RAISING LONDON'S HIGH SPEED CONNECTIVITY TO WORLD CLASS LEVELS

Broadband is now considered the fourth utility. The Government has stated that it wants 99% of the population to have superfast connections by 2018. Internet access speeds and coverage affect the productivity of businesses and are now a factor considered by homebuyers[1]. Access is not only essential to many businesses, but also, as more local authorities are encouraged to move the services they provide online, access is essential for residents to be able to take part in a modern society.

The Mayor wants every resident and business in London to be able to have affordable high speed internet connectivity, should they choose to access it.

In the Vision 2020 document the Mayor committed to making London's connectivity the fastest of any European city, and has worked to deliver this. The London SME Connection Voucher Scheme allows SME businesses to claim vouchers for up to £3,000 for the installation of high speed internet access. This can be applied for from any registered business or trading address, so can provide for home workers installations. It also can be used for Fixed Wireless Access technology which provides high speed access without needing fibre cabling infrastructure. This has been particularly useful for businesses located in areas that do not have access to street cabinets that have been upgraded to fibre[2].

This far reaching and flexible scheme has now been rolled out across the city. However, restrictions over State Aid intervention in the supply of connectivity infrastructure, and a number of structural barriers, has left London with areas of poor connectivity. Many of these areas, left to market forces, may well remain unconnected.

Fibre broadband is not the only solution to addressing the needs of Londoners and London businesses. Broadband refers to a limited range of technologies, and it is important for our efforts not to focus purely on broadband; we need to consider the whole range of technologies that can enable connectivity. While an important part of addressing London's connectivity, broadband should be just one of a range of solutions considered when strategically assessing the needs of an area.

---

[1] *Fast broadband now considered vital by increasing numbers of homebuyers, The Observer, Sunday 2 March 2014* http://www.theguardian.com/technology/2014/mar/02/fast-broadband-vital-to-homebuyers?CMP=twt_gu

[2] *For more information visit* http://www.london.gov.uk/broadband

This approach has the potential to turn areas of market failure in fibre broadband provision, into market opportunities for alternative providers that utilise alternative technologies. It allows a wide variety of providers to enter areas that others had deemed commercially unviable. It also enables businesses and residents to see more immediate connectivity solutions - ones that fit the needs of their area.

The future may hold technologies that deliver levels of connectivity that cannot be envisioned today. However, we must act with the technologies we have available, and ensure we put in place a flexible framework that allows for the speedy adoption of new communication technologies. This balance between immediacy and long term planning has been reflected in the proposals put forward.

We are aware of particular problems in areas such as Rotherhithe, the City of London, Clerkenwell, and others. We need to understand the extent of the problem, and develop ways to assess the strategic needs of an area, and tackle these barriers to provide access to high speed connectivity to all parts of London.

Case Study: Rotherhithe

The Rotherhithe peninsular has, in a relatively short amount of time, transformed from a largely industrial area, into a thriving residential district. While this development has contributed greatly to the regeneration of the area, it has been left with the communications infrastructure from its industrial past.

Many properties in the area have 'exchange only' connections. This is where the property's connection goes directly to the exchange, rather than via a street cabinet. There were a number of reasons these direct to exchange connections were previously used. Direct to Exchange provided secure connections for industrial customers concerned about protecting connections for equipment such as security cameras, which were not bandwidth intensive. Direct to Exchange connections were also a go-to option for large developments.

Direct to Exchange connections use copper for connections from the exchange to the property and speed is lost the further away the property is located from the exchange.

As the residential population of the area has increased, and demand for higher bandwidth services has grown exponentially and existing connections are not able to deliver acceptable speeds. Many residents report speeds of between 2Mbps-0.2Mbps. For reference, to stream BBC iPlayer in standard definition requires 2Mbps of sustained bandwidth. This level of connectivity means that households are unable to do any activities requiring higher bandwidth, such as simultaneous device streaming (watching iPlayer on one device, while another family member plays online games), or remote business connections.

The prevalence of Direct to Exchange connections has resulted in a lack of street cabinets in the area. This has led to a very limited rollout of fibre broadband, due to the level of investment required to deliver additional street cabinets, and so many properties continue to rely on Direct to Exchange connections that fail to provide the higher bandwidths needed by businesses and modern households.

We need a coordinated approach across London to make sure these barriers are surmounted, the strategic needs of an area are assessed, and that every Londoner and London business can access the connectivity they need. To do this, the Mayor will establish a Connectivity Advisory Group. The Group will be comprised of the Greater London Authority, London Boroughs, providers of different types of connectivity, representatives of businesses, residents, developers, and other relevant stakeholders.

Working in conjunction with the London Infrastructure Delivery Board[3], the Connectivity Advisory Group will:

- Take forward a city-wide mapping exercise to ascertain existing levels of high speed connectivity accessibility; the barriers to provision in 'not-spots'; and identify the strategic priorities in areas to assess whether the levels of connectivity required now and in the future will be met

- Consider ways to monitor levels and available methods of connectivity in a responsive way on an on-going basis

- Develop a profile of business and consumer communities and their potential communication infrastructure needs; consider ways to aggregate demand; and explore ways to encourage the take up of high speed internet access

- Advise on how the GLA and local authorities can build in connectivity requirements when developing strategic priorities for an area, considering a range of solutions, potential providers and partnerships, and technologies to meet those needs

- Advise on, and assist with, the delivery of the Mayor's Digital Inclusion Plan, due to be published in Autumn 2014

- Develop a strategy for better utilising existing infrastructure to deliver improved availability and connection speeds. Transport for London has an extensive range of assets which it uses to support physical connectivity in London. The Connectivity Advisory Group will work with TfL to look at how these assets may be used to support connectivity. The group would also support local authorities in utilising their networks, building on projects such as using CCTV networks, as Hammersmith and Fulham have done.

[3] The Mayor is establishing a London Infrastructure Delivery Board to bring together London's key infrastructure providers to advise on best practice delivery. For more information, see separate paper 'Improving the Delivery of London's Infrastructure', published alongside this paper.

Case Study: Hammersmith and Fulham Utilising CCTV networks to improve fibre broadband provision

Hammersmith and Fulham has become the first council in England to let out access to all 15km of the underground ducts through which the authority's CCTV network runs.

The scheme was operated through a duct asset contract with a leading technology company. Utilising this method ensured the scheme was compliant with State Aid.

The technology company, ITS Technology Group (ITS), will install fibre optic cabling within the ducts. This new resource will then be used by ITS to offer internet users in Hammersmith and Fulham improved connectivity.

While the communications requirements of London have evolved rapidly, the various systems that regulate infrastructure have not kept up. This has led to a number of anomalies that have proved to be barriers for providers seeking to invest in communication infrastructure. These are common across communication provision, and if addressed, can help to ease the delivery of many different types of connectivity.

One such regulatory issue is the London Permit Scheme. The Traffic Management Act 2004 allows all Local Authorities, including the London Boroughs, to operate traffic management permit schemes to control how and when utility companies carry out road works. The introduction of the Permit Schemes aimed to deliver better management of the highway and therefore reduce congestion on key roads by limiting road works.

While the aims of the scheme are noble, in relation to the installation of communications in London, it has had the effect of providing an additional, and possibly unnecessarily in some cases, burdensome barrier.

Almost all of the Boroughs have chosen to set charging rates at the maximum the Department for Transport allows, which has resulted in providers paying charges that could be invested in connectivity infrastructure. The Permit Scheme also requires that engineers visit the property where the connection will be made twice, causing delays in connections that can frustrate consumers. Providers have also indicated that their works are largely contained and limited to small incisions on residential roads, and therefore not appropriate for the Permit Scheme.

The Mayor will work with Boroughs to ensure the appropriate application of the Permit Scheme, and assess whether communications providers may be considered exempt for certain installations.

Providers have also explored the suitability of microtrenching for the installation of fibre broadband cabling. Microtrenching is a deployment technique that is more cost-affective, less disruptive and quicker than conventional dig techniques. There are, however, a number of considerations to take into account including the suitability of roads, and the impact on existing infrastructure.

While the Department for Culture Media and Sport issued a guidance note in 2011 about the use of microtrencing, local authorities have been reluctant to explore this option. The potential of microtenching to facilitate the faster roll out of fibre broadband in London means that it must be explored as an option.

THE MAYOR WILL WORK WITH LONDON
BOROUGHS TO EXPLORE THE SUITABILITY
OF MICROTRENCHING.

RAISING LONDON'S HIGH SPEED
CONNECTIVITY TO WORLD CLASS LEVELS
MAYOR OF LONDON   PAGE 7

Whether the future of home internet access is Fibre to the Property, mobile network broadband, Wide Area Networks, or another technology, in all likelihood any connectivity network will require the facilitation of access points across the city in order to develop city wide coverage. Street furniture, such as bus stops and street lights, is the key means of providing such access points. Mobile operators already experience difficulty obtaining permission from local authorities to install network extenders on street furniture to increase capacity for their networks in areas where there is high demand. We need to consider how future deployments can be facilitated as quickly, simply, and cheaply as possible.

The London Plan specifically refers to connectivity.

Policy 4.11

The Mayor and the GLA Group will, and all other strategic agencies should: facilitate the provision and delivery of the information and communications technology (ICT) infrastructure a modern and developing economy needs, particularly to ensure: adequate and suitable network connectivity across London (including well designed and located street-based apparatus); data centre capability; suitable electrical power supplies and security and resilience; and affordable, competitive ultrafast fixed broadband access and areas of public wireless connectivity

The Mayor will work with London Boroughs, as part of the Connectivity Advisory Group, to ensure that this policy is used to facilitate the development of a connectivity network that meets the strategic priorities of their areas, whether this is fibre broadband, mobile broadband, or another method of connectivity delivery.

The Mayor has overall strategic responsibility for planning in London. One of the key responsibilities includes being consulted on planning applications of strategic importance, with the power to refuse planning permission on strategic grounds, or to take it over for his own determination. The communications network of London is clearly one of strategic importance. Should the implementation of the London Plan across strategic agencies not provide the adequate flexibility for the development of a robust communications network, whether based on existing technologies or future ones, the Mayor will seek to bring planning applications for communications infrastructure within this strategic responsibility, with the ability to take them over for his own determination as a means of last resort.

High speed internet access can help improve the productivity of businesses, and provide residents access to a wider variety of services and products. As well as working on 'pull' strategies to encourage a wide variety of providers and connectivity solutions, we must also consider the 'push'. A core part of encouraging the roll out and take up of high speed access is ensuring the demand exists and is fully understood. Providers should have access to the information they need when assessing where to expand their networks. Where the market is not meeting the demand or strategic priorities for an area, the Mayor can accurately identify the best way to address these challenges.

The Connectivity Advisory Group will help to deliver this by developing a profile of business and consumer communities and their potential communication infrastructure needs, considering ways to aggregate residential and business demand, and, using this information to explore further ways to encourage the take up of high speed connectivity.

It will be vital that, through this profiling exercise, the group considers ways to improve digital inclusion. In Autumn 2014, the Mayor will be publishing his Digital Inclusion Strategy which identifies ways to help get people online, and ensure all Londoners can benefit from improved connectivity. The Connectivity Advisory Group will advise on, and assist with, the delivery of the Mayor's Digital Inclusion Strategy.

We must also seek to stimulate demand in developers and property owners to improve their property's connectivity. This can be addressed, in part, through a connectivity rating system. One option would be for the private market to supply such a rating. An example of this can be seen in Rightmove's use of Point Topic data to provide a 'Check Broadband Speed' button to every one of its property listings. Should this option be taken forward, the Mayor would work to develop a way to share information with providers to ensure consumers and businesses have access to accurate information on connectivity levels.

An alternative option would be for a connectivity rating system operated on a similar basis to the Energy Performance Certificates. The property would be rated based on the levels of connectivity available, where A would be high levels of connectivity and G would be low levels. It would be produced using standard measuring methods so properties could be easily compared, and would include recommendations to improve the connectivity rating of a building. The system would be developed in conjunction with the property sector, with the aim of it being a useful resource for property owners and managers.

While neither of these options would solve the issue immediately or completely, it would help to overcome the problem where people purchasing or renting a property, whether residential or commercial, are unaware of the building's connectivity until moving in, and therefore incentivise property owners and managers to invest in their building's connectivity.

The Mayor will explore the option of a connectivity rating system for properties.

Providers have, historically, only shared data about their coverage on a strictly limited basis. This data sharing has often been controlled through a Non-Disclosure Agreement (NDA), whereby those granted access have not been able to share it more widely. Publically available data from Ofcom is also limited. For example, where a postcode has too few properties on it, so the connection of one particular property could not be identified, this has been removed from databases for data protection reasons. This had led to a situation where the Greater London Authority, despite being the administrative body for Greater London, is prohibited from accessing information that would accurately identify the areas of no or low connectivity.

While consumers are able to check provision through services such as Rightmove's 'Check Broadband Speed' button, or BT Openreach's 'When and Where' website[4], this does not provide detailed information. Speed checkers are largely based on estimated information. Healthy competition in the market of communications provision can only be achieved through access to perfect information, both for consumers and providers. Data sharing will be critical to this taking place.

As the Mayor is seeking to reduce the barriers that limit service providers' ability to invest in communications infrastructure, he will expect the relevant companies to share, on an on-going timely basis, the required data to produce a detailed and accurate picture of the levels and variety of provision across the city.

[4] http://www.superfast-openreach.co.uk/where-and-when/

Cities across the US and Europe are exploring options such as fibre to the premises or city wide public Wi-Fi. This year New York announced plans to turn phone booths into free Wi-Fi hotspots. In 2011, Google selected Kansas City for their Google Fibre programme, rolling out fibre to the premises (FTTP) across the city. If London wishes to maintain its reputation as a world leader in technology, we need to ensure the connectivity is there for technology businesses and technology consumers, to enable this growing industry to flourish.

Where communications providers have deemed an area not-commercially viable, the Mayor must play a role in ensuring those residents and businesses in the area that do wish to have access to high speed internet access are assisted in achieving the level of connectivity they require.

The work of the Connectivity Advisory Group, in mapping existing networks and availability, and identifying the cause of 'not-spots' will help to support this work, by ensuring we are able to take the best course of action for an area, factoring in the Connectivity Advisory Group's profiling work, and the strategic priorities of areas across London.

One option for London could be to invest in an open communications networking areas deemed commercially unviable, or in areas where providers planned roll outs are delayed so as to jeopardise the regeneration of an area of economic importance. This could be done through a carefully planned supply side intervention. Schemes such as these, if planned carefully, and with providers, can be fully compliant with State Aid regulation. However, we would want to ensure we consider the full range of solutions available before intervening in such an area. This would mean looking at alternative providers and technologies, and exploring potential partnerships in areas of strategic importance, where connectivity can be considered as part of broader package of interventions in an area.

An alternative option for facilitating roll out to residential properties would be to operate a demand-led voucher scheme, similar to the Mayor's SME Connection Voucher Scheme[5], available to residential properties. This Residential Connection Voucher Scheme would require substantial amounts of funding, and would also require careful planning to ensure compliance with State Aid regulation. The experience of the SME Connection Voucher Scheme, has shown that is possible, and that a variety of communications providers, offering many different types of technology solutions, can work with the scheme to deliver networks of connectivity that meet the strategic needs of an area.

[4] For more information visit http://www.london.gov.uk/broadband

The Opportunity Areas represent the ideal occasion to build in high quality communication networks to provide superfast internet access. The Queen Elizabeth Olympic Park has shown how this can be successfully done, when it is planned for and key players are involved from the outset. The London Legacy Development Corporation has developed a long term plan that ensures high speed provision across the Queen Elizabeth Olympic Park, and provides a path for the assets to be subsequently sold to and managed by the private market in the most cost-effective way.

The London Infrastructure Delivery Board, working with the Connectivity Advisory Group, will investigate opportunities for partnerships to meet the strategic communications needs of Opportunity Areas, and involve a variety of communication providers, developers and others in the early planning and delivery of the Opportunity Areas. They will be well placed to ensure high speed connectivity capability is designed into new builds and refurbishment schemes.

We will also use the new connectivity ratings to encourage developers to seek new technologies. One of the factors determining a property's rating will include the variety of connectivity options available, and will assess whether the developer has explored or utilised new (and superior) technologies as connectivity options.

As with other technologies it is important we remain technologically neutral until the market is more developed. As with the development of the Wi-Fi standard (which actually refers to interoperable implementations of Wireless LAN standards, certified by the Wi-Fi Alliance). While the market for delivering high speed connectivity is currently fragmented, it will eventually converge. It is important that, in looking at public funding of supply in communications network infrastructure, London remains technologically neutral while the industry develops the future standard for delivering wireless high speed connectivity, in order to avoid costly mistakes.

As stated throughout this chapter, this prioritisation of 'connectivity' overall rather than an individual type of technology, opens up market opportunities and encourages a broader range of providers and partnerships to meet an area's strategic priorities.

This flexible approach, considering the strategic needs of an area, benefits Londoners and London businesses, by providing them with a multitude of ways to access high speed affordable connectivity that meets their needs, and ensuring we do not trap our capital in a cycle of institutionalising one technology over another, and limiting our ability to intervene in the future as London's connectivity needs inevitably change.

– The Mayor will establish the Connectivity Advisory Group

– The Connectivity Advisory Group, working with the Mayor and the London Infrastructure Delivery Board will:

  • Take forward a city-wide mapping exercise to ascertain existing levels of high speed connectivity accessibility and identify the barriers to provision in 'not-spots'

  • Develop a profile of business and consumer communities and their potential communication infrastructure needs; consider ways to aggregate demand; and explore ways to encourage the take up of high speed connectivity

  • Develop a strategy for better utilising existing infrastructure to deliver improved availability and connection speeds

  • Assist with the delivery of the Mayor's Digital Inclusion Strategy

– The Mayor will work with Boroughs to ensure the appropriate application of the permit scheme, and assess whether communications providers may be exempt for certain installations

– The Mayor will work with London Boroughs to explore the suitability of micro-trenching

– The Mayor will work with the Connectivity Advisory Group and Boroughs to ensure the implementation of the London Plan facilitates the development of a world-leading communications network

– If this fails, the Mayor will seek to bring planning applications for communications infrastructure within his strategic responsibility, with the ability to take them over for his own determination as a means of last resort

– The Mayor will explore the option of a connectivity rating system for properties

– The Mayor will expect the relevant companies to share the required data to produce a detailed and accurate picture of the levels of provision across the city

– The Mayor will consider options for filling the gaps in high speed connectivity provision