

UNSEEN NETWORKS LTD

Haven Gateway Digital Broadband Strategic Objectives

May 2010

Executive Summary

Purpose:

To present a clear and well defined strategy to be adopted by the Haven Gateway Partnership which will:

1. Provide a summary overview of the issues relating to next generation broadband infrastructure.
2. Provide an indicative summary of current broadband availability within the Haven Gateway with particular regard to the main commercial and rural centres.
3. Detail a recommended strategy which will embrace the key growth sectors identified by the Haven Gateway Partnership and the associated objectives with particular regard to developing IT Coverage 'a wireless sub region', exploiting creative industries and supporting through technology a sub regional Tourism and Culture Strategy which will enable the Haven Gateway to be at the forefront of digital technology in supporting tourism and engaging with visitors.
4. Highlight the key objectives of the proposed strategy
 - Develop the role of the Haven Gateway working with local authorities and other key stakeholders in the public, private and voluntary sectors as the enabler and co-ordinator of broadband strategy within the Haven Gateway Sub Region.
 - Promote the creation of a number of wireless enabled towns based on a tourism and cultural strategy.
 - Working with partners to deliver enhanced broadband connectivity to key urban and rural centres within the Haven Gateway including Harwich, Manningtree, Woodbridge, Stowmarket, Hadleigh, Brightlingsea.
 - Work with the public sector in supporting the co-ordination of public sector aggregation.
 - Co-ordinate An open access broadband strategy to support economic regeneration with particular regard to the delivery of broadband solutions into Business and Enterprise Parks.
 - Working with the private sector to present and implement a strategy which will attract and introduce new carriers and infrastructure companies into the Haven Gateway and provide a platform for sustainable investment.

Haven Gateway Broadband Summary

In considering the next generation of broadband infrastructure it is important to understand the current state of provision and usage of the first generation of broadband technology. Appendix 1 provides a summary of existing broadband availability within the Haven Gateway Sub Region which details very clearly the division between some of the urban and rural area's in terms of broadband provision but also highlights some of the potential obstacles for growth due to the availability of broadband services in Harwich and Clacton for example.

In evaluating future requirements it is necessary to define what is meant by "superfast broadband". Whilst different definitions exist, mostly in terms of the downstream speed (how quickly data is received from the Internet at the user's home or office), it is recognised that most people find this hard to relate to and understand. Therefore it is more helpful for it to be defined in terms of the services it can support particularly as next generation broadband is envisaged to offer new services including IPTV, supporting for example at least three simultaneous HDTV programmes into a home - this equates to a downstream speed of at least 24 Mb/s. In addition, superfast broadband should be able to support many more users accessing services at the same time without degradation (most of us have experienced the Internet slowdown from 4.00 pm when schools are out and we have to fight for bandwidth).

Regions with cable networks (mostly provided by Virgin Media) are already experiencing something close to superfast broadband though this is mostly in major towns and cities. Virgin's national network does operate in parts of the Haven Gateway however the coverage outside the main urban areas of Colchester and Ipswich is very limited.

With regard to British Telecom it is recognised that BT Openreach are the only operator which has published its plans for superfast broadband deployment implementing a programme called "21CN", which is based on using new technology to reduce its operational costs though a number of new and improved products and services will also be provided as part of the programme. 21 CN is unlikely to be fully deployed until 2020 though the improved broadband aspects of the programme are already starting to appear and should be deployed in many of the exchanges within the Haven Gateway by 2015.

21CN exchanges will have new broadband technology installed that will enable speeds of up to 24 Mb/s to be reached. Whilst this appears to be revolutionary and exciting, it is similar to that which is already available from the so-called "unbundlers" (broadband service providers which put their own equipment into BT exchanges) like 02 and TalkTalk. Therefore users ie domestic and business residing quite close to the exchange might get almost 24 Mb/s but, just like regular broadband, the speed falls away with distance from the exchange. 21CN and the unbundlers' advanced products aren't true superfast broadband but they

get reasonably close if you are lucky enough to live near to the exchange. In practice, only those homes and businesses up to 2 km or so from the exchange are likely to see significant speed improvements through 21CN. Delivering superfast broadband over long telephone lines (over 2 km) is not viable. Providing superfast broadband to most premises requires either the deployment of new access networks or the use of shorter copper lines. This is shown in Figure 1 below.

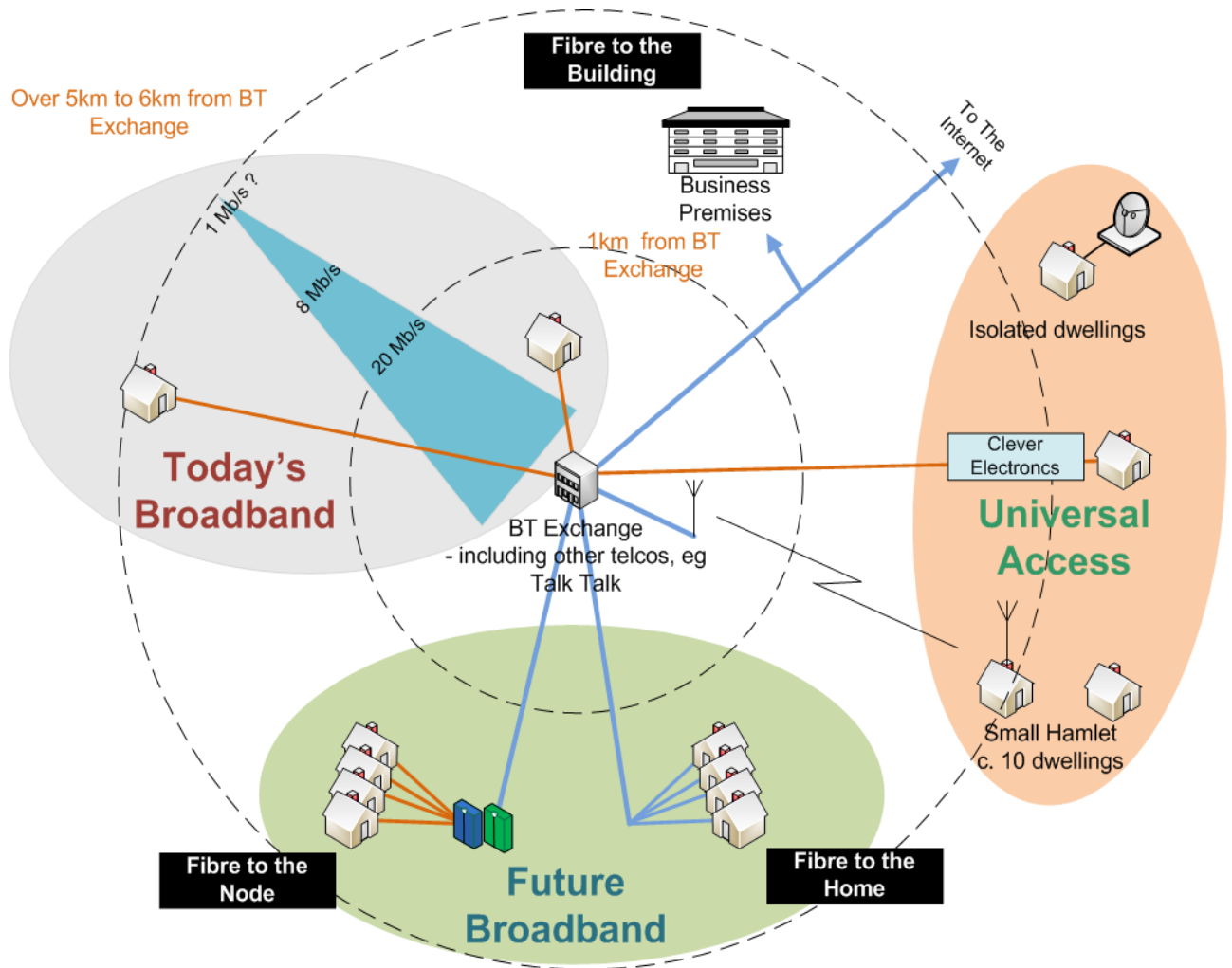


Figure 1

In terms of fibre optic technology this doesn't suffer from the same speed or distance limitations as copper and its capacity can be effectively regarded as infinite. Large business premises often have fibre connections direct to the

building or business park. It is possible to put fibre directly into homes though this is very expensive and is only really practicable in new build situations.

More often, network operators take fibre optic cables to the nearest concentration point to the customer and then convert the optical signal to an electrical one which is then transmitted over a much shorter section of telephone wire to the customer. This is called Fibre to the Cabinet (or sometimes Fibre to the Node). Speeds of up to 100Mb/s can be achieved with today's technology. Deployment requires fibre optic cables to be laid from the BT exchange to a new equipment cabinet located near the BT wiring cabinet (these are the green BT cabinets often seen on the edges of pavements or beside the road). Unlike the old BT green cabinets, these new cabinets house electronic equipment which needs power, adding to the cost and complexity of deployment.

Accurate and up-to-date information from BT about proposed future deployments of superfast broadband needs to be qualified and obtaining better information from BT should be a key part of the Partnership strategy going forward. However it should be noted that previous discussions with BT Openreach have indicated that those exchanges with the greatest number of "unbundling" operators are likely to be the early candidates for superfast as they represent the most economically attractive exchanges for BT's service provider customers.

In terms of GSM and 3G Broadband Services the provision of monthly and pay-as-you-go mobile data deals from the mobile operators appear to be attractive ways of getting broadband access in areas where fixed line broadband is not available, however they do suffer from several issues including poor coverage in rural areas, demands on the networks which arguably preclude widespread use for solving broadband access problems in the Haven Gateway Sub Region.

With regard to wireless services there does exist some business point to point wireless solutions which are limited to specific companies as well as some limited rural connectivity. As a way forward it is envisaged that wireless could and should play a more active role in supporting rural enterprise, creating a digital platform in urban destinations and becoming a channel for enhanced broadband services in rural communities.

Economic Benefits of Enhanced Broadband

In quantifying the economic benefit of enhanced broadband it is of some value to note the following, all of which will apply to the Haven Gateway Sub Region:

- In 2005, England's rural areas hosted at least 476,000 VAT or PAYE registered enterprises. They earned £304 billion and employed 2.96 million people. This represented at least 27% of England's enterprises; 13% of employment, but only 9% of the country's business revenue or turnover.

- According to the website 'speedtest.net' which bases broadband speeds on real life measurements the United Kingdom ranks 40th in the world for download speeds and languishes in 63rd place for upload speed trailing many of our global competitors.
- In a separate survey on broadband speed by the Federation of Small Businesses (FSB) in June 2009, more than half of small businesses who responded said they relied on the internet for up to 50% of their annual turnover.

In areas where broadband speeds and capacity are limited this undoubtedly is and will have a detrimental impact on retaining and attracting business. Indeed where broadband speeds are comparatively slower it has been clearly established that options for business diversity and growth have been much diminished and have caused a slow down in economic competitiveness.

Whilst larger rural based businesses will have or are in the process of investing in broadband at some level the cost for of investment for both larger businesses and SME's will still potentially mean that rural areas or areas where there exists poor broadband speed and provision lose will continue to lose out to competitors operating from urban areas where 'adequate' broadband may exist.

With this background the Haven Gateway Partnership by promoting and enabling the deployment of next generation broadband in the sub region will ensure that local businesses will be able to benefit from:

- improved communication with customers and suppliers – according to recent research, by 2012, £1 in every £5 of all new commerce in this country will be online
- make business more competitive
- an ability to undertake research
- new market opportunities - both locally and globally
- improves marketing with use of new media
- allow for online meetings/ video conferencing
- online training and distance learning - can cut costs and save time
- homeworking - ability for employees to work during bad weather, public health scares etc
- broadband enabled CCTV improves security

Strategic Role

Based on its strategic position and its relationships with both the public and private sectors within the Sub Region the Haven Gateway Partnership is well placed to perform the essential role of enabler and co-ordinator in relation to broadband strategy.

In this respect it is recommended that the Haven Gateway Partnership actively progresses the following strategic objectives:

- Work with Local District, Borough and County Councils in co-ordinating broadband requirements with particular regard to identifying what networks are already available within the Sub Region. Naturally this will include BT, however it is essential that efforts are made to engage with other carriers and ISP's to understand what is available and how such networks could support the delivery of enhanced broadband connectivity within the Sub Region which could benefit enterprise, and communities.
- Through funding sources and on going projects become an enabler for business broadband initiatives including the development of open access networks to support business park connectivity.
- Become the conduit for the development of a regional broadband strategy which can be presented to the private sector (Carriers, ISP's and Infrastructure Investors) as a means of engagement and attracting new investment.
- From a technical perspective become the enabler and promoter of a diverse but pro-active menu of technical solutions which could support the delivery of enhanced broadband in the Haven Gateway Sub Region. Solutions to include VDSL, Wireless Broadband, Fibre to the Cabinet (FTC), Local Loop Unbundling.

Key Objectives

As a Sub Region the Haven Gateway offers considerable potential to attract new business however the issue of broadband its capacity, speed and capability will have an increasing impact on where business decides to locate in the future.

In this respect and to support the key strategic and commercial of the Haven Gateway Partnership it is recommended that the following principle objectives are adopted and developed:

- **Develop the role of the Haven Gateway in working with local authorities and other key stakeholders in the public, private and**

voluntary sectors as the enabler, co-ordinator and promoter of broadband strategy within the Haven Gateway Sub Region.

It is envisaged that this could be achieved by promoting public sector aggregation, working with Local Government, Primary Care Trusts, Strategic Health Authorities and other public sector bodies in exploring and facilitating opportunities where the public sector could share network services and potentially extend such network availability to support enterprise particularly in rural areas.

- **Promote the creation of a number of wireless enabled towns and resorts based on a tourism and cultural strategy**

In this respect it is recommended that the Haven Gateway Partnership work closely with Ipswich and Colchester to promote and develop a town centre wireless strategy based on creating a digital platform to deliver digital services and applications to support tourism and retail. Such services to include wayfinder services, digital advertising, mobile payments, retail promotions and interactive tour guides.

Beyond this platform such a network could become an income generator for the Council, generating a range of diverse revenue streams with significant direct and indirect benefits for the Authority and other benefits for businesses, partner organisations and individuals as well providing a platform to pilot some more social orientated initiatives including social and telecare, smart metering and digital exclusion.

In terms of coastal towns it is proposed that consideration is afforded to a limited deployment of a wireless network infrastructure in Clacton on Sea, Felixstowe and Aldeburgh with a focus on tourism orientated applications and services.

- **Working with partners to deliver enhanced broadband connectivity to key urban and rural centres within the Haven Gateway.**

Through a variety of technical solutions including Point to Point and Point to Multi Point wireless connectivity and Fibre to the Cabinet work with the private sector in developing sustainable commercial models to deliver enhanced high speed broadband to the following towns Harwich, Manningtree, Woodbridge, Stowmarket, Hadleigh and Brightlingsea.

In each instance the solution could potentially be different however what each enablement will prioritise is business connectivity with the opportunity to pilot more residential/community services including telecare, education home access for rural areas based on business broadband connectivity.

- **Co-ordinate an open access broadband strategy to support economic regeneration with particular regard to the delivery of broadband solutions into Business and Enterprise Parks**

With a focus on the growth nodes within the sub region actively explore the delivery of open access networks to deliver broadband provision within new business/enterprise parks ensuring greater capacity at a more cost effective price and support the development of the digital sector in the Haven Gateway Sub Region. (North Colchester Regeneration Area, East Colchester, East Ipswich, Harwich and Felixstowe).

- **Working with the private and public sectors to present and implement a strategy which will attract and introduce new carriers and infrastructure companies into the Haven Gateway and provide a platform for sustainable investment**

Whilst it is recognised that certain Carriers and ISP's are already present within the Sub Region it is recommended that the Haven Gateway Partnership bring together the strategic objectives as detailed with a view to approaching the market and encouraging new carriers and ISP's to implement a strategy within the Sub Region. As indicated this strategy would bring together potential private (Chamber of Commerce) as well as public sector requirements (public sector aggregation) which when combined potentially could offer a compelling and sustainable reason for market entry and investment.

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