LightSpeed Derby's response to the State Aid consultation

LightSpeed Derby is the partnership agency, supported by Derby City Council, to facilitate and implement a citywide broadband strategy.

LightSpeed Derby specifically wishes to comment on section 3.3.3 *Aid to ultra-fast broadband networks.*

LightSpeed Derby welcomes the recognition that public intervention should still be possible in areas where existing or planned NGA networks do not reach the end user premises with fibre networks. We note the conditions that in this case, any new subsidized network must also demonstrate a clear 'step change' compared to existing networks infrastructure and that the new infrastructure would need to have significant <u>enhanced technological</u> <u>characteristics</u> compared to existing networks.

LightSpeed Derby recognises the vital importance of Derby's citizens and businesses having access to broadband speeds of *at least* 100 Mbps and which are symmetric in nature and thus providing future proofing against the demands of future broadband services.

However, we consider it equally relevant to understand that fibre to the premises is vitally important not simply because of the speed and symmetric nature of connectivity that it provides, but also because of the step change that it will allow, not simply to individual customers, but also to the economic and social life of the city. In fact it will have impact on the wider city region as well by making home working a real possibility for those living beyond the city boundary and thus reduce the environmental impact of commuting, as well as ensuring communications integration for supply chain companies located just beyond the city.

1   The transformational impact of fibre to the premises

LightSpeed Derby is committed to facilitating the provision of ubiquitous fibre-to-the-premises connectivity in the city, through the creation of an open access platform. The reason is not just the step change that this will provide to individual customers, but much more the transformational impact that this will have for the city.

We see ubiquitous fibre-to-the-premises as having a transformative impact on the city in three ways. It will:

- Create a coherent city-wide communications market in the city.
- Generate the development of a new market in services to the resident and business
- Enable the city to become even smarter

1.1   Creating a coherent city-wide communications markets

At the moment, there are two communications markets in any city:

1. Large companies and public sector bodies lease high bandwidth dedicated networks from major telecommunications companies to link up their sites within the city and to link up with their other sites around the country and internationally, as well as to the Internet

2. Small businesses and residents use either the telephone network or cable network to get Internet, telephone and television services. If they use the telephone network in the UK and in many other parts of Europe, then they can buy their services from a range of Internet Services providers.

Neither of these two markets is working as well as it could, or should, to meet 21st century needs and opportunities.

Large companies and public sector bodies normally have to either pay a large upfront cost and/or sign up to a 5 to 7 year deal to pay for the expensive initial investment needed to deliver them high bandwidth services. As well as requiring a level of commitment which is well in excess of the capacity of start-ups and SMEs, this also ties them into a single provider long term, which generally results in higher prices and lower levels of service.

Residents and small businesses have to put up with a service that is delivered over an infrastructure that wasn't designed for Internet access, but for either telephone or television services. Because of this the service tends to be variable in quality – and is not subject to SLAs and quality guarantees which are only available to corporates.

Consequently there is also a significant gap between the two markets and it is difficult to move between them. For instance there may be an architectural practice for whom small business type connectivity is normally sufficient, but who sometimes need to upload very large files. At the moment they cannot take a normal broadband service and pay for bursting up to high speed connectivity when they need it. So they either stay on lower quality broadband and use courier services to ship data flies on CDs, or pay significantly more money to have a dedicated leased line.

1.1.1 The opportunity

A citywide fibre to the premises network could bring these two separate markets together. The fact that the bandwidth over a length of fibre can be virtually limitless, simply dependant on the electronics at either end, means that a well-designed ubiquitous network could meet the needs of all customers, whether large enterprise, small business, or home user.

There would be no longer be a two tier telecommunications market, as the single network would serve all customers, whatever their size, and it would be easy for customers to scale up their internet service in a way that was right for them, and to allow them to pay for short term bursting to higher speeds.

1.2 Generate the development of a new market for services

Up until very recently, connectivity to the home and small business has been used simply to provide Internet access and telephony. The connectivity is paid for by the customer.

However this connectivity can be also used for a range of other purposes. Broadband is basically an always-on channel for data. It could therefore be used, for instance, to support smart metering, allow remote management of electricity use to deal with the challenge of peak demand, deliver telecare and telehealth services, and support local security services. It also could be used to provide access to local services and information; including for instance local educational resources for school pupils, without data needing to be sent onto the internet and back.

Many of these services are gaining increasing prominence because of their role in delivering key Government policy agendas such as smart metering, renewable energy, fuel poverty, health and social care of the aging population and so on.

Having an always-on channel for data could also open up new business opportunities as private companies utilise the provision of access into their customers' homes to deliver valuable and useful services.

For this to work effectively, all of these different services would ideally be delivered via a dedicated channel to the home and paid for by the agencies or businesses concerned, rather than by the consumer. Being able to have a dedicated data link with clear QoS into each of their customers' homes would provide significant savings to the agency concerned and so the costs of the data access would sensibly be included within the total costs of the service package provided.

1.2.1 The problem with today's network

The problem is that broadband over ADSL or VDSL is managed in such a way as to provide only limited open access. At most, the customer can choose separate providers to delivery their telephony and their internet access. But that is all.

There is also no room in today's telecommunications market for service providers to pay for their connection to the home. Because of this, their access is dependent on the quality of broadband provision that their customer might be willing to pay for. This means that they cannot provide a consistent and quality service.

 The result is that:

- Consumers are losing the benefits of valuable services

- Public policy objectives are more difficult to achieve

- Important revenue streams are being lost which could significantly contribute to the business case for upgrading the broadband infrastructure in the UK

- Business opportunities are being lost

1.2.2 The opportunity

The roll out of fibre to the premises will not only provide much higher bandwidth and higher quality to support the delivery of these new services to the home, it will make it easy for multiple VLANs to be delivered to the home or business. As a new market, it would also open up the possibility for different VLANs to be paid for by different customers. These would include the resident or business owner, but could equally well be the agency or business offering the service delivered over that VLAN.

Fibre to the premises therefore provides an opportunity to rethink the existing market structure to see how it could be changed to provide added value to the customer and added revenues to help pay for the new infrastructure required.

One way that this might work, for instance, is that all premises in an area where superfast broadband was being rolled out could be connected up and provided with a utility channel that could allow service providers to deliver services over a common platform to all their potential customers.

Should the resident or business wish to have broadband Internet access or other consumer oriented services, then they would sign up to the Communications Provider of their choice for these services to be delivered over a dedicated VLAN. But even if a resident should choose not to pay for broadband internet services, it would still be possible for health or social care providers to be able to use a dedicated data channel into the home to provide effective care to the citizen.

Such a utility channel would need to be managed as an open access network and used to deliver services from a range of providers, who would pay according to a clear and transparent funding

This idea may, or may not, be practical. However, in any case, the provision of fibre to the premises throughout the city would certainly open up significant new market opportunities that are not possible in a fibre to the cabinet/coax environment.

1.3 Enable a city to become smarter

In addition, a ubiquitous fibre network around a city could not only deliver connectivity to homes and businesses, but could also be used to link street furniture to provide the backhaul for wireless broadband, to link traffic lights and other signage to help manage traffic or parking and link embedded sensors and actuators in the built environment to enable many real-time smart applications.

Bringing together a single network that not only provides fibre to the premises, but also links up street furniture and the built environment would lead to significant cost savings. However, it would also make it much easier to share information. It would make it much easier to link information provided by all the different systems to provide a comprehensive overview of city life and support better management of all the citywide systems by the City Council and all key stakeholders. It would also make it much easier for the information to be provided to residents and businesses.

2   Conclusion

LightSpeed Derby is clear that moving from a fibre to the cabinet/coax NGA network to a fibre to the premises one will not only provide step change for individual customers, but will have a significant transformational role for the city itself.

In order to achieve these benefits, it is not necessary to start completely afresh. There are many existing infrastructure assets that could be a key part of fulfilling this ambition and many communications providers that have a long history of providing services. What is needed is for city councils such as Derby to be able to use their resources to help shape the local market and ensure that it not only provides individual households and businesses with a better quality of broadband but that it also provides a firm platform to enable the city as a whole to have a strong base to compete economically on the world stage.

LightSpeed Derby therefore firmly supports this additional option within the draft guidance, and sees it as a vitally important part of delivering on Europe's digital agenda.

We would therefore recommend that the end of section 78 in the draft guidance should have an additional condition added to point (b) and should read:

….. An aid granting authority must be able to demonstrate that

(a) the new infrastructure would have significant enhanced technological characteristics compared to existing networks (for instance through symmetric speeds), thereby making it future-proof

(b) there is expected demand for such qualitative improvements and/or the new infrastructure forms a necessary part of a credible public sector strategy to deliver enhanced economic or social benefits and

(c) the subsidized network will be operated as a wholesale only network.