Next Generation Broadband – why it matters

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Introduction

This paper provides an overview of Next Generation Broadband and why it matters to consumers, to business, to delivery of public services and to national economic development. Next Generation Broadband (NGB) affects all these areas and in ways that may not now be envisaged.

What does NGB mean?

NGB is an often confused term which means different things to different people. In essence it means faster, higher quality connectivity to the Internet than is currently experienced by the majority of users. Bandwidth speeds are often used as a measure with current generation broadband offering speeds up to approximately 25Mbps meaning NGB refers to speeds greater than 25Mbps. This is just one crude measure but one which is perhaps necessary to enable the many involved in this industry to settle on at least one measurable figure. The reality is more complex and includes elements to measure the quality of the online experience, how responsive and reliable the connectivity is for both uploads and downloads, and how contention is managed. Going with the generally agreed position that NGB is broadband delivered at speeds greater than 25Mbps, the more important factor is to understand what the possible benefits are of NGB.

What are the benefits?

The first most obvious benefit of NGB is a generally faster experience when accessing the Internet and for other online activities such as remote connection into company networks, deploying voice over the Internet, and supporting multiple users on a single connection. For the residential market this helps the home worker access media rich online resources, allows delivery of more integrated

media delivery into the home, enables the household to communicate using video, supports entertainment through music, video and gaming and with all of these uses occurring simultaneously with multiple users. These are some of the benefits we can understand at present.

For the business sector, NGB speeds have long been available through more traditional and more expensive business products available from the marketplace. However, with the advent of mass rollout of NGB, costs come down and so high bandwidth connectivity is now within reach of even the smallest business. This improved connectivity helps business access and support their customer base, enables improved business to business communication to assist in research, sales and financial transactions and improves resilience with access to online services such as increasing use of cloud based services.

The public sector is a wide encompassing term but the commonality is that all areas of the public sector can benefit from better connected citizens. From the local council who can reduce costs by offering more online access to services, to the emergency services who can more cost effectively connect their remote sites, to the education sector who can publish online material for remote learners, to the health service who can deliver on the hopes of telehealth and telecare; these are some of the benefits we can understand at present.

There are obvious benefits to all users in being able to access information more quickly and with richer content involving image and video rather than straight text. NGB is required in order to support developments in content and to continue to make online services usable and cost effective. However, there is more to NGB than just faster online access. Just like when providing infrastructure, such as roads or electricity, we cannot pretend to know the full potential of what the infrastructure might support and what it could mean to our economy. We can envisage existing tasks being done more quickly, or more effectively, and so measure an economic benefit around that

but we don't know what will develop if NGB enables any restrictions on the underlying bandwidth capability to be eliminated. Just like nobody could foresee the major economic impact the Internet would have when it became more mainstream in the early 90's, nobody can really predict the developments that NGB will enable. We can start thinking about more delivery of services into households and businesses, perhaps to monitor and adjust energy usage, to deliver multimedia communication paths including everyday high definition video, to monitor and alarm for health and security purposes, to enable access to rich online cloud based services, to manage and maintain connected devices, to support more home grown content and much more that nobody can predict or should even pretend they fully understand.

How can it be provided?

The investment required in infrastructure to provide true NGB is substantial and will only be targeted at more urban areas where demand is higher. However as this infrastructure is so fundamental to future engagement of all sectors of the community and will be the core to future economic development, action is required to address the investment needed for more challenging areas.

The vagueness that surrounds the economic benefits can hamper these investment decisions. This vagueness is due to two things. Firstly the combined benefits across all sectors of the community are not considered in full when looking at the overall potential benefits. This is often due to a legacy of silo government control over different sectors such as health, local government, education, emergency services and economic development. This is starting to improve but further work needs to be done through strong central governance to gain the true picture of the potential return on public sector investment. Secondly, many still do not see the potential that this infrastructure can bring; it's like asking investors to invest in the Internet back in the 80's when there was no

knowledge of the wide variety of applications and services that could be delivered to the benefit of all. And of course public finance conditions are more challenging. However, the stark reality is that some countries do see the potential and are investing in this core infrastructure and, as more do so, those left behind will become increasingly disadvantaged.

The provision of NGB requires the rollout of fibre as far into the network as possible, ideally to the premise for maximum future proofing. However, the high civil costs to deploy will mean that fibre may only reach the kerbside with existing copper technology used to create the final connection. Other technologies such as wireless will also play a part but fibre remains the goal as far as possible.

The model for provision outside urban areas is challenging and is debated by many who believe that alternative models other than the traditional telecom operator route are required. This is a more complex issue than may first appear however and needs to consider how alternative models will compete against the traditional operators, how competitive service providers will be ensured and how costs to consumers will remain competitive and the service remains sustainable. In reality, in the UK at least, there will be a mix of deployment with the majority provided through traditional routes with public investment extending this out to more remote areas, complimented by smaller community developed solutions in the most challenging areas. Anything else would require a serious and radical shift in thinking within the public sector on how they wish to see this economic infrastructure being developed and managed for the future.

About FarrPoint

FarrPoint are leading independent consultants offering impartial technology advice to improve our client's business. FarrPoint specialise in networking, IP telephony and convergence technologies and provides services of strategy and design, specification and sourcing, project management and network efficiency and technology reviews.

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