

## Regeneration Committee - 1 March 2017

### Transcript of Item 6 - Broadband and Digital Connectivity in London

**Navin Shah AM (Chair):** I am pleased now that we can move to item 6, which is the main topic of the agenda today, on broadband and digital connectivity in London.

Can I once again welcome our guests to the meeting and invite you to introduce yourselves?

**Jeremy Skinner (Senior Manager - Growth & Enterprise, Greater London Authority):** My name is Jeremy Skinner. I am a Senior Manager in the Economic and Business Policy Unit here at the Greater London Authority (GLA). I run a small team that promotes economic growth in the capital. We have been focusing on infrastructure and promoting science and technology and devolution over the last few years, but in the past we have helped to set up London & Partners and MedCity and have done various other things to support growth in the capital. Amongst the responsibilities on infrastructure, digital connectivity policy falls within my team, which Sara leads.

**Sara Kelly (Senior Policy Officer - Science and Technology, Greater London Authority):** I am Sara Kelly. I am Senior Policy Officer for Technology, looking at how to encourage the growth of tech companies within London. Naturally, a part of that is going to be ensuring that they have the digital connectivity they need and I work on digital connectivity policy in Jeremy's team.

**Cllr Jonathan Glanz (Lead Member for Broadband and Connectivity, Westminster City Council):** I am Councillor Jonathan Glanz. I represent the West End ward on Westminster City Council and I lead on broadband and connectivity. Our objective in Westminster is to ensure that we have cost-effective ultrafast broadband connectivity throughout Westminster available to all residents and businesses.

**Tim Stranack (Business Development Director, Community Fibre):** Thank you for inviting me. I am Tim Stranack from Community Fibre Ltd. I am the Business Development Director there. We have rolled out what I believe is the largest full fibre-to-the-home network across central London at the moment. We passed nearly 10,000 properties last year with a full fibre connection. We are very keen to grow that and bring the benefits of full fibre to both residents and businesses across central London over the next few years.

**Navin Shah AM (Chair):** Thank you. We have invited Mark Collins as well. He is the Director of Strategy & Public Affairs at CityFibre and, hopefully, he will be here with us very soon. I would like us to start. If I can start with my opening question, which is addressed to the GLA team. Since the 2013 Smart London Plan, which was introduced by the former Mayor of London, how has connectivity improved in London and what have been the major challenges as well as the key highlights of that plan?

**Jeremy Skinner (Senior Manager - Growth & Enterprise, Greater London Authority):** I am going to concentrate on the overall picture and some of the challenges and Sara [Kelly] is going to talk in a bit more detail about the initiatives that have taken place since 2013 to try to tackle those challenges.

We would summarise the overall picture as one of steady improvement but where data on the overall demand and supply at city level is relatively poor. We have provided some maps, which Sara will run through, showing the Office of Communications (Ofcom) data on next-generation access at the city level and showing some of the improvement there. Of course, since 2013, there has been an exponential growth in demand for mobile

digital services and we are still trying to bottom-out the overall picture at city level.

As for the challenges, I guess I have alluded to the first one, which is the overall complexity of demand and supply in what is a very rapidly technologically evolving market. That diversity, we also believe, should be its strength in that there is a variety of suppliers now, which are much more diverse than is often believed. However, that diversity also creates challenges in terms of public understanding. The terminology of a range of different technologies that can provide digital connectivity is very hard to understand and to penetrate. Complexity, I guess, is something that we are always going to live with. If we can try to interpret that complexity for the market, that is one role that would be useful.

Secondly, there are some obvious pressure points. Technology company start-ups, for instance, want access to relatively inexpensive but high business-grade technology. This is a very significant growth area for London's economy and they will feel the pinch.

Thirdly, there are regulatory issues around wayleaves and street works; the awareness of the range of providers, not just amongst the public and commercial but amongst boroughs as well; state aid limitations in terms of what we can do on the supply side, where some local authorities have come unstuck in the past by trying to intervene at an aggregate, comprehensive level on the supply side; and finally, Ofcom data at the borough, ward or postcode level not always being readily available. Those are some of the range of challenges that we find.

There is also a deeper question in terms of what it is reasonable to expect from this emerging market. We would like to see residents and businesses having good access - ubiquitous access, even - to affordable, reliable high-speed digital connectivity appropriate to their needs, including both download and upload speeds. Within that, that encompasses a vast range of needs and preferences amongst businesses and residents and so the supply side necessarily needs to be rich and complex to provide the service that different customers need.

Those are some of the thoughts that we have here in the GLA on the overall position and the challenges.

**Navin Shah AM (Chair):** Sara, if I can, just before you start, we have been given this map here<sup>1</sup>, which covers the majority of the area with superfast broadband, but it is misleading in the sense that there are hatched areas and that is where we are lacking clarity. You might be able to explain to us because there are areas where you have fast broadband and there are areas with slow broadband and no data available as well, which are marked with some kind of hatching. Can you tell us more in detail? Which are the areas with slow broadband, superfast broadband and the areas with fast broadband as well?

**Sara Kelly (Senior Policy Officer - Science and Technology, Greater London Authority):** Absolutely. What the map is showing is availability of superfast broadband. This is not ultrafast. This is talking about speeds of over 30Mbps. The blue areas indicate where that is available. The yellow areas indicate where speeds between 10Mbps and 30Mbps are available. The red area shows where they are under 10Mbps. Grey areas are where there is no data.

What the hatching is showing is the difference between 2014, which is displayed on the current online map that you may have seen on London.gov.uk and data that we received yesterday, in fact, from Ofcom, which shows the availability for 2016. The hatching shows the change from 2014 to 2016. Where there is diagonal hatching running in this direction, it indicates that that area has moved from a lower available to now having

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<sup>1</sup> The map is attached at **Appendix 2**.

access to superfast. You will see that all of those areas are blue and they may have previously been yellow or red but now they have access to superfast availability. Similarly, where there is the diagonal hatching going the other way, they are now able to access fast speeds when they were not previously. The dotted ones are where there was no data available and now we have data available that shows there is no availability in that area.

I appreciate that that is very difficult to see in this very zoomed-out map, but we will be able to share a more zoomed-in one through the London.gov.uk website once we have been able to update the web map, which will be very shortly. I have asked the team to work on it as a priority and so that should be available very soon.

I really wanted to be able to provide this in order to attest to the question as to what the improvement has been from 2014 to 2016. You can see that it is a gradually, slowly improving availability. The filling-in of availability of superfast is happening within the capital, particularly in central London, and that is due to a number of factors, including local authorities working with us on the voucher scheme. That has helped to drive some improvement.

Perhaps if I talk more about the schemes that we have undertaken to date, then I will move on to what we intend to do going forward.

**Navin Shah AM (Chair):** Yes.

**Sara Kelly (Senior Policy Officer - Science and Technology, Greater London Authority):** As I mentioned, there is the voucher scheme, which was funded from the SuperConnected Cities Programme from the Department for Culture, Media and Sport (DCMS). That entailed businesses applying for vouchers to improve their connectivity through providers. We were able to do that as state aid as it comes under *de minimis* because it was only a certain amount of money per business. All in all, that helped 11,000 businesses to improve their connection speeds. That is probably attributed largely to the improvements in central London.

The GLA also seed-funded the [Digital] Connectivity Rating Scheme to launch in London. The Connectivity Rating Scheme is run by a company called WiredScore, which works with properties to give a thorough technical assessment of the connectivity availability within the building. It then publishes that information on its website so that prospective tenants can look and see if that building is going to be suitable to their needs. They are given a certificate rating - silver, gold, platinum - and WiredScore offers the building manager or owner support on how to improve that to deliver better connectivity to tenants. This has helped to improve transparency on availability of buildings because we understand that a lot of particularly tech companies want to know that the building they are going to move into is going to have the high-grade connectivity they need. WiredScore has helped to improve that transparency and then has also provided advisory services to businesses and property owners who are looking to ensure that, when they are building a new property, they have the adequate capability for connectivity for prospective tenants. The tech community are seen as quite attractive potential tenants for a building. We think that the rating scheme has been very successful and they are now launching across the United Kingdom (UK) and in other countries in Europe.

We also worked with Central London Forward boroughs including the City, Westminster and others on the standardised fixed wayleave. Forgive me if I am teaching everybody something they already know about, but wayleaves are a requirement in the installation of fibre connectivity to buildings. You need the provider and the building owner to come to an agreement over who covers losses should damage occur to a building and agree access arrangements. Traditionally, these have sometimes taken months. We have heard cases of it taking years to reach these agreements because the two starting documents between a provider and property

owner are so far apart that it takes them so long to reach a middle-road agreement.

The Central London Forward boroughs set about drafting a standardised document so that there was a more neutral agreement between property owners and connectivity providers to allow more quick installations of fibre. We supported that work and contributed to it and we are promoting its use across London through our stakeholders, other boroughs and property owners. We are going to be building on that work in the future for a mobile wayleave, which I will talk about shortly.

Then, finally, a project that was a small aspect of information-sharing was the Connectivity Toolkit, which you may have seen available alongside the map on london.gov.uk. We had heard from providers that they were often faced with difficulties establishing who their key point of contact was in local authorities and then, from local authorities, understanding the various options available to them in terms of case studies and best practice for improving connectivity in their areas. The toolkit aimed to bring some of that information together and provide it upfront so that the contacts were readily available and tried to shorten that process slightly.

Those are the four main bits that we had worked on previously: the voucher scheme, the rating scheme, the standardised wayleaves and the Connectivity Toolkit. I can now go on to talk about what we are going to do in future.

As you will have seen in the Mayor's manifesto, he is committed to tackling not-spots of availability across the capital. There are going to be various causes for those not-spots, depending on the particular area. It may be that some areas need aggregating demand. It may be that some areas need encouragement between property developers and connectivity providers to talk to each other. There is no one-size-fits-all solution.

What we are going to be doing is establishing a Not-Spot Team, which will work on a location-by-location basis with the stakeholders in the particular areas to identify what the problems are, what is stopping availability in that area and what is the most suitable availability to the people within that area. If there is an ambition for that particular area to grow a tech cluster, for example, the Not-Spot Team will look to see how we improve availability of ultrafast. The Not-Spot Team will work on a location-by-location basis with the stakeholders and try to establish what the problems are and what potential solution is suitable for that area. It will work with two or three local authorities at a time, building up information on best practice, building up a catalogue of how to go about streamlining application processes within a local authority and then sharing that with the next boroughs that they move on to work with. That Not-Spot Team will be launching very shortly.

I mentioned, based on the work from Central London Forward, the standardised fixed wayleave. We are going to be setting up a standardised mobile wayleave under a similar practice. Mobile has traditionally been quite difficult to install in the capital mainly because trying to get agreements between various property owners and establish access arrangements, in particular for mobile, are quite difficult because they need ongoing arrangements past initial installation. We are going to work on the same principle, trying to find a more middle-of-the-road agreement between mobile providers and property owners to ensure that those installations can also happen quickly and ongoing relationships can be maintained between property owners and connectivity providers. There is more.

**Navin Shah AM (Chair):** That was very comprehensive. Before I bring in other members of the panel if they do want to talk about how they see the GLA's role to provide better connectivity - and it would be useful if we can have comments from the other members of this panel - at this juncture can I welcome Mark Collins [Director of Strategy and Public Affairs, CityFibre], who has joined us? Thanks for coming along.

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** Thank you. Apologies for being a few minutes late.

**Navin Shah AM (Chair):** No problem at all. We have just made a start. Does any one of you want to make any comment about the role the GLA plays in this particular aspect?

**Cllr Jonathan Glanz (Lead Member for Broadband and Connectivity, Westminster City Council):** I recognise everything that has been said there, but in terms of the ability of the GLA to make a difference, we need to look at the pinch-points where it has influence.

It is very helpful to have these wayleaves, but there are aspects of insulation on Transport for London (TfL) run roads and GLA owned or influenced property that could also help to iron out some of these problems along the way. In aggregate, if you find that there are layers and layers of ownership for wayleaves, it can take - as we have heard - many months or years. If there were to be a standard form document that was adopted by TfL and the GLA family and encouraged to be adopted by the boroughs, then there would be an opportunity to eliminate those delays and fast-track installation in a way which currently can be very difficult to achieve.

**Navin Shah AM (Chair):** Anything from providers?

**Tim Stranack (Business Development Director, Community Fibre):** I completely agree with Councillor Glanz there. Our biggest single issue in rolling out fibre to central London and outer London is not the investment. Private investment is now there. It is not the technology. We are very familiar with that now. It is getting the permission of the landlords to put our fibre into their buildings. It will be a topic that I keep coming back to in my responses today because it is the single biggest barrier to getting full fibre out to Londoners.

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** From our perspective of the work, we do not - as you probably know - currently make our full fibre investments in London. We work on projects outside of London. However, one of the key themes, when we look at the projects that we do and city investments that go well versus ones that go less well, is the idea of having a digital champion at a local authority level. London is quite large and quite complex in that sense, but there is a role for the GLA to play in terms of bringing the various elements together and promoting digital so that, for private investors, the landscape becomes easier to understand. That is a very important role. Having a digital champion undertaking that co-ordination activity and joining the dots between the various components of a very complex picture is very important. Yes, there is a clear function and role for the GLA to play.

**Navin Shah AM (Chair):** Thank you.

**Tony Devenish AM:** Can I just ask, on the GLA website, do we have a nice and simple explanation of what the problem is and what we are doing in words of one syllable? My background is in utilities and I still do not understand how this bit of utilities actually works properly. If I do not understand it, how is the average London small and medium enterprise (SME) businessperson going to understand it? It is very unclear in terms of all of the players, who does what and how to get help. Is that clear on our website? Can you review it and perhaps send the website link, once you have reviewed it, to the Committee?

**Sara Kelly (Senior Policy Officer - Science and Technology, Greater London Authority):** Absolutely. There are some pages that offer guidance to businesses but, like you say, if it is not immediately available and if it is not obviously available, then it is going to not be as much help to SMEs. I absolutely accept that we should review what is available and make it more simple and easy to understand.

**Tony Devenish AM:** Thank you.

**Navin Shah AM (Chair):** Related to business, is something which is vital for London and that is the huge number of SMEs that we have. There is a particular problem in terms of what their aspirations are and what their problems are in terms of connectivity. They need a lot of support. It was interesting when we visited the City of London Corporation a couple of weeks ago. They are focusing very much on those SMEs. Is this something that the GLA is doing proactively, if not something that we should be doing?

**Sara Kelly (Senior Policy Officer - Science and Technology, Greater London Authority):** The previous voucher scheme was targeted at SMEs. I see that some of the role for the Not-Spot Team is going to be looking at aggregating demand in those areas where we know there are lots of SMEs that cannot justify taking out a leased line for themselves. We can look at assisting with aggregating demand in those areas to provide them a service more suitable to their needs that is going to be reliable and high-speed. There will be a role for us in aggregating SME demand for superfast services going forward through the Not-Spot Team and our other projects.

**Navin Shah AM (Chair):** Thank you.

**Fiona Twycross AM:** Would you be looking at community groups as well and the manifesto asks from voluntary sector organisations? Part of it was about the lack of connectivity they faced, the lack of understanding they had about what they could do and could not do and the issue of people not buying or signing up to the right level of connectivity when they take out contracts. It was about digital literacy, if you like.

Would you be looking at the voluntary and community sector as well as part of that with the SMEs, do you think? Do you do anything specifically on that?

**Sara Kelly (Senior Policy Officer - Science and Technology, Greater London Authority):** I know that colleagues in another team are working on aspects of the Digital Inclusion Strategy, which I understand will address some of those issues but, absolutely, that needs to be built in with everything that we are doing.

**Fiona Twycross AM:** Yes. They would face similar issues to some of the SMEs as well.

**Sara Kelly (Senior Policy Officer - Science and Technology, Greater London Authority):** Absolutely, yes.

**Shaun Bailey AM (Deputy Chairman):** How does London's connectivity compare to other global cities in both its breadth and its depth? Is it fast enough? I look at this definition of 'fast' and I wonder if it passes the Netflix test. Can I stream Netflix? Is that going to work? Also, is our network of high enough quality to support 5G when that all pops up?

**Sara Kelly (Senior Policy Officer - Science and Technology, Greater London Authority):** In terms of a city-to-city comparison, we do not have access to reliable comparative information in terms of speeds and availability. Ofcom collects a lot of postcode data, which this map is based on, but it is not done on an international city basis.

We do have country-to-country comparative information that, again, Ofcom has collected. The UK does compare favourably in terms of EU comparisons. According to that - the information used to be updated

based on the postcode availability - at the end of 2014, 78% of the UK had access to superfast availability and that was the highest of the five European countries that were compared. We know that London availability is higher on average than the rest of the UK, again using 2014 information unfortunately, but 89% of London --

**Shaun Bailey AM (Deputy Chairman):** Is it fast enough? When something says, "Ten to 30Mb", in reality it is 10Mb. Is that fast enough? Does it work?

Also, there are two ends, I imagine. One is the domestic end because we all download, but businesses upload. This is a technical question. Does fast download equal fast upload or are they two separate things?

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** No. Actually, we should be very cautious. Ofcom as the regulator is regulating this industry. It is in Ofcom's interests to make it look like it is doing a good job. Therefore, in creating a comparison that says we look favourable, it is potentially comparing the wrong things. There is no doubt that we have good availability and competitive supply of broadband services and the cost of those broadband services to consumers is relatively inexpensive in the UK because we have a healthy competitive market. If you create a scorecard that ranks those as important, then we come at the top of the scorecard and we look very favourable.

The reality is, though, on quality of infrastructure, the UK lags way behind nearly all international comparables. We are at the bottom of the Organisation for Economic Co-operation and Development (OECD) league table in terms of the number of full fibre-connected premises. We are almost at the bottom of the league table in terms of the quality of our rollout of 4G infrastructure. That puts us in a very bad position when we look at the exponential growth in data. We have to remember that as an economy we are predominantly a service-based economy, which means that we are dependent upon communication and transport of digital data. That is only going to increase and increase.

It is now starting to be recognised - and Government policy is starting to recognise - that we should not be listening to Ofcom in terms of where we stand on international league tables because that is very misleading. We are actually in a very bad position and there needs to be substantial investment in fibre infrastructure.

If you look at international comparisons now, the majority of countries and cities within those countries have embarked on fairly extensive builds of new fibre infrastructure. The UK substantially lags behind in that regard. If you take some of the Scandinavian countries, they have very high penetration of fibre. If you look at Germany, it is now embarking on a big investment programme to put full fibre infrastructure into their towns and cities. Spain now has 83% of all of its buildings across the country connected to pure fibre. The UK has 3% by comparison. That 3% is not going to be in London, either; it is going to be outside of London.

Therefore, we have a lot of catching up to do. We need to be cautious on the comparables. There is no doubt that there needs to be investment in infrastructure to a far greater degree than there is today and so there needs to be encouragement to do that.

**Tim Stranack (Business Development Director, Community Fibre):** [Shaun Bailey AM] You make a very valid point and I completely agree with Mark. The average amount of data that households consume is doubling every two years and 30Mb, clearly, is not going to be enough within the next two years. The UK Government has now accepted that full fibre is the future but, as Mark says, we lag a long way behind our European and, indeed, worldwide partners. I have some of the statistics that Mark was talking about just now that were published last week at the Fibre to the Home Conference in Europe. Latvia and Russia have about 45% or 35% of premises now with full fibre connectivity. Only three European countries do not appear on that

league table because they have less than 1% premises connectivity. Those countries are Ireland, Greece and the UK. It is going to be a disaster if we do not wake up to the fact that full fibre is needed within the country.

**Tony Devenish AM:** You quoted a lot of countries but really we should compare London with, say, New York, Frankfurt or Paris. What are the figures compared to those? That is my first question, please. Secondly, what kind of money are we talking about to get there? Hundreds of millions or billions are we talking about in terms of a capital investment?

**Tim Stranack (Business Development Director, Community Fibre):** The city comparatives simply do not seem to be available. They do not seem to be being collected by anyone at the moment. I do not know if, Mark, you have any more information on that.

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** In terms of comparing London to the big international cities, no. Certainly, the likes of New York and Paris are advanced and they have fairly big fibre investment programmes underway.

I just raise the question: is that the right comparison? Should it be a comparison to other international cities? I have just come back from spending two days at the Northern Powerhouse Conference and, from that, there seems to be a very strong drive for putting the North on the map through an investment in digital infrastructure to give it a competitive advantage.

Again, when we consider the broader implications of us exiting Europe, to give the businesses in this country and especially in London the right tools to be able to compete on an international stage, if we become constrained in our ability for data compared with the other international countries, our comparables, then that is going to put us at an economic weakness.

**Tony Devenish AM:** You do not seem to have any figures. You do not seem to have the data. I am not saying that you are right or wrong. I know that you have given us the information because you said you do not have the data and you are making suppositions, which I may agree with or not agree with, but you do not have the data to make them.

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** I personally do not have the specific data that will compare the number of fibre-connected premises in London to New York or Paris, for example, but I am very confident that there are fairly substantially large full fibre investment programmes underway in those cities. I do not see that in London.

**Shaun Bailey AM (Deputy Chairman):** That begs the question to the GLA Members. We should ourselves pursue those comparisons because they are who we compete with. We are not competing on a national scale. This is the GLA. We are interested in how they are doing in Frankfurt, Paris and Singapore, the places that we compete with. That is something that we would need to know.

**Navin Shah AM (Chair):** What is interesting, if I can intervene here, is that in yesterday's newspaper, there was a report. This was just a reference with no further details but it is something we need to look into. It said that London ranks 26th out of 33 European capitals when it comes to poor broadband coverage. We have a lot of catching up to do and we need to get more details about this here.

**Andrew Dismore AM:** The details are all very interesting but my question is: what are they doing to get so far ahead compared to us? European countries are covered by the same rules on state aid, for example. How



come they can get so far ahead of us? Is it that nobody took any notice until it was too late in the UK? Is it that they are better organised than us? Is it because their infrastructure is more modern than ours? Is it because some of the countries were blown up during the war and can now put new infrastructure in more easily? What is it that these other countries can do and other cities can do that we have not done? How can they do it?

**Cllr Jonathan Glanz (Lead Member for Broadband and Connectivity, Westminster City Council):** Can I make an observation on that, please? I will be referring in this one and talking specifically about Westminster, but the way in which the industry has developed - and we see it very keenly in Westminster - is that large businesses have very fast connectivity available to them on privately leased lines at a price that smaller businesses and residents cannot afford. What we have seen here - and it is perhaps different from what occurs in other markets - is that the trading houses and the people who have huge connectivity needs have entered into arrangements to do that, which is outside the capability of a general rollout because they have those specific needs and are being catered for.

The view from the historic monopoly provider has been that, for smaller businesses, the connectivity provided over copper wires is good enough and we have not seen that view taken in other markets. People have accepted that there is a growing demand that needs to be catered for and will need to be future-proofed and they have gone ahead with a different set of investment criteria, rather than trying to squeeze the last return out of historic copper wire that has been in the ground for 100 years. They have bitten the bullet, had a return on fibre, have done so very successfully and have provided much better connectivity in the process.

**Andrew Dismore AM:** Mark and Tim, you had comments?

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** Yes. It is important to understand some of the historical context to this because, when you understand the historical context, you can then start to think about how to move forward.

The historical context is the dotcom bust in 2000. The investment in digital infrastructure and fibre infrastructure became problematic and the investment stopped about 2000 as a result of the dotcom crash. To resolve an issue relating to --

**Andrew Dismore AM:** Sorry, before you go on, was that just in London or was that worldwide?

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** Worldwide, but the context of this is what the UK regulator then did to encourage better competition. The regulator in 2005 took an approach to encourage service competition on the infrastructure of British Telecom (BT) and BT Openreach was created. From 2005 to today, there has been a model that has been promoting service competition on Openreach's infrastructure effectively by establishing Openreach, by and large, as a national infrastructure monopoly. As a result of that, we have had the benefits of increased competition at service level and lower costs, but we have not seen the corresponding investment in the physical infrastructure. If you take the comparisons to other international models, the regulatory approach was not one of promoting service competition on a monopoly incumbent infrastructure; it was keeping a balance of competition that included the competitive supply of infrastructure.

Most of the examples of cities that are far in advance of London are where the investment in modern full fibre infrastructure has been done and sparked by a competitor to the incumbent and not by the incumbent itself. That is the symptom that the UK has and that is one of the reasons why we are so behind on the league tables.

It is not the incumbent operators - like BT - of the other countries that are making those investments; it is other companies: in the Netherlands, for example, a company called Reggefiber; in Germany a company called Glasfaser; in Italy Metroweb; in Spain a combination of Orange and Vodafone competing with Telefonica. These are all examples where a competitive spurt and a competitive spur within the market is creating greater investment.

**Andrew Dismore AM:** What you are saying is, effectively, under the present regulatory regime, we will never get this fixed. What you are saying is, I suppose, we have to completely change it, maybe break Openreach off from BT, which is not going to happen because the company has decided it is not going to happen, and also open that infrastructure up to competition as well. Otherwise, it will never get fixed.

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** I will just comment on that and then I will let Tim comment as well.

The problem has been recognised now that we have a lot of catching up to do. If you take Government policy now, the DCMS is saying very much that the UK has to now embark on a decade of investment in full fibre and 5G and it needs to create a competitive market to do that. It is very much part of the Government's policy now to try to put that into place. Ofcom itself has recognised in its own strategic review that it now needs to change and now needs to shift towards encouraging investment in full fibre rather than relying on service competition on BT's legacy copper infrastructure. In doing so, it has suggested that there should be a third infrastructure provider that becomes established to provide an alternative to Openreach infrastructure across at least 40% of the UK's premises.

The direction is starting to move and we are recognising the problem but only recently. These are decisions and announcements that have come in place only in the last 12 months. Mobilising investment and construction programmes to put in place new digital infrastructure does not happen overnight and so it is going to be a decade of investment. That is the reality.

**Andrew Dismore AM:** It sounds like a good bet for an investor, though.

**Tim Stranack (Business Development Director, Community Fibre):** That is a good point because the private investment market has largely now woken up to the fibre investment model because it has been doing it throughout Europe and the rest of the world. The opportunity now for investors is less risky than it was when they first started doing it in other places in Europe and, therefore, we no longer have an issue with obtaining the private investment required to roll out the fibre.

Just picking up on Mark's point, the regulatory and policy framework to enable that infrastructure competition is now available. As Mark said, only recently we had the [Communications] (Access to Infrastructure) Regulations in the summer [2016] and the Electronic Communication Code is part of the Digital Economy Bill, which should be passed in the next month or so. All of those regulatory pieces are now in place. What we need to do is to educate Londoners and, indeed, educate the landowners of London that it is now time to put fibre into their buildings.

Just to come back to Tony's [Devenish AM] question, we can do a large proportion of London's properties with hundreds of millions as opposed to billions [of pounds], just to answer that question.

**Tony Devenish AM:** I just wanted to ask Jeremy if he knows whether the Mayor is going to look at what the DCMS is doing and business and come up with a strategy for London. Does he see it as part of his job to come

up with a strategy with numbers so that we know where we are now, in his view, and where we will be in 2020, for example?

**Jeremy Skinner (Senior Manager - Growth & Enterprise, Greater London Authority):** The Mayor certainly wants to develop his own perspective on what London and what London businesses need and want, but we have to recognise that it is a regulated, nationalised, competitive market and so the Mayor of London's influence will tend to be within the usual ambit of the Mayor's influence: co-ordinating activities, providing information to the markets, encouragement and exhortation and those sorts of actions, which can be highly effective in the right circumstances. Setting ourselves apart from the rest of the country and expecting the market to follow will not necessarily be a successful strategy, but we can set the expectations and standards with the Mayor as a champion for business. Where we feel that stakeholders are not performing adequately, as we have begun to hear today, the Mayor will certainly want to take a stand in all of those respects: the provision of data and so on. I do not know if you want to add to that.

**Sara Kelly (Senior Policy Officer - Science and Technology, Greater London Authority):** Yes. Building on what Tim was saying, now that the investment is starting to flow, the GLA's role is to make it as easy as possible for that investment to happen, working with local authorities to make sure that providers know from the outset exactly what process they are going to have to go through in order to make that installation. They will know that they need to speak to these people and this is how long it is going to take so that they can factor that into their investment programmes as well. That is where the Mayor really has a role in terms of establishing best practice, sharing it and making sure that it is as easy as possible for these investments to happen.

**Tony Devenish AM:** Thank you.

**Fiona Twycross AM:** At the risk of extending this section longer, I just wondered. I have been sent a link to the DCMS launch of its new digital strategy today. It is very timely but, unfortunately, not early enough for us to analyse all of the things before the meeting. It suggests that the Government is planning to invest over £1 billion in digital infrastructure. It sounds like a lot of money until you start thinking about the costs.

How much of a difference would that amount of money make? Do we know where it is going to go yet? Has the GLA been inputting into some of the business broadband consultations that the Government has been having? Have we been taking an active role in saying what should happen in London?

**Jeremy Skinner (Senior Manager - Growth & Enterprise, Greater London Authority):** Yes. Sara led on not just providing the GLA's response but also co-ordinating the response across various local authorities in London, a cross-party grouping. We have been reading about the digital strategy only over the last 24 hours or so and so we have not been able to see any official documentation.

As part of the work we did on the London Infrastructure Plan in 2014, one thing that really struck me was how relatively low the cost of providing excellent internet connectivity is compared to other forms of infrastructure. Typically, we found it being about 1% of the total cost of London's infrastructure requirements, which, compared to the overall demand that we are hearing from businesses that this is absolutely crucial to their operations, is a relatively small price to pay. Therefore, £1 billion will go quite some way. As ever, it is never quite enough.

**Fiona Twycross AM:** It depends on how much of it comes to London as well.

**Jeremy Skinner (Senior Manager - Growth & Enterprise, Greater London Authority):** Indeed.

**Sara Kelly (Senior Policy Officer - Science and Technology, Greater London Authority):** We understand that the DCMS will be making announcements on that as part of the Budget.

**Fiona Twycross AM:** Great. Thank you.

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** Can I just provide a bit of clarity on that and how it works? The number is £1.1 billion, it splits into £400 million into what they call the Digital Infrastructure Investment Fund. That is a third party-managed fund for investment into competitive infrastructure providers to bring competition to Openreach and Virgin Media. The fund has to be match-funded by commercial banks and so the £400 million becomes at £800 million and could be more.

In addition to that, there is £740 million into a number of measures, one of those being the proposed rate relief on investment in new fibre networks. That is a five-year reduction on business rates, which is very topical at the moment.

The other piece is to invest in local schemes that encourage local full fibre. That is what we might see some further clarity on in the Budget. There is also a desire for some 5G testbeds as part of that.

It is generally in support of full fibre/5G. It could be greater than £1 billion overall if part of it is match-funded and so we anticipate that it will be at least a £1.5 billion stimulus. Part of it is there for the commercial sector to access and companies like Tim's company and my company to access some of those funds and half of it will come out to the local authorities to promote investment into their regions. That is the part that is probably most important to the GLA.

**Tony Devenish AM:** I am delighted to ask my colleague on Westminster Council, Jonathan, this question. Why did you launch the campaign to improve broadband and digital connectivity? What barriers did you encounter? What actions have you been taking to improve connectivity in Westminster? What level, broadly, of investment did it take?

**Cllr Jonathan Glanz (Lead Member for Broadband and Connectivity, Westminster City Council):** We launched the campaign because so many of our residents and businesses find that they have insufficient connectivity to live 21st-century lives. Everybody accepts now that superfast and, indeed, ultrafast connectivity is an essential utility both for businesses to run their businesses and also for people to be able to enjoy what life offers. There are many residents in Westminster who cannot watch Netflix or iPlayer because they do not have sufficient connectivity. There are many small businesses that find themselves in a situation where they cannot run their business and cannot compete properly because the offering they have available to them at an affordable price is insufficient to meet their current needs, never mind their future and prospective needs.

Just to pick up on the point that I made earlier on, there is very much in Westminster a two-tier market between large businesses, which have leased lines and are able to make their own arrangements, and the rest. BT, the historic infrastructure provider, has taken the view that residential connectivity, which might be single-figure Mbps on the download and 0.3 Mbps on the upload, is sufficient for people other than those with very large requirements. We differ with BT on that view and we have tried very hard to get it to accept that small businesses need much better connectivity and they need it at a price that they can afford.

Looking at Westminster, everybody assumes because it is at the centre of our great city that it will have fantastic connectivity, but in the recent *BroadBad* report we came in at 635th out of 650 constituencies

nationally. The level of connectivity is clearly, on any reasonable comparison, unacceptably low when you consider that within Westminster we have such a large percentage of creative industries, many thousands of small businesses and the largest number of start-up businesses. We have various types of businesses that have a reasonable expectation that they can run their businesses with sufficient connectivity and they are just not being catered for.

We have tried very hard to do two things. One is to put pressure on the incumbent provider, Openreach, to upgrade those facilities to a reasonable standard and then, alongside that, to encourage other people to come in and fill the gap that Openreach has allowed to be created by not upgrading to fibre at all. There are still four exchanges in Westminster that are not fibre-enabled and Openreach is still advocating that we go to a system that relies on copper for the last element of connectivity as being enough for the future.

Luckily, the market has seen the gap and is coming in now to fill the vacuum that has been left behind. We are at risk now of moving from famine to feast as we have huge numbers of interested parties now saying that they would like to provide what we want, which is fibre to the premises (FTTP) on a cost-effective basis and that is across the city, across all types of businesses and residential areas, to provide that connectivity that is needed. We anticipate that within months, certainly within a year or so, many of those gaps will have been filled and we are encouraging people to do that. Basically, we are 'digital tarts'. We will go with anybody who will provide those services on a cost-effective basis for those who need it in Westminster.

To give you some idea of how this two-tier market operates, we have Sony and Warner Brothers who have huge connectivity for their operations across the world, but then we have small creative industries in and around Soho who still find it quicker to download something to a DVD and walk it around to somebody else in Soho than send it across their current connection. That gives you some measure of just how bad it is.

That is why we launched it. We had great demand from businesses and residents. Residents who come to live in Westminster from other great cities across the world find it absolutely incredible that they cannot do what they can do in Seoul, Singapore, Sydney or New York and just have their connection put in as they move in at a level that will allow them to do everything they need to do, with sufficient capacity for the growth that we know is coming down the line with the 'internet of things' and with the fact that we have seen exponential growth in data usage and have a reasonable expectation that that growth is going to continue.

We have touched on some of the problems. We have done our bit in relation to wayleaves both in terms of participating in the process of agreeing a standard form of wayleave and going further than that by agreeing those wayleaves and using them on our own buildings that we have within the Westminster portfolio. We are working with the utility companies in terms of civil installation when fibre needs to be put into the street to look at how we can reduce the delays in order to speed things up.

Even though we were told by Openreach that there was no demand from SMEs, we had the highest take-up of the voucher scheme that was previously offered and we have introduced our own voucher scheme with £1,000 per business as opposed to £3,000 because some of the costs have come down and that was what was available. We anticipate a further boost to SMEs in particular to be able to create connectivity and to stimulate that competition and availability of FTTP.

We have had some issues around state aid - and others may speak to that later on - because we have been very keen to ensure that we do not get left behind. Those issues have been resolved and that is why I say we offer a facilitative role to anybody and everybody who wants to come along and provide these services. That has not necessarily meant that we have had to invest a huge amount of money. As I said, the role, Tony

[Devenish AM], is one to facilitate rather than to undertake the investment ourselves, but we do encourage others to invest.

We have recently seen the great estates, particularly the Grosvenor Estate, take the lead in relation to installing their own ducting systems and we would encourage others to do that. They, again, pick up from where the incumbent has failed to put in ducting and make it available on a commercial basis to anybody who then wishes to provide a service through them. That is a flavour of what we are doing.

**Tony Devenish AM:** Thank you.

**Cllr Jonathan Glanz (Lead Member for Broadband and Connectivity, Westminster City Council):** You are welcome.

**Andrew Dismore AM:** That was all very interesting. I was just wondering how this is going to roll out in parts of the north of Westminster - Queen's Park, Harrow Road and Westbourne, my old council Board from many years ago - and in particular how this is going to work on some of the housing estates like the Mozart, the Brunel or, in my old ward, the Brindley.

**Cllr Jonathan Glanz (Lead Member for Broadband and Connectivity, Westminster City Council):** That is a very good question. I know that Tim will speak to some of the specifics of how Westminster is looking at providing FTTP connectivity across all of its estates. We have a number already connected and in process and we have signed off on wayleaves for many of the others.

Queen's Park is slightly peculiar inasmuch as it has the residual legacy of what was Westminster Cable. Westminster Cable was bought out, as you recall, by BT and closed down. The infrastructure, which was an analogue system, has now been passed to Virgin and Virgin is in the process of upgrading that. It is a coaxial system as opposed to pure fibre, but it does provide connection speeds of about 200Mbps and covers much of Queen's Park. That is one of the opportunities that we are pursuing.

In addition to that, as I have said, we are putting fibre into all of our owned properties managed by CityWest Homes and that is throughout the whole city, including areas in and around Queen's Park.

**Tim Stranack (Business Development Director, Community Fibre):** I am pleased to say that we have signed wayleaves this week with Westminster, which will enable us to bring fibre to Warwick, Brindley, Hallfield and Lisson Green. Church Street we are still working on; there is some redevelopment going in there. In total, on eight of the biggest estates in Westminster we will now be rolling out full fibre connectivity, giving those residents gigabit internet access, upload and download.

What we want to do is to be able to do the same with the surrounding inner London boroughs and indeed, probably in 2018, then rolling out to outer London boroughs as well --

**Andrew Dismore AM:** That was going to be my next question to Jonathan and to Tim. This all sounds very impressive and, actually, relatively good from the public purse point of view, from what you are saying, Jonathan. What are the barriers, Jonathan and/or Tim, to taking it from my old council ward in Westbourne and rolling it out in my old parliamentary constituency up in Grahame Park in Barnet, for example? What are the barriers there? Can that be done? I can see that you could move it out into Camden relatively easily - from where you are it is a particular terminus - but how do you get it further out?

**Tim Stranack (Business Development Director, Community Fibre):** It is interesting that you picked up on Grahame Park. We have signed a wayleave agreement with Genesis Housing Association and Grahame Park is one of the developments we are particularly looking at with them at the moment. Fibre will be coming to Grahame Park very soon.

However, the key to this is, as I said earlier, the regulatory framework is in place but what now need to do is to educate the other local boroughs that full fibre is available and, if they can give us the permission to put the fibre into their buildings, we are more than happy and we have the investment to do that. That will enable us to roll out to thousands and thousands of properties over the next two or three years.

**Andrew Dismore AM:** What is your capacity to do that?

**Tim Stranack (Business Development Director, Community Fibre):** As I said, we now have significant investment and --

**Andrew Dismore AM:** You have the investment, but what is your actual physical capacity to enable you to roll out across London?

**Tim Stranack (Business Development Director, Community Fibre):** At the moment, we have been rolling out at about 1,000 properties per month. We can quickly scale that up through our supply chain to at least 10,000 properties per month.

**Andrew Dismore AM:** It is still quite a job to get across London.

**Tim Stranack (Business Development Director, Community Fibre):** I am sure that once we scale to 10,000, we can then go beyond that.

**Fiona Twycross AM:** That covered some of my questioning, but it is fine. It is all very interesting. I will come up with other questions instead.

I just wondered. We have talked a bit about comparisons to other cities and the Northern Powerhouse has been mentioned. We are particularly interested in, Mark and Tim, your perspectives on what London could learn from examples in the UK and abroad. Rather than how we compare, are there things that we should be doing here that would be of benefit?

**Tim Stranack (Business Development Director, Community Fibre):** Mark, you are more experienced in that, I think.

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** I am more experienced with the other cities in the UK.

One of the key things for us when we look at our investments is, firstly, the role that local government and local authorities can play in supporting commercial rollouts by using new fibre networks themselves. We promote a model where all local authority buildings, whether they are schools, libraries, the council sites themselves, closed-circuit television (CCTV) cameras and a number of different things, are all potential points on a network and become fibre-enabled through a method of aggregation of public-sector demand, effectively. It is using the local authority itself to become an anchor tenant. That de-risks the commercial investment in the fibre infrastructure and it enables the fibre infrastructure to go much broader.

I will give you an example of our project in Edinburgh. Working with a business internet service provider (ISP) and also the local authority, we secured a commitment to connect over 500 buildings to fibre infrastructure. Those 500 buildings were distributed right through the city of Edinburgh. If you are connecting to schools, for example, they are going to be in residential areas. General practitioner surgeries are very similar. We deployed in a nine-month period a new backbone infrastructure of 150 kilometres of new ducts and fibre infrastructure throughout Edinburgh and connected those 500 locations. We now have a very healthy cash-flowing infrastructure, which we operate as a pure open-access infrastructure for other providers to use. We do not provide retail services and so we are a competitor to Openreach. That becomes the foundation, then, for expansion to the SMEs. We are just embarking on a programme now to build out to all of the business parks to get the SMEs connected and then working with the consumer service providers to expand that to residential homes.

In York, we are most advanced with that. We are now taking full fibre to the residential homes in conjunction with Sky and TalkTalk, again providing 1Gb symmetrical broadband to all homes. York as a city, as an example, now has full fibre going into the all of the homes across the city. It has the businesses already capable of full fibre connections --

**Fiona Twycross AM:** Every single home in York now has full fibre?

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** Correct, yes. We have currently constructed to about 15,000 homes. We have just announced the next phase and the intention is to take full fibre to every home in York. The infrastructure that we have put in place in our cities is designed to do that. Again, it is working initially with the local authority to see the benefits of the inward investment that the private sector can make but where the local authorities themselves can benefit from the full fibre connections for their own use and, in doing so, encourage that investment by de-risking the investment plan.

That is also state aid friendly. There is no state aid in that. Again, just giving another comparison of the types of projects we do, in Peterborough we provided a 20-year right-of-use of the fibre infrastructure to the local authority. It is connected to all of their buildings over a 20-year period, which generated a 50% saving to staying on the incumbent supplier, which was previously Openreach. That 50% saving was a benefit of that. That commitment has enabled our investment to flow and now we are in the same process of connecting to all of the businesses, providing fibre connectivity there and opening up the infrastructure to all service providers. We are now just starting our plans to start the expansion to the residential homes.

**Fiona Twycross AM:** What is the timescale for that?

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** A typical project to get the initial core infrastructure - what we call the 'backbone' or 'spine' infrastructure, as the DCMS was calling it in its recent call for input on its consultation - can be deployed in a nine-month to 12-month period. For example, in Edinburgh, we deployed it in nine months. That is one of the more difficult cities in the UK to deploy that type of infrastructure. As you then expand out to all homes, there is somewhere in the region of an 18-month to 24-month time period to do the construction into all homes. A city the size of York can really support only one or two construction gangs because of its smaller size and you can get a run-rate of approximately 5,000 homes per month in that one location. In the bigger cities, you can have multiple construction gangs in different parts because they are not going to be tripping up on each other and, therefore, can go at a much faster rate in terms of numbers of homes. You would be thinking of approximately a 24-month period to get fibre to everything.

**Fiona Twycross AM:** That is quite impressive. You use CCTV for that as well and so it is schools but also



other bits of infrastructure that the council would have, which would include CCTV, then?

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** Correct, anything that has a fixed broadband or data connection like CCTV. It could also extend to traffic control systems, environmental systems, public Wi-Fi. Again, with Peterborough, for example, we are now putting 200 connections into the CCTV with a view to enabling those for 5G. That is fibre-enabled street furniture therefore creating an infrastructure ready for 5G rollout, as an example.

We look at it in terms of anything that requires a digital connection has a benefit of being connected to fibre. We look to aggregate all of that and then undertake a commercial deal structure with the local authority that makes that worthwhile as a win-win for both the local authority and us to make the investment. That is the model that we have been rolling out and we are now just touching 42 towns and cities across the UK so far with that model.

**Fiona Twycross AM:** One of the things that we have had repeatedly said to us - this is not the first session that we have had in the Committee about digital infrastructure - has been about the issues with state aid. You have pointed out that this does not come under state aid because it has such strong benefits for the providing local authority. Presumably, there would be nothing to stop this being rolled out to CCTV on the transport network, for example, which would have pretty good coverage in London?

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** Correct. There would be no reason to stop that.

The reason it does not trigger state aid because you are spending the money anyway. You are spending it on something --

**Fiona Twycross AM:** You are also saving money.

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** Correct.

**Fiona Twycross AM:** If you are saving money, it is different. Is this something that has been considered, Sara?

**Sara Kelly (Senior Policy Officer - Science and Technology, Greater London Authority):** Yes, and some local authorities have been --

**Fiona Twycross AM:** I know that this is going on to Andrew's [Dismore AM] question. It was not a retributive step. It was just relevant to this point.

**Sara Kelly (Senior Policy Officer - Science and Technology, Greater London Authority):** Absolutely. Some local authorities are exploring using their CCTV networks and other assets that they can install infrastructure on to improve the wider availability of fibre connectivity. What we need to do more of as part of our work going forward is sharing some of that information because there is some misunderstanding in some local authorities as to whether that would constitute state aid and whether aggregating demand means that they would then have to do a tender for the availability in that area. Building on that work is what we need to do and share amongst local authorities, "These are options for you in terms of improving connectivity and this is OK. Do not worry about state aid".

**Fiona Twycross AM:** Yes, because if you think about somewhere like Rotherhithe, it is a stone's throw away but has some of the worst connectivity in the whole of the UK. They have repeatedly come up against people saying, "State aid, state aid, state aid", and so that would be the sort of solution for an area like that, then, potentially?

**Sara Kelly (Senior Policy Officer - Science and Technology, Greater London Authority):** Absolutely, and working with Southwark to ensure that they are able to welcome a wide variety of providers into their area and a wide variety of solutions by giving them all of the options that they can explore to do that.

**Tim Stranack (Business Development Director, Community Fibre):** One of the things that can slow that down is the procurement process that has to be gone through in order for the local authority to spend that public money. It can be run as efficiently as possible, but it can slow things down sometimes.

**Sara Kelly (Senior Policy Officer - Science and Technology, Greater London Authority):** Yes, and building on that and introducing local authorities to each other when they have done that so that they can take that best practice and --

**Tim Stranack (Business Development Director, Community Fibre):** The lessons learned.

**Sara Kelly (Senior Policy Officer - Science and Technology, Greater London Authority):** Exactly.

**Tim Stranack (Business Development Director, Community Fibre):** Just picking up on one other point that Mark made and coming back to the question earlier, the function of speed and how quickly we can roll out is purely down to the number of gangs that we deploy. If we want to roll out faster, it is just a matter of deploying more gangs.

**Andrew Dismore AM:** Where do you get the staff from? The European Union?

**Tim Stranack (Business Development Director, Community Fibre):** They are there. Interestingly, there are a lot of subcontractors out there who were involved in rolling out digital television cabling systems and have recently cabled up a lot of these blocks that we are now trying to cable up and so they are familiar with the blocks. We need to give them a bit of training on fibre but it is not very different. The resource is there; it is just a factor of how many gangs we deploy.

**Andrew Dismore AM:** Just following up on Fiona's point about TfL, we control the red routes with all of the traffic control systems on all of the main arteries in and out of London. Has TfL looked at this in terms of wiring up the traffic lights and the CCTV cameras, the ones that catch people in the yellow boxes and all that sort of thing? Have we looked at wiring up the main arteries? If we wire up the main arteries, it would presumably make spreading it out further that much easier.

**Sara Kelly (Senior Policy Officer - Science and Technology, Greater London Authority):** I know that the commercial team within TfL has a lot of proposals that they are developing along these lines. It is a very large network and so it would require a very large procurement process and consideration. I know that they do have intentions to use its assets to improve connectivity.

**Andrew Dismore AM:** That sounds a bit slow, does it not, compared to what we were talking about over here?

**Jeremy Skinner (Senior Manager - Growth & Enterprise, Greater London Authority):** It is for TfL to comment, but there is complexity with a much larger network compared to cities the size of Peterborough and York.

**Fiona Twycross AM:** The advantage of the large network is that it would open everything up massively and so it would seem like a --

**Jeremy Skinner (Senior Manager - Growth & Enterprise, Greater London Authority):** Of course.

**Fiona Twycross AM:** Even though there are complex things - and, obviously, we would not want anybody not to do the proper procurement processes - it would seem like a really good solution to a problem that we have been discussing ever since I have been on the Assembly and clearly, from the state of the map, is still an issue for large parts of inner London.

**Andrew Dismore AM:** And East London.

**Fiona Twycross AM:** Yes, and East London. There are massive parts. There are bits of it that are green open space, but that is fascinating. That is really interesting.

We have gone through quite a lot of areas on what the key barriers are to better connectivity already and so, unless anybody has anything else to add, I will not ask about that.

I was going to ask about state aid because it is something that has been quoted back to us in various fora previously, but I just wanted to ask about how much of a driver the Universal Service Obligation (USO) would be and who is actually responsible. If we have a USO, which [Rt Hon] David Cameron [MP former Prime Minister] suggested would be in place by 2020, who is then responsible when you do not have a monopoly provider for that? Is it going to be delivered?

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** This is a slightly knotty and complex issue, but it is one that just needs a change of thinking and philosophy, in a way. Because BT has been the previous state-owned monopoly provider, the USO has always been on BT to provide as part of its licence conditions and so on.

As we move, though, to a USO for broadband, there is clearly an opportunity for providers other than BT to be providing that service capability. Our view on this one is very much the view that rather than creating a funding mechanism that creates funding for BT, we have to create funding mechanisms under the USO where, for example, the end customer can choose a service provider and get a connection in and do it that way, rather than the view that the only provider under the USO is the incumbent operator, BT. That would have encouraged a more competitive market.

That would be our view. It is not something we are particularly close to ourselves as a provider but certainly the opportunity is there through maybe some simple changes to the way historical USOs worked to make it operate in a competitive environment. It would be a beneficial opportunity.

**Fiona Twycross AM:** Is it deliverable by 2020, given that even if you go for the radical option of connecting the whole city through state infrastructure it takes two years from the end of the procurement process?

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** My main concern and criticism of the

USO is the fact that it set a very low benchmark. It is a 10Mb/s USO. Is 10Mb/s deliverable by 2020? Probably. Our forecast would say that for most customer connections if, as Tim said, data growth keeps doubling every two years, by 2020 1Gb/s will be standard. We predict that by 2022 1Gb/s access will be fairly standard, in which case a USO of 10Mb/s might not be particularly appropriate.

**Fiona Twycross AM:** It would not meet the consumer test of streaming things at the speed at which people would expect to get, then?

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** You are going to struggle. If you start moving towards high definition television and virtual reality or if you start looking at businesses that have much greater use of cloud computing for efficiencies, all of those will put greater stress. While a USO for broadband is probably a good thing and choosing where to set the speed is probably quite political, 10Mb/s is setting it quite low.

**Tim Stranack (Business Development Director, Community Fibre):** Definitely for London. London's ambition needs to be to be gigabit connected by 2020, really.

**Fiona Twycross AM:** It was a mayoral manifesto commitment, was it not? Yes.

**Tim Stranack (Business Development Director, Community Fibre):** Yes. Just picking up on your state aid point, state aid applies only when public money needs to be put in to invest in infrastructure. If there is no public money in, there is no state aid issue. Similarly, in our model we do not ask the local authority to buy anything from us. We roll out the infrastructure at no cost to the public whatsoever and so there is no procurement process to go through as well. All we need is that permission to move ahead.

**Fiona Twycross AM:** Presumably the USO is one step back from it being formally defined as a utility. How much of an advantage would it be if it was formally defined as a utility, given your comments about needing to get the right level of what the delivery should be?

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** The problem I have a little bit with defining broadband as a utility is that most people consider utility markets with one utility infrastructure provider. Communications as a sector does not operate like that and it particularly does not operate like that in London. London - this might sound slightly strange but in a regulatory sense, London is the only deregulated market. It is deregulated because it is considered to be competitive. That is in certain segments. Across the river here, you are into the business connectivity market, providing very expensive leased line circuits to big office buildings. There is a lot of competition. There are a lot of fibre providers that do that.

In its broader sense, getting it to the SMEs and getting it to residential homes, there is a risk of thinking in terms of regulated utilities because telecommunications infrastructure today does not work that way. The objective of the regulator is to reduce regulation, not increase regulation. It wants to encourage healthy competition and supply of infrastructure and supply of services, and encourage the private sector to do that. There is just a risk that if you put a utility hat on, you start to go down the way of thinking that Openreach is the only alternative and you end up with a copper infrastructure that will remain in place for much longer. That is the risk.

**Fiona Twycross AM:** Thank you.

**Andrew Dismore AM:** Just following on from what Tim said about state aid, supposing TfL said to you, "We want to put fibre all up the A41 and then link up our traffic management systems" --

**Fiona Twycross AM:** And the Tube network.

**Andrew Dismore AM:** I am just taking the A41. How would you get paid?

**Tim Stranack (Business Development Director, Community Fibre):** Yes. At the moment we do not sell to corporates or big businesses, we sell to residential customers and they pay us for the internet service that we provide. That is how we get paid. At the moment we probably would not enter into a procurement process with TfL because it would suck in far too much of our time and slow us down from getting fibre to the residents.

**Andrew Dismore AM:** Mark, do you have any thoughts about that?

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** Our take on this one - and it comes on to the questioning around the priorities of a Chief Digital Officer (CDO) - is that the problem with a lot of communications infrastructure or fibre infrastructure is that it is built in silos. It is built in silos for a specific use. TfL might have a fibre infrastructure specific for its use. Big banks might build infrastructure specifically for their use. There is a lot of infrastructure deployed but it is deployed in silos. The opportunity to think about it not in silos but as one infrastructure is what needs to be encouraged.

I give another example, one of our projects. We acquired an infrastructure from Coventry City Council that was built for its CCTV infrastructure and to connect to its counter-buildings and schools. It was sitting there as a standalone fibre infrastructure, covering a large extent, but being owned by the local authority prevented it from being exploited for broader commercial use. Good infrastructure, very capable, lots of capacity, but a big white elephant from a broader perspective.

There is an opportunity to look at those infrastructures and say, "Is there a way of transitioning those or providing commercial access to those infrastructures in a way which then can be part of a bigger digital strategy?" That is part of our programme. When we enter into any location, we look at the opportunity to work with existing infrastructure providers. Sometimes that may mean that the infrastructure transitions to us on a sale and lease back, sometimes it means we get access to the infrastructure to deploy our fibre. There can be different models for that. It starts with a view of, "Stop thinking in silos. Start looking at who has a need for digital infrastructure and fibre infrastructure. Is there a more coherent plan of joining those dots together for greater commercial benefit?"

**Andrew Dismore AM:** I do not know if this works but let us go back to my A41 example. If TfL says, "We want to wire up all the traffic lights, speed cameras and everything else along the A41", and you have to dig up the road to put the fibre down, presumably when you dig up the road you could put your own fibres down for commercial use at the same time.

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** That could be one model. Another model would say that rather than TfL putting it in itself, a commercial provider puts it in and provides the fibre service to TfL.

**Andrew Dismore AM:** Then TfL pays rent on each traffic light.

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** Rather than paying the big capital cost of building, it gets a lower cost of renting just the capacity it needs. Then the commercial provider has an anchor tenant on that infrastructure and then can expand it for broader commercial use.

**Andrew Dismore AM:** There is no question about security?

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** In fibre networks, there are normally no issues of security. We - and it will be the same for Tim and any infrastructure builder - have to comply with code powers and all the requirements for operating utility infrastructure. There are standards in place to ensure that these are provided at an appropriate, fit-for-purpose level with appropriate security and so on. Anyone who works on the infrastructure has to be appropriately accredited and so. No problem.

**Andrew Dismore AM:** Taking that on board and going back to Tim's point - he likes to connect up houses and charge them for that - supposing TfL said, "Let us wire up along Mark's model, where the private sector will wire it up and we will rent it, the A406, the A41, the A1 and every other A road in London", how long would that take to do? Would it be a good thing to do and how much would it cost to do it, bearing in mind that these are main arterial roads from which everything else seeds?

**Tim Stranack (Business Development Director, Community Fibre):** From our perspective - and this is perhaps one of the reasons why we are going to the outer London boroughs later - in order to cable up a housing area, we need what is called some backhaul fibre back to the main internet exchange in Docklands or wherever it may be. In central London there is a relatively competitive market for that because a lot of this fibre exists for these big offices out here and we can tap into that. As we get to outer London boroughs, less of that exists. If, for example, TfL had some of that fibre, which Mark [Collins] might be running, then we would be more than happy to do commercial negotiation and take some of that fibre.

**Andrew Dismore AM:** Supposing TfL took a positive decision and said, "We are going to bite the bullet. This is what we are going to do. We are going to wire all the main A roads", do we have the capacity to do that and is it a good thing to do, using Mark's model? Could you do that?

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** 'Capacity' in terms of construction capacity?

**Andrew Dismore AM:** Yes.

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** Yes, we would propose that we would do it.

**Andrew Dismore AM:** Yes. Supposing you did it, could you physically do it and how long would it take?

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** How long would it take? As I say, we put 150 kilometres of that type of infrastructure throughout Edinburgh in nine months. It is not rocket science. London does become a bit more complicated because of noticing and permitting and so on. The costs of that type of construction in London typically tend to be more expensive. There is a consideration there in terms of how the commercial sector would view that.

With a co-ordinated plan, one of the things that we always do is get very close relationships with the local authorities in terms of highways, planning and noticing so that we can undertake an efficient construction process. The physical construction itself does not take too long. Yes, it is another construction project, which means digging the roads or pavements up, which generally has some problems, but if you want to invest in the right type of digital infrastructure and put the capacity in place to make a city future-proof in that sense is something that has to be done.

Our view is that it can be done and certainly when we look at building that type of infrastructure we look at all of the demand areas. To address Tim's concern on backhaul, as we are building it, if there was a whole bunch of sites where Tim is looking to put infrastructure in to those multi-tenant buildings then we can provide the backhaul connections into those buildings. It is a standard part of what we do. We map all of the demand.

**Andrew Dismore AM:** Would, for example, TfL provide the critical mass you need to do it?

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** Potentially, yes. It comes down to how many connections --

**Andrew Dismore AM:** There are a lot of traffic lights in London.

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** There are a lot of traffic lights, yes.

**Andrew Dismore AM:** I have not said that you are going to do it yet. I am just speculating.

**Tim Stranack (Business Development Director, Community Fibre):** One thing I do not know: TfL may already have a duct network that is connecting up some of these assets and it may be possible to put the fibre through the existing ducts but that information is not readily available.

**Andrew Dismore AM:** Presumably, if Mark were to wire up all the red routes, you would be in there?

**Tim Stranack (Business Development Director, Community Fibre):** It would take me less than six months to cross a red route, which is what the last one took.

**Fiona Twycross AM:** Six months?

**Tim Stranack (Business Development Director, Community Fibre):** Yes.

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** That type of thinking is exactly the right type of thinking, in our view. How do you utilise and do some joined-up thinking between these different users of digital infrastructure to create fibre capacity that does connect to more?

**Andrew Dismore AM:** Going on to my next question, which is what the CDO's priorities are going to be and which Mark flagged up, presumably - I do not know how it would work - the Mayor could say, "We are going to take the initiative. We want to wire up along the red routes". That is something the Mayor could do without breaking the state aid rules and make it happen. The Mayor could do that, could he?

**Jeremy Skinner (Senior Manager - Growth & Enterprise, Greater London Authority):** Quite possibly. The role of the CDO, of course, is under discussion. There is a whole range of digital activity ranging from the foundational stuff, which is what we are talking about here, through to digital inclusion and supporting the tech industry more widely. The canvas on which this new role can play is absolutely vast. I would counsel a bit of caution. There is clearly a priority for this Committee in this discussion is to do that. Whether that would be the role for the CDO, I am not sure. Clearly it is going to be a role for the CDO to champion across the piece because without having those foundations in place, the digital economy is not going to grow very successfully very quickly. That is all I can say on that.

Just in terms of the network, clearly, TfL should be part of the discussion but I know that for instance when it

has been putting in the Cycle Superhighways it has been putting in the ducting to future-proof for whatever infrastructure needs are in future. There is some future-proofing going on with its works.

**Andrew Dismore AM:** We already have quite a large network of potential places where you just have to feed the wires through?

**Jeremy Skinner (Senior Manager - Growth & Enterprise, Greater London Authority):** Indeed.

**Navin Shah AM (Chair):** Can we just stop for a minute? We have pupils from Al-Falah Primary School from Hackney. You are very welcome to the Regeneration Committee meeting. We are looking at broadband connectivity in London, something which should help better mobile connections and better connections at home and businesses, and so on. We have guests who are here to give us their expert advice and we are the Assembly Members talking to them. You are very welcome to City Hall.

**Andrew Dismore AM:** Just going back to earlier discussions, the Government could do the same with the arterial motorways in and out of London.

**Cllr Jonathan Glanz (Lead Member for Broadband and Connectivity, Westminster City Council):** Let me just pick up on that. We have made reference to TfL on arterial roads but of course it also has a lot of underground assets that presumably could also provide routes for fibre trunking.

**Andrew Dismore AM:** That is what Fiona was asking about.

**Fiona Twycross AM:** I was going to come back to that. There were two points, really. One was, before we all get too excited and run off and go, "We have to have this, we have to have this, we have to have this" - which I suspect we will anyway - if we were to push for something like this to happen, would we genuinely be future-proofing? Because, if you think about technology, it has moved so fast.

How can we be confident that if we were to see a CDO come in and revolutionise what we have in London in a matter of years, which is what it sounds like could potentially be possible if everything fell into place, would we genuinely be future-proofing or would we just be catching up?

**Tim Stranack (Business Development Director, Community Fibre):** The fibre that we are putting in place, both of us, is the fastest medium for data transfer that has been invented or can possibly be invented. The only limitation is the boxes that you plug on to either end of it. Fibre is running at terabits or possibly petabits per second, I think, now, which is --

**Fiona Twycross AM:** Sorry, can you repeat that? At what speed?

**Tim Stranack (Business Development Director, Community Fibre):** Terabits, which is 1,000 gigabits, and petabits, which is 1,000 --

**Fiona Twycross AM:** It would be the equivalent to wiring a house, for example? The general principles of sending electricity through a house have not changed since it has been introduced while the actual wires that people have used might have changed over time.

**Tim Stranack (Business Development Director, Community Fibre):** More relevantly, it is the equivalent of a copper network that was put in 100 years ago. This fibre network that we would put in now is probably going to have a similar life.



**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** There is no known limitation yet on fibre. The other important piece is that we should not forget that all of the devices we use, almost ubiquitously, are wireless connected devices. Even if we are at home, we are connected onto Wi-Fi. When we are out, we are on 3G or 4G. Having ubiquitous coverage of fibre is important because of the wireless technology. As you move from 3G to 4G to 5G, as you get the increase in bandwidth across the air, the distance that that can travel becomes much smaller or shorter. Therefore, the number of cell points will need to increase substantially. As you move from 4G to 5G wireless services, there is anything from a 10 times increase in the number of cells to expectations that it could be a 100 or 1,000 times increase in the number of cells. All of those need to connect to fibre. Therefore, you need pretty much ubiquitous fibre infrastructure in place to support the future generation of mobile services.

**Fiona Twycross AM:** We want it on the roads and in the Tube as well, then, and everywhere else?

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** Yes, and on the buildings.

**Fiona Twycross AM:** Anywhere we can get it put, basically, in order to supply the Wi-Fi. On lampposts, yes. Everywhere.

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** If you look at what is happening in Asia and so on, where they are very advanced in fibre and in mobile services, the foundation for that is getting ubiquitous fibre in place. That is the foundation then to build everything on top, including the 4G and 5G.

**Fiona Twycross AM:** What you have done in Edinburgh, York or Coventry, for example? The councils there would provide that?

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** Correct, yes.

**Tony Devenish AM:** I was just going to suggest, Chair, that perhaps when the minutes come out maybe we can send them to Mike Brown [Commissioner] of TfL, maybe Graeme Craig [Commercial Development Director] of TfL and also the Deputy Mayor for Business, rather than wait for a CDO to be appointed or not be appointed. Our Committee can nudge them in a little way. I am sure it is something we would come up with time and time again, otherwise.

**Navin Shah AM (Chair):** Interesting thought. Certainly, we will take this forward.

**Andrew Dismore AM:** Going back to the CDO - we keep going off on interesting tangents - we have probably gone as far as we can on the infrastructure stuff. There is something else I wanted to ask about in relation to inclusion. This is not just for Jeremy; this is more general.

How do we deal with the question of inclusion, bearing in mind that housing tenure models in London are changing? We are moving increasingly toward rental, often relatively short-term rental. How do you cope with connectivity for people who are living in a rather more fluid housing market?

**Tim Stranack (Business Development Director, Community Fibre):** We serve a large number of social housing tenants now, some of whom --

**Andrew Dismore AM:** Social housing tenants are not the problem because they are, generally speaking, relatively stable. I am talking more about private sector, where the standard tenancy is six months.

**Tim Stranack (Business Development Director, Community Fibre):** Certainly in the Westminster buildings we provide, there is a mix of social housing tenants, buy-to-let and private rented tenants, probably about a third of which are turning over each year in some of the blocks that we provide into. We provide contracts that are just 30-day rolling contracts so people can switch on their internet when they arrive and switch off when they go. The fact that we build our own fibre network and therefore are not tied into some of the contractual pricing mechanisms or wholesale mechanisms from Openreach gives us the flexibility to create packages to give those tenants that flexibility of moving around.

**Andrew Dismore AM:** That is a good advertisement. Are you unique in that?

**Cllr Jonathan Glanz (Lead Member for Broadband and Connectivity, Westminster City Council):** Perhaps I could comment on that. Clearly with the private rental sector the expectation that when you move in you have this facility immediately available to you is very much baked in. Larger landlords are fiberizing up their buildings in a way that you can connect on the day you move in with the provider of your choice over that infrastructure. Effectively you are charged on what you use. There are differing commercial models. There may be a 30-day minimum but there would be ample opportunity to provide for a six-month or one-year letting. Then when the new tenants move in they may choose a different provider over that same infrastructure.

**Andrew Dismore AM:** Do Openreach and Virgin do that?

**Cllr Jonathan Glanz (Lead Member for Broadband and Connectivity, Westminster City Council):** Openreach, I do not believe currently provide that, but others do where they have fibered-up buildings.

**Sara Kelly (Senior Policy Officer - Science and Technology, Greater London Authority):** This is why it is so important that our role is about making it as easy as possible for a multiplicity of providers to roll out across London so that there is that choice and there is that variety of products. We know businesses, consumers, residents and everyone is going to have a product that is going to suit their needs and the requirements they need for their connectivity. If we make it as easy as possible to roll out whatever technology it is across the capital, it is one of our most vital roles in this.

**Andrew Dismore AM:** Going back to my original question on the CDO's priorities, is there anything else that we have not covered?

**Tim Stranack (Business Development Director, Community Fibre):** I am sure that you will recognise me saying that if he can help me to get the permissions, if he can talk to London boroughs to get the permissions to roll out our fibre, it would from my point of view be his key priority.

**Cllr Jonathan Glanz (Lead Member for Broadband and Connectivity, Westminster City Council):** If I could just come in, Andrew, what we have heard is that there is a mosaic of people who you have to deal with. Part of the role for such an officer could be to ensure that best practice is clearly identified and that we do not find that with other local authorities we are going through exactly the same process that local authorities who have perhaps been early adopters on this have done. That there is a set of documents, saying, "You will not be taking inappropriate risk if you take these because they have been through a very robust process of review".

**Andrew Dismore AM:** Tim and Mark, going back to earlier, have you been in contact with all London boroughs? Have you found some more co-operative than others?

**Tim Stranack (Business Development Director, Community Fibre):** We are mainly focused on the inner London boroughs at the moment but I have spoken to a number of outer London boroughs. As I have said, it can be difficult to find out who is the right person to talk to. I need to look at the site to see who the key contacts are. I was not aware of that resource and so I will be looking at the toolkit.

Yes, some boroughs understand this and are easier to work with. My biggest barrier is that some boroughs simply do not understand that not only is there benefit in getting fibre rolled out but they have an obligation to allow this fibre to be rolled out onto their premises. It is just educating them as to what the legislation and the regulations say.

**Andrew Dismore AM:** Maybe the Mayor should host a thing up in the London Living Room for London boroughs and get you guys along to come and explain how it should be done.

**Tim Stranack (Business Development Director, Community Fibre):** We would love to do that.

**Andrew Dismore AM:** I am sure you would, yes. Jonathan [Glanz] can give a good case study.

**Tim Stranack (Business Development Director, Community Fibre):** In saying that, we have a demonstration centre in Pimlico where you can see how fast gigabit fibre is and all Assembly Members are welcome to come there and have a look at it.

**Andrew Dismore AM:** That would be interesting. We could set a visit up. That would be good.

I suppose the last question from me is probably self-evident. Where should we be in five years' time to make us globally competitive post Brexit?

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** Five years' time takes us to what, 2022? We have promoted very much to the DCMS that it needs to be thinking about an 80% FTTP target across the country by 2025 and so, by 2022, we need to be a long way on that journey. That is quite key. Having 5G in place and underway by then is important. That is going to require a competitive landscape for mobile operators. There are some risks, for example, in spectrum options due to the dominance of one of two players. There should be a competitive market for 5G. There is a voice of opinion that potentially a Digital Strategy Officer may want to play there.

The other piece is an important one along the journey is to remove the confusion and the fog in the market about what fibre-optic broadband is. The use of fibre-optic broadband has been polluted by those who use BT's copper to deliver broadband and then call it fibre-optic broadband. All of the superfast broadband providers are guilty of that and that has been promoted by the Advertising Standards Authority (ASA) in some ways. There needs to be clarity. If we want to move towards encouragement for real fibre, true fibre, and not to continue to use souped-up copper and call it 'fibre', there needs to be some clarity around that point. The Government is quite keen on that but needs to see a bit of support to push that through with the ASA. That would help.

**Andrew Dismore AM:** The ASA has allowed people to say it is fibre when it is not?

**Mark Collins (Director of Strategy & Public Affairs, CityFibre):** Correct. The reason it has allowed it is the view that if everyone says it, then it is OK. Everyone now says, "This copper is fibre". If you are a user, you are generally confused. Going back to the question of landlords, they may think they have the best fibre connected in the apartment they are renting but actually it is on very slow copper.

**Tim Stranack (Business Development Director, Community Fibre):** It is not just confusion; it drives a whole load of disappointment. When people think they have a fibre connection and it only delivers half of what they said it was going to deliver because of the piece of copper, it causes us huge complications in educating residents to say, "No, this is full fibre and this is different. You will get the speeds that we tell you that you are going to get". I completely agree with Mark on that point.

The ambition to have 80% FTTP within London by 2022 is realistic, dependent on probably two things. One of those is making those ducts that already exist in the ground available, and in particular Openreach's ducts available. That is the regulations introduced in the middle of last year. They are available. There is a product out there. It is very complicated for us to use and they make it somewhat difficult. It is something Ofcom is working on at the moment, making those ducts available so we do not have to dig up the streets and we can put the fibre through some of the existing ducts. That will drive how quickly we can move. I will reiterate again the second point: just educate landowners that this is something that they need to do.

**Shaun Bailey AM (Deputy Chairman):** It is more of an enquiry. It sounds to me like 5G needs a good infrastructure and we need to do this stuff with all of the new street furniture that we saw on our visit and all of these things that need to be attached to lampposts and stuff. Is planning going to be the thing that stops us getting to 5G? When we spoke to the City of London, they said that they had many complicated meetings about attaching things to lampposts at a certain height and all the rest of that. Two things strike me. This web of fibre, what Andrew is talking about with TfL and so on, sounds like it is necessary. If that does not happen, if we do not open up the ducts, we will never get 5G. The second part of this for me is how easy it is for you to attach these things to the lampposts to build this grid or this network to make 5G work.

**Cllr Jonathan Glanz (Lead Member for Broadband and Connectivity, Westminster City Council):** There are a few things there. First, certainly, reforms on planning to make the implementation of digital technology simpler and easier are important. That has in some ways been addressed in the Digital Economy Bill. That has looked at some aspects of that but that is a continuing process as to how we can refine planning to make it easier. When you are talking about putting boxes on top of lampposts, the other piece to remember is that there is a power component to that in addition to the fibre component. Some of that might be available because there is power already to the lamppost but a lot of street furniture does not necessarily have appropriate power. There is a power component as well as a fibre component.

The other piece is that it is not necessarily saying that all the lampposts are in the right places or are suitable. That needs to be supplemented with the delivery of new street furniture but obviously that should be done in a very sympathetic way. We do not just want lots of ugly poles everywhere. There needs to be a way to utilise existing infrastructure in a way which is suitable, which may go beyond lampposts. That might be at the side of buildings. It might be encouraging more people to be participating with the physical assets that they have to deliver 5G. It is not just lampposts. There are lots of other types of infrastructure that could be used, whether that is working with some of the advertising companies, JCDecaux and so on, that have a lot of advertising hoardings around, whether it is private landlords to encourage connectivity to their buildings. All of that needs to come into the mix.

**Andrew Dismore AM:** On the power issue on a lamppost, can I just raise this with you? A lot of the lampposts around are now being converted to solar power to power the street lights, which is presumably enough power to power the street lights. Would that also generate enough power for what you would require for your 5G box, or are we already creating obsolete technology with what is going on with the lampposts?

**Cllr Jonathan Glanz (Lead Member for Broadband and Connectivity, Westminster City Council):** It

comes down to power storage, I suppose. Communications infrastructure needs to work 24/7. A lot of the street lights, for example, are collecting solar energy during the day while the lights are off. It is not using the power. Then it uses that over the evening. You have to consider that communications infrastructure is 24/7. It has to be running all the time.

**Andrew Dismore AM:** All these solar-powered things are not going to be sufficient for what you require?

**Cllr Jonathan Glanz (Lead Member for Broadband and Connectivity, Westminster City Council):** I do not know. It is a consideration to find out. I am not an expert in that area.

**Andrew Dismore AM:** With us, it needs to be found out pretty quickly because there is no point putting this stuff in if it is going to be no use for five years' time. On the face of it, it looks like a very good idea, to use solar power for the street lights, but if it turns out we are still going to have to wire them up for what you require anyway --

**Shaun Bailey AM (Deputy Chairman):** And the provision of batteries. Batteries are expensive, they are environmentally --

**Fiona Twycross AM:** That is interesting.

**Andrew Dismore AM:** That is something the Mayor or you need to look at pretty quickly.

**Cllr Jonathan Glanz (Lead Member for Broadband and Connectivity, Westminster City Council):** This is a classic case where I can see a role for the GLA convening a conference with all the local authorities, the various providers and ancillary advice.

**Andrew Dismore AM:** It is a technical issue. Either it is or it is not. People need to know.

**Cllr Jonathan Glanz (Lead Member for Broadband and Connectivity, Westminster City Council):** I agree, but that is one among many technical, regulatory and behavioural barriers to adopting 5G quickly. That is clearly something where City Hall can play a leading role in trying to convene. That is something that we have been doing in all sorts of fields. We would be very interested in playing that role.

**Shaun Bailey AM (Deputy Chairman):** One last thing. Has anybody looked at what this grid would look like? In an ideal world, where are these things going to be? Do they need to be ten metres apart or five metres apart? If you made that grid and laid it over a map of London, has anybody mapped where that physical grid needs to be built?

**Tim Stranack (Business Development Director, Community Fibre):** The 5G technologies are still going through the standardisation process. There is no certainty about exactly how far that is, other than we know there are thousands, possibly tens of thousands, of extra cells going to be needed. The important point is that it is not just outside. The stuff on lampposts and on street furniture will serve the outside community but it will not necessarily penetrate through walls and things, so you are going to need this stuff inside as well.

Just coming back on the planning point, less so on the 5G and the mobile stuff, our experience in general rolling out fibre is permitted use and we can do that relatively well. Where we come into difficulty is on Grade 2 listed buildings and getting listed building consent, which we do, and Westminster planners have been

very helpful in that. The problem we have is that the listed building consent form asks for a whole load of information that is simply not relevant to rolling out fibre. There is a cost associated with gathering that information and providing it, and really we could do with a slimmed down version of the listed building consent just for fibre rollout.

**Andrew Dismore AM:** I look forward to seeing you do the Palace of Westminster.

**Tim Stranack (Business Development Director, Community Fibre):** We have not done it yet. We are very close.

**Sara Kelly (Senior Policy Officer - Science and Technology, Greater London Authority):** On the planning issue, obviously there are updates to the London Plan going on right now. The previous iteration had minimal connectivity policies within it. It is going to be vastly expanded. We also intend to provide in-depth guidance for planners on connectivity issues. This is something we can look into as part of that, as well as the whole broad spectrum of issues such as, as you say, on 5G.

**Navin Shah AM (Chair):** On the new London Plan, can you also look at the issue about the street furniture we have been talking about, which will need whatever variations over the period?

**Sara Kelly (Senior Policy Officer - Science and Technology, Greater London Authority):** Yes, exactly.

**Navin Shah AM (Chair):** We do not want to end up in a situation like we have had with telephone masts where we have conservation areas and areas of special character. You have mentioned listed buildings and so on. It is how we can square the circle, in a sense. You obviously have issues where you have technical specific requirements for these installations to go in but then at the same time there is a conflict in terms of conservation area policies. This is something the London Plan can reflect to advise and inform the local authorities as to how best they can approach that. Also, in terms of planning decisions, this will be very important to provide 5G and the whole infrastructure required for connectivity.

**Shaun Bailey AM (Deputy Chairman):** On the list of things that the CDO could be doing, should that person ever materialise, is looking at where those actual nodes would be. What does that map look like? If we ever get this conference together, one of the questions could be: how dense does this network have to be? There is also a design piece there. A lot of the infrastructure will be in the middle of the road and we cannot put a pole there. There is going to need to be a technical solution. Some of it is going to be architectural as well. Could we make false facades on buildings to put the technical kit in? They are things that need to be considered now so they do not slow up the process of delivering 5G.

**Navin Shah AM (Chair):** On that note, we end our questions. I would like to thank, on behalf of the Committee Members and staff, our guests for their attendance, their expert input and what we have gained from this morning's session. Please feel free to write to us and surely we will approach you if we have any further questions to assist us with our investigations.