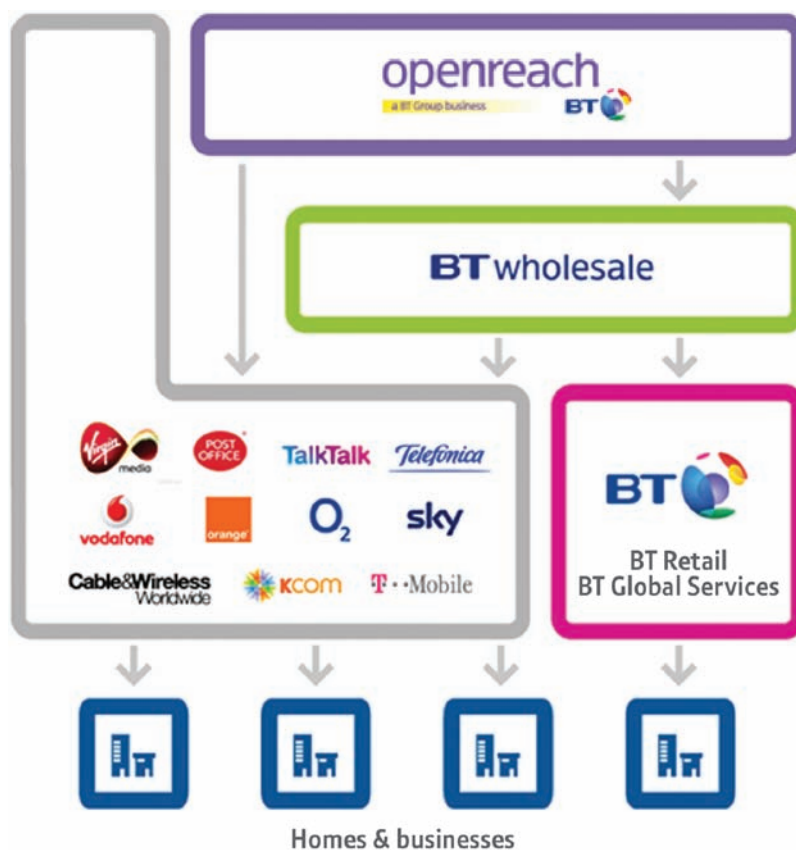
### 6.1 BT super-fast broadband

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 1000 service providers offer service through Openreach's infrastructure or BT Wholesale.

Openreach is the part of BT responsible for the wires and fibres that connect tens of millions of homes and businesses to local telephone exchanges. All of the UK's communications providers have equal access to Openreach's network. Openreach is leading the deployment of BT's £2.5bn investment in fibre.

Communication providers have the choice of gaining access to BT's local access network (also known as 'the last mile') directly from Openreach or via a wholesaler like BT Wholesale - which in turn buys access from Openreach.

Some providers that buy directly from Openreach deliver broadband services to end-users over their own network infrastructure, which they install in BT exchanges. Many providers that do not have their own network infrastructure choose to buy service packages from BT Wholesale which they then brand and sell to their customers.



BT Retail buys services from BT Wholesale which it then sells onto its end user customers – consumers and small and medium sized businesses. Larger enterprise and public sector organisations are served by BT Global Services.

BT is investing £2.5bn to make super-fast fibre broadband available to two-thirds of the UK by 2015.

### 6.2 Examples of partnerships

BT has 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.

Through an innovative partnership with Iwade Parish Council in Kent BT is able to deliver next generation broadband to the village which was previously not commercially viable.

BT is also investing £78.5m in rolling out fast broadband in Cornwall, a joint effort with The European Commission, Cornwall Council and local businesses (see Fibre boosts Cornish bid for digital business).

And BT is in discussion with a number of UK regional authorities on their next generation broadband plans.

## Glasgow planning: Where past and future coexist

When it came to deploying superfast broadband to the West End of Glasgow, over 40 per cent of the 68 cabinets to be installed were in conservation areas. How would it be possible for Openreach to roll out its futuristic fibre network to the modern residents of these streets without diminishing their aesthetic appeal?

BT Scotland's regional partnership director James McClafferty led the way, using his existing relationships to help Openreach engage with all the stakeholders – Glasgow City Council Directors across several departments plus the CEO of Clyde Gateway Regeneration company, local authority planners, Scottish Heritage and local conservation groups. Working closely with Openreach next generation access planning manager Eddie Hunter, his team of network planners, installation engineers and civil contractors, they built virtual teams across all these groups.

Firstly, Openreach's network planners met with the local councillors to outline the needs and time lines for upgrading each exchange. The Openreach team also met with the local council, Historic Scotland and local conservation groups to find practical solutions to citing street cabinets in conservation areas.

To meet technical requirements, the new cabinets have to be within 50m of an existing cabinet. But they also have to be connected to mains power and this is often the defining factor in positioning them. In fact, the

cabinets draw over 500W, which classifies them as a dwelling and means each one requires a metered supply. So Openreach also had to involve Scottish Power in negotiations over positioning.

It is critical that the new fibre cabinets are situated where they will cause the least aesthetic concerns or safety issues, such as obscuring sight lines of traffic, reducing the width of a pavement, or too close to a bus stop.

Openreach toured the area with the local council planner agreeing the best locations for the cabinets.

Whenever any issue arose, impromptu meetings were held between Openreach's planners and the local council's to agreed rapid solutions. Setting up virtual teams by engaging all the key stakeholders in the delivery plan on a daily basis helped to build up a strong team.

"From the planning to the building we ensured from that all parties were effectively engaged as a virtual team, knowing their part in the process, who they are dependent on, who they were impacting, as well as ensuring through daily calls and weekly face to face meetings that issues were openly and promptly dealt with," said Eddie.

## Glasgow night work: While you were sleeping

In Scotland 60 per cent – 120km – of the major fibre routes have been built between the hours of 5pm and 6am. This stealthy way of working has been necessary to prevent disruption to Scotland’s already crowded roads. Of the top 30 traffic hot-spots in Europe, Edinburgh comes in at number five and Glasgow at number seven (9).

One of these is the main A82 trunk road from Lowland Scotland to the Western Scottish Highlands, along which were laid two new fibre spines totalling 8.5km.

Local authorities have to be given 90 days notice before works can begin on the street, so once it was clear the plans required digging up this vital route, Openreach’s project team met with local authority streetworks consultants and highway inspectors to agree traffic management and minimise the impact on the public.

The traffic restrictions meant Openreach’s team were not allowed to work on the main routes between 09.30 and 15.30 throughout the 16-week programme, setting them a big challenge to finish on time and on-budget.

“A huge part of the success in this project is the commitment of the engineers who were prepared to work throughout the night,” says Jim Casey, Openreach’s team leader for complex workflow allocation.

Blockages in the cable ducts, such as water, waste or sewage, can make it unsafe to install the cable, so it has to be cleaned out or rerouted. If extensive sections of new duct are required, Openreach has to give the local authority a further 30 days notice for work to be carried out, which would delay the project and increase costs.

So the team was given autonomy to carry out minor reworking of the cable routes, if required, and seek permission from the planners to use alternate routes – while also keeping an eye on additional costs.

“The team’s commitment, self-management and professionalism were a major factor in ensuring this project was delivered to the planned ready-for-service dates,” said Jim.

## BT in Cornwall: Fibre boosts Cornish bid for digital business

At the end of September 2010, BT announced £78.5 million investment in rolling out fibre broadband to Cornwall, potentially making the county one of the best connected rural areas in Europe. The European Commission is adding up to a further £53.5 million from European Regional Development (ERD) Convergence funds.

The intention is to boost the local economy by attracting and retaining high-tech, high-growth creative and low-carbon businesses which make use of high-bandwidth connectivity.

The roll out of fibre broadband will create an estimated 4000 new jobs and protect a further 2000 under threat from recessionary pressures.

“This gives businesses access to world-class communications which will dramatically increase their competitiveness,” said Alec Robertson, leader of Cornwall Council.

The roll-out runs through to 2014, but the first areas in the county will be connected in early 2011. Between 80 and 90 per cent of business and residents in Cornwall will be able to connect to the fibre services. The remaining businesses and residents outside of the fibre footprint will also receive faster speeds through a mix of technologies such as advanced copper, wireless and satellite broadband

As an example of how the fibre roll-out will benefit the region, University College Falmouth (UCF) will be launching new courses and services as part of its Academy of Innovation and Research to train local businesses and encourage graduates to stay in the county and found creative businesses.

“You can’t build a sustainable economy unless you have educated local people,” said UCF chief executive Prof Anne Carlisle.

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## For further information

Contact either BT Scotland, BT Wales, BT Ireland or the appropriate English Regional manager as appropriate – for contact details see: [www.bt.com/btregions](http://www.bt.com/btregions)

## Offices Worldwide

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