

Scottish Affairs Committee

Oral evidence: Digital connectivity in Scotland, HC 654

Tuesday 6 March 2018

Ordered by the House of Commons to be published on 6 March 2018.

[Watch the meeting](#)

Members present: Pete Wishart (Chair); Deidre Brock; David Duguid; Hugh Gaffney; Christine Jardine; Ged Killen; John Lamont; Paul Masterton; Tommy Sheppard; Ross Thomson.

Questions 183 - 253

Witnesses

I: Brendan Dick, Director, BT Scotland, Kim Mears, Managing Director, Strategic Infrastructure Development, Openreach, Iain Wood, Director of Corporate Affairs and Regulation, TalkTalk, and Daniel Butler, Head of Public Affairs and Policy, Virgin Media.

II: Malcolm Corbett, Chief Executive, Independent Networks Cooperative Association, James McClafferty, Head of Regional Development, CityFibre, Floyd Widener, Chief Sales Officer, Hyperoptic, and Michael Armitage, Chair, Broadway Partners.

Examination of witnesses

Witnesses: Brendan Dick, Kim Mears, Iain Wood and Daniel Butler.

Q183 **Chair:** Welcome to the Scottish Affairs Committee's inquiry into connectivity in Scotland. Please say for the record who you are, who you represent and anything by way of a short statement.

Daniel Butler: Good morning, Committee. Thanks for having us this morning. My name is Dan Butler. I am Head of Public Affairs at Virgin Media. Virgin Media is the UK's operator and investor in cable broadband infrastructure. We are big investors in Scotland. We employ roughly 1,500 people in Scotland and we have a network that passes about 1 million premises. Over that network we deliver ultrafast broadband speeds with a peak time performance that exceeds or matches the headline speeds of up to 300 megabits per second. As we are a big investor in broadband, we have specific ideas on how Scotland, through both its devolved powers and political pressure, can be the most optimum environment for broadband rollout of the four nations. We look forward to talking to you about that today.

Iain Wood: Iain Wood. I am Director of Corporate Affairs and Regulation at TalkTalk. TalkTalk is the UK's challenger telecoms company. It has been the most vocal proponent of greater competition and choice in the market and has a particular focus on ensuring that what we consider are essential services are affordable to all, rather than the privileged few. For the purposes of this Committee, it might be worth clarifying that our traditional role in Scotland has been as a retail provider. We own our own network but we rely on Openreach to connect to individual homes and businesses. Last month we announced our intention to build our own network, in partnership with Infracapital, that is going to deliver full fibre broadband to over 3 million homes and businesses across the UK as a whole, but we have not yet announced any cities.

Kim Mears: Good morning. I am Kim Mears. I am the Managing Director for Strategic Infrastructure Delivery and thank you for inviting us to appear in front of the Committee today. There has been real solid progress—and I say "solid"—in recent years in making superfast broadband speeds available to homes and businesses in Scotland. I am really proud of the part that Openreach has played in making that happen. Independent analysis from thinkbroadband says that 93% coverage is available today. To be clear, that is on a par with the USA and a greater percentage than France, Germany, Italy and Spain. Openreach has invested significantly in Scotland. We employ over 3,000 people and under the two BDUK contracts we have installed over 10,000 kilometres of fibre over the last four years. However, I fully appreciate that there is still more to be done and no doubt we will have a chance to talk about that today.

Brendan Dick: Good morning, Chair, all. I am Brendan Dick, Director for BT Scotland, working in BT Group. I want to give you a flavour for BT's



presence in Scotland. We employ about 7,500 people, including the 3,000 referred to by Kim Mears, and they live and work in all local authority areas and all constituencies across the country from Shetland in the north down into the Borders and Dumfries and Galloway. Across the market—relatively uniquely, I suspect—apart from the core infrastructure, we also have wholesale services through BT Wholesale and Ventures and a range of services in the consumer market through into the very important SME sector in Scotland, up through into the large corporates that are based there, and critically all government services at a local level and both UK and Scottish Government central services, plus of course all the other agencies like the health sector. The economic impact of all that is that the income of our employees brings about £225 million into the Scottish economy, which is clearly spent by them and their families. Equally importantly, spend by us with Scottish suppliers is about £171 million a year.

Q184 Chair: I was going to ask about your range of operations in Scotland, but you have given a very concise description of that. What are your current investments in broadband? How do you make the decisions about how you are going to invest? I see Ms Mears shaking her head there, so we will come to you first with that one.

Kim Mears: Looking back historically, Openreach delivered over 1.6 million homes from a commercial programme. That was a wider programme to deliver superfast connectivity to two-thirds of the UK. We have been working closely across Scottish Government on the two BDUK contracts, the Highlands and Islands and the rest of Scotland. Over the last four years, we have delivered fibre coverage to over 800,000 homes and still more is happening as we speak today. We are also on the cusp of our next big build, the Fibre First programme, with the commitment we have made to deliver 3 million full fibre homes by the end of 2020 with an ambition to take that to 10 million and then to go even further. That is subject to certain enablers becoming available and that is from both the cost of delivery to the ability to go fast, reduce costs, wayleaves and things like that.

Daniel Butler: We are private investors in broadband infrastructure. We do not fund our rollouts. It is entirely privately funded via our parent company, the American cable operator, Liberty Global, which acquired Virgin Media back in 2013. After that acquisition, it set about an investment programme that constitutes the biggest capital injection in Virgin Media's history, £3 billion worth of private capital to expand our broadband assets from then about 50% coverage UK-wide to roughly 60%-plus over the next couple of years. We are about two years into that programme and it has had strong focus in Scotland. We have built out to communities, including Fife and parts of Ayrshire, Renfrewshire, a mix of urban build where we have partial network coverage today and building out to entirely new communities that are among the most rural of those served by the cable infrastructure.



HOUSE OF COMMONS

We are investing in two network architectures. Both of those are ultrafast capable. We have trialled both of them to deliver gigabit speeds under traditional residential models. The first of those is something called hybrid fibre-coaxial. What that means is that fibre runs from a central point in the network to the cabinet and then we have a thickly insulated copper material called coaxial that runs from the cabinet to the premise. The key thing to understand about coaxial is that it does not suffer from degradation of service depending on how far away you are from the cabinet. That has been proven time and again in Ofcom's speeds analysis of Virgin Media's network.

As I mentioned in my opening remarks, we are able to either match or exceed the advertised speeds that we offer to the market and that includes our top tier 300 megabit service. Under Project Lightning, you are seeing from Virgin Media an increasing appetite to invest in next generation technology fibre to the premises. We have said publicly that up to 50% of our network rollout will be FTTP and we like FTTP because, quite simply, it is cheaper for us to deploy FTTP to new communities that we are serving.

A final point to make about our ambition in Scotland is that in addition to the build that we have seen to date, we have an ambition to go much further. We have said publicly that the opportunities for us to extend in Scotland are to about 350,000 premises. That is under today's market conditions and planning conditions. Those planning conditions are far from optimal as an investor in broadband and we see real appetite from the Scottish Government to improve those conditions.

Brendan Dick: Kim Mears has touched on a range of investments already, but to give a slightly broader context, about two years ago we acquired EE. We must not forget mobile. I know there is a separate session on that later this month, but just to give a headline on that, we are deploying significantly in Scotland in mobile technology, nearly 300 new sites going in and, critically, investment to uplift the capability and a whole range of others. You will be aware of the emergency services network programme that is being delivered by EE across the UK. Scotland is getting a significant percentage of investment, largely because of the geography, and that has made a big difference in coverage already, with EE covering about 80% of Scottish geographies. That gives a mobile flavour.

In the broader context of network investment, as part of the £11 billion that we have been investing in recent years in fibre, some of which, as was referred to earlier, is working in partnership with both Governments, for example, some years ago now we invested in fibre connectivity subsea, working with partners to the northern isles, which has not been part of that joint programme with Government. Various aspects have been going on that are complementary to the work that Openreach is leading on now.



Iain Wood: Our future investment plans are 100% focused on full fibre. It is undoubtedly the critical infrastructure for this industry for the next 100 years. It is significantly faster for consumers—gigabit speed is 1,000 megabits per second. Crucially, it is significantly more reliable and that is as important to our customers as the headline speeds. It is also futureproof because once the infrastructure is laid, it can be easily upgraded relatively quickly and cheaply over time without having to redig. We are 100% focused on full fibre. I think it is important to stress that there is a change in context in the industry at the moment when it comes to infrastructure competition. I think the traditional model, Virgin Media aside, was for most retail providers like TalkTalk to rely on Openreach to build out the infrastructure and we would wholesale from it.

Q185 **Chair:** We want to get into the issues about the relationship with Openreach and access to the infrastructure. These are critical issues that the Committee will want to explore with you, but I just want to say to you that since we have launched this inquiry you would not believe the number of representations we have had from members of the public. This is something that the public deeply care about, are concerned about and want access to. I have to say to particularly BT and Openreach that some of the responses we have had are not always that favourable. We are aware of the 250 complaints each day that Ofcom secure and receive about service. I do not know if you have followed some of our evidence, but we have been taking a very keen interest in rural areas and the parts of Scotland where it has been difficult to reach and access broadband.

Why are rural areas, like parts of my constituency and those of other colleagues around the table, forced to pay high prices for either the same broadband service as people in urban areas or a much poorer service? Why should people in rural areas pay that premium?

Brendan Dick: There is a variety of components of the service that we provide at the retail level in BT, BT Consumer or BT Business, of which the network component is only one. We have done our best when we are selling services to customers to make sure that they are aware of the kind of speeds they will get when they take up the service and there are changes in that that you will be well aware of. Those customers do have the option of leaving that service if they wish to, but the service encompasses a range of things. If we look at a consumer service and the kind of offerings that we might have in the market, apart from the connectivity there is a whole range of other things in there, such as antivirus capability, parental protection and so on. The broad range of services is there and is not to do with the actual speed. We do our best to ensure that the services in terms of the speed are doing the right thing.

Our front-end processes are designed to help and I think service improvements have been coming through significantly. Looking across the different parts of the country—and I was here talking to this Committee about two and a half years ago—the services have improved significantly and we want to keep them going. Looking towards March 2019 when new rules come in for advertising what the services will be



HOUSE OF COMMONS

and what we have to provide, we welcome that for BT Consumer, BT Business and also EE and Plusnet. We want to work with industry and Government to make sure that the services are as good as they can be.

Q186 Chair: I have a handy little graph in front of me that shows the number of complaints per 100,000 households, which Ofcom very generously provided for us. TalkTalk comes out pretty poorly in this. It has to be said that you are the most complained about company and Virgin is not far behind. The ones that seem to be ahead here are BT, to your credit, Mr Dick, and Sky. What is going on with TalkTalk?

Iain Wood: Before I answer that, can I briefly answer your previous question very succinctly? We do not believe that people in rural areas should pay more because of where they live. We do not practise geographic pricing. We think it is fundamentally unfair, so I just wanted to answer that directly.

On the Ofcom complaints process, there is a lag in the way Ofcom reports, just as we feed the data through to Ofcom. The last period where we came out poorly covered a period when we were exiting our call centres from India as part of our drive to improve customer service, but unfortunately, as part of that process as we transitioned from one call centre to another, it did cause some temporary instability, for which we apologised to customers.

Daniel Butler: Great customer care is something that we have been striving to improve throughout our history as a business and it has been something that Virgin Media has historically had a very poor reputation for. There is ongoing investment. We have certainly not cracked it yet, but we have had steady improvement in the independent measures of our customer care. It is not where we want it to be but we certainly take that investment very seriously.

Q187 Chair: Ms Mears, why should people in rural areas pay more for a poorer service?

Kim Mears: First of all, we do not have geographical pricing. The majority of the products and pricing of Openreach is regulated pricing. I think the question for me is if you are a have not, so if you do not have high speed connectivity today, there is no doubt that you feel the pain. It is just a given in how we live life today, so there is more work to be done. But if we look back and see where we have come in the last four to six years, if we go back to 2012, coverage of superfast connectivity was about 43%. Today, with thinkbroadband stats across all providers, it is at 93%. That is not good enough and there is still more to be done, particularly in those areas.

Over £400 million worth of investment by the Scottish Government and over £120 million worth of investment by Openreach in the two Scottish programmes—the rest of Scotland and the Highlands and Islands—alone



HOUSE OF COMMONS

has moved us a significant step forward. There is more to be done and R100 is a significant enabler for those rural communities to go forward.

Q188 **Christine Jardine:** You said a £400 million investment from the Scottish Government. What was the UK Government investment?

Kim Mears: Across all of the UK?

Christine Jardine: No, in Scotland.

Kim Mears: I do not know. I know the governmental investment was £400 million.

Q189 **Christine Jardine:** That £400 million is Scottish and UK Governments?

Kim Mears: Yes.

Christine Jardine: Thank you.

Q190 **John Lamont:** I want to pick up on the point from Kim that you do not offer geographical pricing. You are effectively charging people in rural communities more for the same headline service than people in urban areas. That is a consequence of that policy. By not offering a discount to people living in rural areas that do not have the same level of service, the effect is that geographical variation in service is not reflected in the pricing.

Kim Mears: We have a series of wholesale products that are available to over 350 service providers and TalkTalk would be a prime example of that. The service providers offer to those customers a portfolio of the products and services that we offer.

Q191 **John Lamont:** But the price does not reflect the level of service the customers are getting, particularly the huge divergence between what people in rural areas and those in cities are getting. A yes or no answer is fine.

Kim Mears: If you look across the service providers, you will see that their pricing for either full fibre or superfast connectivity is very different if you have versus if you have not.

Chair: We will leave that one there just now.

Q192 **David Duguid:** I will not repeat the question that has just been asked, but many of us represent rural constituencies and one of the frustrations I hear most often from my constituents is that all these targets for improving and increasing speed seem to be focused on urban areas and rural areas feel they are left behind a lot of the time. Ms Mears, you mentioned the increase in coverage from 43% to 93%. Could you say a little bit about what coverage means and how that differs from actual access to superfast? Maybe some of the other panel members could comment on that too.

Kim Mears: The numbers that I have quoted are from thinkbroadband and it is the number of homes that are able to connect to 24 megabits



HOUSE OF COMMONS

and above—that is from experts in the industry, it is available to go on, and you can see from your home what speeds are available to you as an individual.

Iain Wood: I think it is a very important question, because sometimes we conflate people living in areas that are within the superfast footprint with all of those homes in the footprint being able to upgrade. Speaking from a TalkTalk perspective, one of the issues we regularly raise with Openreach is the capacity in the cabinets. In some places people live within the footprint and they log on to the availability checker that says superfast is available, but when those customers call us to ask if they can purchase and upgrade, there is not the capacity in the cabinet for them. They find that very frustrating and we find it very frustrating as their retail provider. That is something we regularly raise with Openreach.

Daniel Butler: The situation on Virgin Media's network is relatively simple. Where we have network, we are able to provide the ultrafast services that we advertise. There is no disparity between access to our infrastructure and access to high-quality broadband speeds. We do face, as all broadband infrastructure investors face, an ongoing challenge of substantial increase in consumer demand and usage across our network on an annual basis, something in the order of 60% annual increases in data consumption that is principally driven by HD videostreaming services. That is an ongoing investment challenge. We have to increase the capacity of our access infrastructure to be able to deal with that exponential increase in demand, but the capacity of our lines is as we advertise it. Where we have broadband infrastructure we can provide ultrafast services to end consumers.

Q193 **David Duguid:** To follow up on that, the point I was making is that some areas are listed as having superfast or being covered by superfast fibre broadband, but there are a lot of people in those areas who are often told that they live too far away from the cabinet. I think the 1.2 kilometre number is often used. You mentioned some special kind of coaxial copper wiring that does not have that effect.

Daniel Butler: Our hybrid fibre-coaxial infrastructure, which is the majority of our network architecture today, but over time will become a more mixed ecology alongside FTTP, does not suffer degradation of speed over distance.

Q194 **David Duguid:** Over any distance?

Daniel Butler: Over any distance that we serve customers. That has been tested for about a decade now by Ofcom and that is why Virgin Media consistently tops Ofcom's average speed reports.

Q195 **David Duguid:** Directly to Openreach, what steps are you taking to address the issue of the rural/urban divide?

Kim Mears: First of all on the rural/urban divide, the two programmes have been a tremendous success, certainly from a Scottish Government



HOUSE OF COMMONS

perspective. All the commitments that were made in respect to those original contractual commitments have been delivered and on budget. We are absolutely leaning forward and ready to play a part in respect of the R100 programme. We are also leaning forward in respect of whatever a universal service obligation will be to help and support deliver that.

There is one last point, which is community fibre. We really want to be in a place where we never say no, so we are actively working with communities. This is where we cofund with communities to deliver superfast or even ultrafast connectivity. We will cofund, alongside using governmental vouchers and community funding, to make sure that we never say no and we would put our commercial part into that pot as well.

Q196 **David Duguid:** But that requires an outlay from the community itself to deliver what is fast becoming an essential service for everyone.

Kim Mears: Yes. One last point is take-up. Across the UK today over 26 million homes have access to fibre and on that network today there are 8 million customers. I think we all have an obligation to be really clear about what is available and encourage the support and take-up of the network that is there today.

Daniel Butler: Could I make a quick observation about rural and urban conditions? Virgin Media probably traditionally seems to you like an urban company. Our assets typically concentrate in cities. As we look for network expansion opportunities across the UK, across the 50% of the UK that we have not historically served, we are increasingly finding that rural communities are perfectly optimal for us to build to under our economic model. The parameters that we set our network expansion project extend considerably into rural Britain and in Scotland some of our best performing projects to date have been in relatively rural parts of Renfrewshire, where we did not have existing network assets, places like Bridge of Weir, Kilmacolm that might not be conceived of as traditional venues for cable infrastructure. The regulatory framework should help us achieve that to an even bigger scale, in particular—and I am sure we will come to the specifics—Ofcom's regulation of access to BT's ducts and poles that does open up new opportunities to reach more and more rural communities.

Iain Wood: Can I very quickly pick up on the point that Ms Mears raised about take-up? I think it is very easy in a session like this to focus exclusively on building out the infrastructure and that ignores the fact that the infrastructure needs to be affordable, particularly in Scotland. If you look at the figures for C2DE take-up in Scotland, it is significantly lower than for the UK as a whole. One of our concerns about superfast broadband in particular—and this might sound counterintuitive coming from an internet service provider—is that it has been overpriced in the UK.

In our view, the wholesale price has been roughly twice what it should be and independent research that we commissioned by an economic



consultancy said if that did not change in the UK 400,000 fewer people would take up superfast broadband, which is increasingly an essential service. Ofcom's recently announced proposals bring the wholesale price down quite significantly, which will enable retail providers to offer better value packages, but it is crucial that goes through, because price is every bit as important as buildout of infrastructure.

Brendan Dick: I wanted to come in, partly to do with take-up, and suggest an opportunity that we need to grasp in Scotland. I do not know if any of you have seen the report from SCBI that came out I think last month, looking at the fourth industrial revolution. If you have not seen it yet, you will get it. We are quite fortunate north of the border that we have a relatively good programme of awareness being run in part through the Digital Scotland programmes with Highlands and Islands and the rest of Scotland. That is aimed at the consumer market.

As you will know, we still have Business Gateway in Scotland, which used to be the old Business Links in England. Business Gateway still exists and it is about to start the next tranche, as I understand it, of very much an SME-focused programme of activity, which has been running in the past. Thirdly, and I think importantly, whether you are in urban or rural parts, under the umbrella of the Scottish Council for Voluntary Organisations there has been quite a successful programme running to drive digital participation, working with partners including the private sector, big organisations and small, who sign up to digital charters.

If you look at the three sectors of the economy, there is an opportunity to do more. They could probably be more joined-up. Take-up today is about 39% of fibre services in the country, which is significantly lower than those who could buy it. We also have the opportunity in David's area, and many others where it is rural, where we are genuinely on the cusp of people being able to do jobs in this fourth industrial revolution that were not possible in the past, so we have to embrace that. Price is always a factor in anyone's pocket but I do not think we should put that as a barrier to not getting on.

There was a report produced by Ofcom at the turn of the last calendar year that, looking at our big five EU competitors, put us pretty low down. I think it was £29 a month including line rental and that compares to, for example, Spain at £53. The UK and Scotland is not a basket case in price. Everyone would love it cheaper, but I think the biggest challenge we have as a country—and I say that as a Scot living there—is that we need to drive productivity and jobs on the back of using what we have in parallel with completing the build.

Q197 **Paul Masterton:** A large percentage of the constituents who contact me with broadband issues say that providers are far more interested in taking what is a pretty good level of service in urban areas and wrapping it up as part of their newest, most exciting media campaign rather than taking the rural areas from very poor levels of broadband up to basic. Do



you think that is a fair perception, that you are still spending a lot of time and effort on improving what is already a very good standard, which for the vast majority of people in urban areas is more than sufficient to allow them to watch Netflix and go on the internet, and are not putting sufficient focus on getting some of these hard areas—and I appreciate they are hard areas—up to a basic level of broadband?

Kim Mears: I do not believe it is either/or. I think the answer is it is both. Openreach is on the cusp of its next big full-fibre build—fibre to the premises—and Edinburgh is one of the first eight cities we have announced. That does not mean that we do not need to deliver and have to deliver decent broadband for all if we look at the rural communities. We have absolutely expressed our interest in R100. We will lean forward in whatever a universal service obligation will be. I don't believe it is a case of either/or; we have to address both.

Q198 **John Lamont:** My question is about the recent changes to the rules for advertising broadband speeds. What is your view of those? How do you try to convey to customers as accurate information about your package as you possibly can to ensure that if they do connect to you they are getting the service that you suggested they might get?

Daniel Butler: We have been long-term campaigners for a more transparent set of advertising rules for high-quality broadband services. The 10% rule that the ASA have thankfully consulted on and proposed to transition away from was clearly insufficient to deliver full transparency for consumers and it did not do us a service. We were not able to differentiate the very high quality and high performance of our network against the Openreach network through our advertising. The settlement that the ASA has come forward with is progress, but we are not convinced it is optimal. The ASA has increased the performance requirements to 50%, which is a long way from 10% and that is to be welcomed. It has landed on a metric peak-time performance that when we have tested it with consumers does not mean a huge amount to them. Consumers find it very difficult to identify what peak time is. There is an ongoing need to educate there and we think there are possibly more transparent measures that it could have used. Regardless, it is certainly progress.

What is absolutely critical for us, and the thing that really drives consumer transparency, is that you have a speed, a number in your advertising alongside a claim. The number is the thing that ultimately drives customer awareness far above any language that is wrapped on to it. We think it is very important that the ASA maintains the requirement to back up what are called non-numerical speed claims with an actual speed. I have numbers from February 2018 in which, on average during peak, our 100-megabit service delivered 101 megabits per second, our 200-megabit service delivered about 197 megabits per second and our 300-megabit service delivered 324 megabits per second. That should give you some indication that we are delivering against our advertising.



HOUSE OF COMMONS

Iain Wood: I would echo Dan and say that we support the new ASA rules. We think it is right and appropriate, but I do not think it is enough. There is an extra responsibility on consumers to do far more to address some of the uncertainty that exists in the market in two specific areas. One is that advertising the speed number is fine but a lot of consumers do not understand what these speeds actually mean. It is all very well and good saying 10, 20, 30, but most people want to know what they can do with that.

Separately, consumers also want to know not just about the average product speed but how it is specifically going to apply to their properties. We have just introduced a new tool that we are very pleased with and we think is working very well and the consumer feedback is good. What it does as part of the sign-up process is asks consumers some very basic questions about how many devices they intend to connect, what sort of services they intend to use, do they intend to use Netflix or BBC iPlayer, for instance. From that we are able to match them with the right product, but then for that product, say it is specifically within their home, what speeds they can expect. We then write to the customer and give them a minimum guaranteed speed. The ASA rules are progress and they give customers more transparent advice but I think it is crucial for providers to go much further and give consumers specific advice that applies to their home.

Brendan Dick: To answer your specific question, BT at a retail level—and that includes Plusnet and EE, who also provide fixed broadband as well as mobile—welcome the evolution that has been spoken about. It is clearly going to take a year for all the system changes to work through. Touching on the complexity, one very specific example is that at the end of last week a customer who lives near me in south Edinburgh—very urban—should have been getting about 30 megabits and was getting about 10. They requested that to be investigated and the problem was simply the internal wiring in the house and the alarm system they had, which was resolved by the engineer and brought back up to what it should have been.

End to end, customers are buying more and more sophisticated products and a challenge for us at the retail level in the industry is helping them understand exactly what Iain was talking about: do they know what they are going to need and do they understand the complexity of the end-to-end service that they might need to manage? It is not easy. I think there is a role for us to play on the supply side, but increasingly the education of the customer is going to be an important factor.

Q199 **Chair:** Is it not just a matter of, if you advertise a particular internet speed the customer should secure that?

Brendan Dick: We are talking about to the point of entry into the house, but that may be affected if the house has within it multiple electronic systems, which are to do with neither the retailer nor the infrastructure provider. That isn't the way it works, Chair.



HOUSE OF COMMONS

Q200 **John Lamont:** The Committee had evidence, which you may have read, from residents in Eccles in the Borders, in my constituency, where BT phoned the entire community and told them they were entitled and able to get superfast broadband. BT then tried to connect the properties but because they were too far away from the exchange, the service they were getting was actually less than they were getting before they made the switch. Why on earth was BT trying to sell a product to customers when, either through your retail output or Openreach, it should have known there were going to be physical issues about how you would be able to deliver that service?

Brendan Dick: I was not aware of that and I am happy to take it offline to look at. The information about available speeds, as we indicated before, should be known to any retailer at the point of sale, so that is something I will look at.

Q201 **John Lamont:** Is there a wider issue about exchanges being enabled for superfast broadband but when residents try to connect there is a physical issue of not being able to get it? From the evidence I have seen and the evidence that I get from my casework, there appears to be a suggestion, at the very least, that what BT is offering is not always a service that it is able to provide.

Brendan Dick: At a retail level, when a customer comes to ask for a service, as we have indicated before—you can tell yourself online if you want to do it, but even talking to an adviser—they should know at that point what speed they should get. It can get a bit confusing if before infrastructure is deployed—and Kim may want to comment—they just know that fibre is coming to Eccles, which is a very general term, but until it is built, from a retail point of view it is not practical to know every single line.

Q202 **David Duguid:** I have a very quick question on transparency, which we have just been talking about. Mr Butler, you said something in your introduction about number of premises passed—I think we discussed this previously, Mr Dick, because I thought it was a very strange method. Can you explain how that method is useful, if it is cable going past premises but not necessarily connected?

Daniel Butler: For us it is that every premise that we pass can sign up as a customer. Sadly, we do not convert 100% of those premises to customers and so we cannot count those as active lines. The way that we build out our infrastructure is to build to streets as we go from a regional hub and connect up various cabinets and drop the connection at what is called the T-junction at the edge of the pathway, which then allows us to connect the end customer. Whenever they call up in response to one of our very accurate and good advertisements to request services, we can go in relatively easily and connect the premises, although we will come on to some of the challenges that we face in doing that. The biggest one is getting wayleave permission from the end consumer to connect up



HOUSE OF COMMONS

their premises. That is why we say that we pass X number of premises rather than connect those premises.

Q203 **David Duguid:** Thanks. Mr Dick, I think your explanation from last time we spoke was something similar.

Brendan Dick: It would have been. Kim may want to come in.

Q204 **David Duguid:** Specifically to BT, in your written evidence you state that 2.2 million Scottish premises are able to connect to fibre broadband as a result of the DSSB programme funding and your commercial investment. Can you confirm that all of these households have access to superfast speeds of 30 megabits or 24 megabits, whichever definition you use?

Brendan Dick: The number is higher since then. In Scotland terms, I think we are up to something like 2.5, 2.6 across all platforms. As I think Kim Mears indicated earlier, 93% of those can get 24 megabits or above. While accepting that in your area, David, it might vary a bit in others, even in rural areas the vast majority of those who are passed by fibre will be getting good speeds, if they wish to buy it.

Kim Mears: I think you have gone from something like 1% to 82% over—

David Duguid: Obviously most of the constituents I hear from are in that 18%.

Kim Mears: That is absolutely what I—yes, of course.

Iain Wood: To put some numbers on the capacity point that I referred to earlier, the last numbers I saw—and apologies, I do not have the breakdown for Scotland—was about 1 million people across the UK live in areas that are covered by the footprint, but where there are capacity issues. That means if the customer calls up to upgrade they would not necessarily be able to do so.

Q205 **David Duguid:** That understandably causes a lot of frustration when it is shown on a map as being covered but then when they contact the provider they are told they are not covered or they can't get access.

Kim Mears: A point I would add in respect of capacity is that it is an ongoing uplift and enhancement of a network as more and more customers come on to the network. To uplift capacity it can be as simple as an incremental card in the cabinet, which can be done literally within one day. When we talk about 1 million homes, it is really rapid in the main in uplifting that capacity. It is only when we are maxed out completely and we may need to build a second cabinet that there is a timeline for delivery.

Q206 **John Lamont:** My first question relates to the finance that both Governments have made available to private providers to deliver superfast broadband. How effective do you feel that funding has been to roll out the superfast broadband network?



HOUSE OF COMMONS

Daniel Butler: We are a private investor in broadband, as I said at the outset, and our objective in the market is to minimise the extent to which taxpayers have to bear the risk of broadband infrastructure rollout. Our message to Governments is always give the market the maximum run at rolling out our private infrastructure before reaching for public resources. We have some philosophical differences sometimes with the idea of the application of state aid to parts of the market that we think are well within the reach of commercial operators. What we think is quite enlightened about the R100 programme is the Scottish Government's clear statement that they will take an outside-in approach. They will look to build to the most rural areas that are furthest from market reach first and then work their way inwards, thereby giving the market the maximum amount of time to work its way outwards.

As I have indicated, the environment of the commercial incentives and the economic challenges of rolling out to more and more rural communities is improving every day, with improvements to civil engineering technology and the physical capacity of the infrastructure that we are putting in the ground. We are quite optimistic that semi-rural areas of Scotland will be delivered by the market in reasonably quick order, probably quicker than a public intervention, and with the R100 programme working inwards, we should meet in the middle.

Iain Wood: I would echo that. As I said, TalkTalk has always championed greater competition. In our view, Government should essentially try to structure the market in a way to incentivise the competition and therefore reduce the amount of taxpayer support required. I do not think we have lacked for taxpayer support for this in the UK, to the credit of both the Scottish Government and the UK Government. If you are asking has it been effective in allowing us to hit the 95% target, yes. The Public Accounts Committee and the National Audit Office looked at the other aspects of the programme and I think we would share quite a lot of the concerns that were expressed about the value for money, the transparency of the contracts and the impact on competition.

In the early days of the programme the unwillingness of Openreach, if I can put it like that, to declare where they would build and where they would not build made it harder for other providers, which might have had solutions for areas that were going to be left out, to come into the market. There was an ambiguity that did not support competition and perhaps did not enable some villages to get connected that otherwise might have been.

Q207 **John Lamont:** Would you say that Openreach was abusing its dominant position?

Iain Wood: I would say that whenever you are constructing a public subsidy scheme it is imperative that it incentivises competition, because ultimately that is the best way to deliver value for money for taxpayers and keep costs down for consumers as well.



Kim Mears: From an Openreach perspective, how a process works in respect of public funding is there is something that is called an open market review. That open market review, which would have been exactly the same in Scotland and across the UK, goes out to all network providers and they are asked to declare both their current network coverage and their future plans over the next three years. Data is captured and it allows the Scottish Government, or anyone else, to determine what is called an intervention area. I can absolutely confirm that Openreach has played an active role in all open market reviews in determining both our current network and our intent in respect to future network build. Following that open market review, an intervention area and funding is declared, which then go through a competitive bid process. All providers are eligible to play a part in that competitive bid process in respect of the funds that they are going to be putting forward and also the calldown of any public funds. It is very much an open process.

If I look at the first two contracts in Scotland, my understanding and feedback from the Scottish Government is that it is seen as being a real exemplar of public and private investment in what it has achieved. It is something that we are hugely proud of that we have delivered alongside the Scottish Government.

Q208 **Chair:** This is quite key to the work of this Committee and this inquiry. Is there any confusion, given that the UK Government have reserved responsibility for broadband delivery, that it is the Scottish Government's R100 programme that seems to be delivering most of the infrastructure? We have seen several criticisms from various UK Government Ministers about the activity in Scotland. We have managed to get ourselves logged into a bit of a political fight here. How helpful has all that been and how do we get beyond and around this with these programmes?

Kim Mears: We are really clear about the ambition for Scotland. We are working very closely and leaning forward and we want to play the part in R100 and any universal service obligation. We are clear on what needs to be done. To be quite honest, it is annoying.

Brendan Dick: I will wrap your question there, Pete, into what I was going to say. Let me give you an example to put it in context. If you go back two or three years, I think it was—and I might forget my source—there was a report produced, I think by SQW, maybe for the Broadband Stakeholder Group. It said that investment in digital infrastructure had an ROI ratio of 20:1. Whether that is right or not in exact terms, it is pretty high. Looking at the Government from both parties' investment—I think the UK put in £100 million to the £410 million, by the way—if you stripped out the beating up of the investment of £126 million, £284 million if my mental arithmetic is right, what it has achieved is phenomenal.

As a comparison, as someone who lives near the Forth Road Bridges and uses them, which have been a phenomenal success, the new one has come in under budget and pretty well on time at about £1.75 billion. That



HOUSE OF COMMONS

£284 million from Government has taken us from where we would have been to where we are. Highlands and Islands, and this was a matter of public knowledge, commercial investment by the industry—and I am not sure if Virgin have anything up there, but certainly from BT at the time—was going to result in 21% coverage. It is now going to be well into the 80s and as far as we can stretch it on the back of some of this investment. I think as value for money from Government has been phenomenally successful, it gets harder. The last 5% is clearly going to be hard.

But as a taxpayer personally, the sooner we get to a world where take-up is not 39% but is 60% or 70% or whatever, that will inevitably drive down any future need for any Government intervention and I think that would be the goal we would all have. There are two sides of a coin here. There is clearly the ongoing push, as Kim has alluded to, to deliver the infrastructure, but we are going to get to a time pretty soon where, as a country and for you as politicians, we need to be putting, frankly, more emphasis on how we are using it. I do not think we are giving it that collective focus at this point in time.

Q209 John Lamont: Moving on to the universal service commitment that the UK Government have announced, how is that going to affect the marketplace for broadband? I am thinking particularly in my constituency where 37% of residents do not currently get that level of service. How is the market going to change if that commitment is brought forward?

Daniel Butler: I think there is a missed opportunity with the universal service obligation. BT came forward with a low path of resistance solution, a universal broadband commitment that would have delivered 10 megabits per second to all households by 2021. For whatever reason, Government could not make that commitment stick and so we are now into a situation where it is likely that we will have two years of regulatory wrangling before BT can even get on and start delivering the upgrades for that quality of service. That is a frustration and is going to mean that rural constituencies in Scotland have to wait longer to get what we think is an adequate level of service under the universal service obligation.

Ofcom's own metrics on 10 megabits per second, which has obviously been subject to a lot of debate in Parliament about whether that is a sufficient level of coverage, find that it is sufficient for what the universal service obligation is about, which is providing a safety net, making sure that some socially and economically productive activities are supported by a base level of connectivity. But as I look at Scotland's regulatory construct, the R100 programme is going to make the USO redundant for Scotland anyway and so one would assume that the Scottish Government's primary vehicle for improving rural connectivity in Scotland is providing superfast through a direct intervention as opposed to making use of the universal service obligation.

Iain Wood: TalkTalk completely supports the USO, always has and always will do, because we completely agree it is essential that



everybody, no matter where they live, has a basic level of provision. We support the decision that the UK Government made to go down the fully regulated option. It is precisely because this matters so much to people in rural communities that we need to do it properly and it needs to be fully regulated. One of our concerns with the BT offer that was proposed is that it would not necessarily be legally binding and that meant that consumers in rural areas would not have the certainty of knowing what they were going to get when, and one of the reasons we back the regulatory option.

Very quickly to address Dan's point, to be perfectly honest, I think one of the reasons Virgin Media quite liked BT's offer is because they would have been almost unique as a major provider of not having to pay for it, whereas this option probably will result in some costs for Virgin Media. I think that potentially explains one of their preferences.

Daniel Butler: There is an intellectual logic to that, which is—

Chair: We will leave you two to—

Daniel Butler: I will just make one point, Chair, if I may. The people who pay for the universal broadband commitment that BT came forward with are the people who can sell higher quality services as a result of that investment. That does not apply to Virgin Media, so there is no intellectual consistency.

Chair: We will leave that one that there, shall we? Mr Wood, continue.

Iain Wood: I will finish by saying that this is a shared problem and TalkTalk is not going to hugely benefit from the USO. The vast majority of the customers that are going to be brought online are off net for us. They are never going to be potential customers for us, but we completely recognise that as a major player in the industry we have a moral and financial commitment to support it.

Chair: That is what happens when you have commercial rivals on the panel.

Brendan Dick: I was going to briefly add that the BT Group came forward with the offer, so naturally we are disappointed it was not taken up, but we are where we are. We will just have to wait and see what comes back from Government. The only thing I would add, and it does not take a rocket scientist to work this out, is that the offer would have resulted in a minimum of 10 megabits and the vast majority would have much more than that.

Q210 **John Lamont:** When there are all these people who currently don't have even 10 megabits and have been relying on BT and Openreach to deliver it and you have failed to do that, is it a surprise the Government had to step forward and force you to do it?

Kim Mears: We made an offer to Government for a 10 megabit offering. That offer was turned down. It did deliver the timescale of certainly the



HOUSE OF COMMONS

majority by December 2020 with a small minority by early 2021. Where we are now is, as I said before, we are leaning forward. We are waiting to understand the secondary legislation on the construct of the USO, which I understand is imminent. We will be working really actively with Ofcom on how we can help and support with the universal service obligation, but there is a lot of work to be done on both the what and the how before we get on with any build.

Q211 Deidre Brock: I want to ask about the regulatory barriers. In some of the evidence, things like rental payments, wayleaves and access to information from land registries have been mentioned. In a report on "Lowering barriers to telecoms infrastructure deployment" the Broadband Stakeholder Group note that there is uncertainty in local authorities associated with innovative deployment techniques and planning issues. Could you all give us your views on what the main barriers are there?

Daniel Butler: There are devolved powers that provide opportunities for the Scottish Government to improve and make optimal the conditions for broadband rollout and I will start with what those are. But just to give context to that, about 80% of the cost of putting broadband in the ground, making it available to communities, is in the civil engineering effort that that entails. Those costs are in some ways benefiting from productivity improvements in the technology that we apply to them and in other ways facing labour supply constraints as the environment for contractor resource tightens, particularly with the news of Carillion, but also Brexit is obviously a dark cloud on the horizon for labour supply in the UK.

In that context, we look to local authorities and Governments to do everything within their power to remove some of the costly constraints of highways policy and planning policy and to provide incentives through those frameworks for private rollout. What powers do the Scottish Government have to effect that? They have some powers relating to taxation, business rates, and they have some powers relating to the planning framework, the Scottish planning policy.

To start with the first, our sector has been subjected to an across the board 300% increase in our business rates liability as a result of the revaluation of 2017-2022. What that means for a broadband investor like Virgin Media is that every new premises that we add to our network is subject to an incremental tax of £25 per annum. That is 5% of ARPU and that is material to rollout economics, particularly where those rollout economics are obviously marginal, and that is the case in more rural communities for us.

There is not a huge amount that central government could do to affect the Valuation Office judgment, but there is a lot that Governments can do to mitigate the impact that that could have on rollout incentives. The Scottish Government's position on business rates is that they will follow the lead of Westminster, and Westminster has come forward with a policy construct, a full-fibre rates exemption. We think that there is an



HOUSE OF COMMONS

opportunity here for Scottish Government to go beyond Westminster and make it more attractive for operators—and business rates could be the tipping point for broadband infrastructure investors—to invest in Scotland. They can do that by saying, “We are going to commit to a long-term full-fibre exemption”, moving beyond 2022 when the effort of full-fibre rollout will not be complete, and they could do so by saying, “We are going to expand the list of assets that are subject to relief”.

The draft legislation coming forward from central government is a pretty limited list of assets and certainly does not cover the comprehensive number of assets that an investor has to invest in in order to make an FTTP connection work. We think that that list should be much longer. That is business rates. Sorry, this is now an extensive answer.

The Scottish planning policy is going through legislation at the moment. There is a planning policy Act going through the Scottish Parliament. We think that there are ways in which Scottish Government can address the key challenges that face broadband rollout, and those are getting wayleave permission to connect premises and connecting new developments. Wayleaves in legislative terms are controlled by Westminster through a national regulation, but there are specific ways in which Scottish Government could improve the conditions for getting wayleave access.

Chair: We have 20 minutes left of this session, so we are going to have to try to have answers a bit more concise, if we could possibly secure that.

Q212 **Deidre Brock:** Anything further, just quickly? Wayleaves, planning?

Daniel Butler: We think a good wayleaves regime would be a notification regime, not a negotiation regime, so where we have absentee landlords we do not have to go through months and months of negotiation. We think that for new developments there should be stipulations that the highest quality infrastructure should be available from multiple operators, and you can do that through the Planning Act.

Q213 **Deidre Brock:** Yes, I saw that. I have seen lots of nodding. Is there anything that anyone else wants to add to that?

Kim Mears: Just probably to reinforce some of the messages. When we look at fibre build, particularly when we are talking around full-fibre build, to fibre to the premises, these investment cases are multi, multi years, up to potentially 20 years. When you have, for example, Cumulo, so taxation, they have to recognise that this is a long-term investment and whatever support that can be done, be it Scottish Government or even leadership across local bodies as well, to make it easier to deliver some of the most complex engineering programmes. We fully support wayleaves to taxation, but we need to do something and we need to do it now.

Iain Wood: I would echo all of that. Two very quick additional points: Ofcom’s drive for duct and pole access, which is essentially about asking



HOUSE OF COMMONS

Openreach to open up the existing infrastructure so that other investors can use that, is very important. It brings down the cost of build and it is also better for communities because nobody wants to pull their curtains back in the morning and find seven duplicate telegraph poles down the street.

The other thing I would stress is it is not just about removing some of the barriers to investment. It is also about creating the right incentives on industry to invest. One of the concerns that we have had is that, frankly, Openreach has not had that incentive to invest. Because of the very high wholesale pricing I was talking about earlier for copper, Openreach has had essentially a commercial incentive to sweat that existing copper asset at no risk. Therefore, it does not make BT or Openreach wicked and evil for not having invested in full fibre. It is perfectly commercially rational. It is also about providing the right financial incentives on industry to invest as well as removing the barriers.

Q214 Deidre Brock: I would like to ask about copper because we did have technical experts in before who were quite critical of further investment in copper at all. Could you maybe address that?

Kim Mears: Just to pick up a couple of things, first of all, that were mentioned here around access to our poles and holes that enables competition in respect of infrastructure build, it has been available since 2011, pretty small take-up across network providers so far. With the recent WLA, so pricing changes from Ofcom, it does reduce those access rates by 50% so there is a huge incentive now for all operators to absolutely get out there and start building.

In respect of the copper network, it is about timing. If you go back to 2008-2009 when we were at the point of probably the deepest recession, we invested over £2 billion in rolling out a superfast network. That network is what it is today, so over 26 million homes across the UK covered. What we are saying is now we are on the cusp of our next big build. We have announced Fibre First. What that will do is it will take us to eight cities—they are announced—Edinburgh being one of the first eight. It will be 3 million homes by December 2020. That will then go to 10 and even beyond, but it goes back to that conversation we have just had, which is if we can create the right regulatory environment—for example, taxation—how do we take it even further? We have the investment, but these are really complex engineering and long-term business cases.

Q215 Ged Killen: I wanted to briefly come back to the issue of new build housing developments. Is planning the only issue? In my constituency, there is a group of residents who have had a long fight with Openreach about upgrading cabinets that were too far away from thousands of new homes that have been built, no capacity. Eventually they got a bit of ground there, but the problem still is not fixed and new homes are being built every day. What is the problem with new build developments and how can we address that?



HOUSE OF COMMONS

Kim Mears: We have worked really closely with certainly the top developers, the HBF and various organisations across Scotland. Going back last year, we announced that anything over 250 homes and above will be fibre to the premises and free. We then took that down to 100 homes and we have now taken it down to 30 homes. Any development of 30 homes and above will be fibre to the premises and free. Below 30 we are willing to work and co-invest and co-fund alongside developers, but we are looking continually at how we pull that number down even further. If you look though, and even when you have below 30 premises, over 98% of new build have availability just by where they are to 24 megabits and above.

Q216 **Ged Killen:** Isn't the problem though that some of these developments come up in smaller batches? There might be 15 homes and then there might be another 30 built, and eventually you have several hundred homes that have all been developments of under 30 homes.

Kim Mears: The way that the developers work with us is they register. They register not just their first phase, but their intent. What we will do is we will give them notification around fibre. If they say, "We are going to be doing 100 homes" they might deliver that 100 homes over five years. We would still deliver fibre connectivity to the first 15 in year 1.

Daniel Butler: If I could just make a point—

Chair: A very brief point, yes.

Daniel Butler: —there is a long tail of housing developers that are hard for operators, particularly competing operators that do not have universal service provider status for telephony, to provide service. Having tried to crack this market for a long time—we have done initiatives with the Scottish Building Federation—we do think that the way that you capture close to 100% of new developments and ensure that they are making informed decisions about their connectivity requirements is through a hard intervention like the planning process.

Q217 **Christine Jardine:** I have a couple of questions. First, you have mentioned Edinburgh a couple of times and getting investment. While as an Edinburgh resident and MP—I am sure like the other Edinburgh MPs—I welcome it, at the same time part of me feels quite guilty because we already have a good service. We are hearing from other parts of Scotland and I know from the rural and semi-rural parts of my constituency that they do not have a good service. You talked about it providing rural and urban and it should be both. Would there have been an opportunity in this next tranche perhaps to have announced first, rather than Edinburgh, an area of the Borders or the Highlands or Aberdeenshire, which does not at the moment have as good a service as Edinburgh, which is about to get an even better service?

Kim Mears: As I said, I do not believe it is either/or.

Q218 **Christine Jardine:** Obviously it is because you have announced



Edinburgh but not the rural areas.

Kim Mears: We continue to work in the Highlands and Islands. We are continuing to deliver across the wider rural Scotland. If we look at our 100, which is absolutely looking from the outside in, with over £600 million worth of funding, and there will be the contribution that any network provider that goes into that will provide alongside it.

Q219 **Christine Jardine:** If you do not mind me saying, you did say that you do not believe it is an either/or, but you had to prioritise the decision this time where this investment would go. Was there not an opportunity in prioritising—if it is not an either/or—to say, “We will prioritise the rural areas that currently have a less good service” where they are perhaps further from cabinet, where, for example, in my area and in Mr Killen’s area there are new developments that do not have adequate service yet? Would that not have been an alternative? Did you consider that as an alternative?

Brendan Dick: Can I help here? As a matter of public record, some of you—John, you will know—have FTTP deployment in your patch, so it literally is not that the organisation and the world is only seeing fibre deployment in Edinburgh or other cities. Throughout Scotland, we are all seeing, partly through the programmes, fibre to the premises—which is basically giving the same level of service, Christine—happening around the country. We are moving to a world where I think as an industry the concept of Fibre First, where it is affordable, is where we are getting to, as I think has been stated earlier. So it is not either/or.

Kim Mears: We are doing both. I seriously do believe we are doing both, but I am not suggesting in any way that there is still not more to be done because there absolutely is.

Q220 **Christine Jardine:** To move on, Openreach is now legally separate but you are still part of the BT Group. How has this separation affected the way that you operate?

Kim Mears: We have our own board. We have our own chair, Mike McTighe, and our own non-executive. We are forming our own strategy. We are absolutely engaging very differently in respect of our customers. A great example would be fibre to the premises and our fibre rollout. We engaged actively across the industry to find out what it was our customers wanted to help form the understanding in that business case. I am a member of the Openreach executive. We have been transferred over now into Openreach. There will be at some stage a full TUPE of all employees into Openreach. It feels very different.

Iain Wood: Can I give a customer perspective there? Obviously we are one of Openreach’s biggest customers and I think it is fair to say we were the most vocal proponent of full structural separation in the market. Nevertheless, we respect Ofcom’s decision and it has spent the last year trying to make sure the new arrangements work as effectively for customers. I do think we have to stress customers in this, because when



HOUSE OF COMMONS

we advocated structural separation we did not do it for the sake of it. We were doing it because we felt it was absolutely critical that we saw a material change in the service customers get and the investment that goes into the industry and the way Openreach works in collaboration with industry to share joint problems.

I think one year on—we are almost exactly on the one-year anniversary—we have seen some improvements. I would cite the performance on ethernet and specialist business lines has got better. To the credit of the new Openreach chief executive, he is far more collaborative with industry and we are seeing a lot more regular and detailed collaboration, which is good. I would be lying if I sat here today and said that our customers have seen any significant change. If you look at service, as I say, businesses, B to B services, have become slightly better. Services to consumers, as we see it, have not. In some cases, the metrics are going backwards, not forwards. If you look at the number of customers that go live late or the number of faults immediately after going live, those figures have been going backwards since last autumn.

On investment, of course we, as one of their biggest customers, welcome Openreach's investment in fibre to the premises, but in truth we do not think it is ambitious enough. TalkTalk is, in comparison to BT, a relative minnow. We do not have the inherited national monopoly. We do not have the large army of engineers that Openreach has, but we have committed to go to 3 million homes. We think if TalkTalk can go to 3 million homes, BT, with all of its resources and might, could go significantly further.

On the point about the relationship, as I say, we respect legal separation but you cannot deny the fact that so long as Openreach is part of BT Group, BT Group controls how much Openreach invests and therefore decides how to balance the investment in critical broadband infrastructure relative to other things. To give one very quick point, BT has just committed to spend nearly £900 million on English Premier League Football rights. That means that, based on Openreach's own numbers, that investment, if spent on critical broadband, would allow 3 million extra full-fibre connections.

Chair: I think we will allow a right of reply from Mr Dick here, obviously.

Kim Mears: It is great to get the feedback of one of our customers. What I can also say is if I had a number of them sitting alongside they would probably be slightly more effusive than Iain. What I would say is, to be very clear, we have improved significantly on our service stats over the last year. I am more than happy to send a written submission to the Committee so that you can see how significant those improvements have been and have the facts and the figures in front of you.

Chair: We are going to leave that there.

Q221 **Christine Jardine:** You have partly answered my second question, which



HOUSE OF COMMONS

was about the greater independence in the market and what changes you have seen. This might be irrelevant, but I have recently had a number of queries from constituents who live in a semi-rural part of the constituency who would like to switch and have contacted both Openreach and TalkTalk and were told it is not possible to switch. Why is that? Is that simply because TalkTalk has not reached them yet?

Brendan Dick: Do you mean switch retailer or switch network?

Christine Jardine: Switch network. It is one particular area. It is not just TalkTalk, but they have said that they currently get their service from BT/Openreach and they want to switch to TalkTalk.

Brendan Dick: The retailer could be one of hundreds; the network is Openreach. Is this around about Kirkliston or thereabouts?

Christine Jardine: Yes, funnily enough.

Brendan Dick: I know it well. To be honest, I will answer this from a retailer perspective, because obviously BT Consumer or BT Business runs on the back of the Openreach network. I do not think it is a question for the network provider; it is a question for other network investors. I do not know. Dan might know. Are you guys going out to Kirkliston?

Daniel Butler: If we are, that information is not in the public domain so I can share it.

Iain Wood: I know the exact case you are talking about because we are looking into it. Even though we use the Openreach network, we do not sell in every area covered by Openreach. We unbundle the exchanges and we serve to a more limited footprint. It reaches 96% of the UK population, but it is slightly more limited. It might be that instance, but we are looking into it and we are going to come back to them.

Q222 **Christine Jardine:** The reason I raised it is simply because to me it was indicative of the fact that the vast majority of customers, regardless of all the information, all the investment, everything, still think that they should be able to get their service from whoever, whenever. Perhaps there is more communication needed.

Kim Mears: I am not aware of the case, but I am more than happy to have a look, yes.

Chair: There are a couple of questions I want to get in before this session ends. We will go across to Mr Sheppard.

Q223 **Tommy Sheppard:** I want to go back to access to infrastructure. I understand that Ofcom last June issued some direction about the access arrangements that other providers would have to BT tunnels and poles. Are those arrangements now where they need to be? Can we look forward to them improving the access to rural communities?

Daniel Butler: We are the ones using it, so perhaps I will give a perspective. We are initiating a number of trials using BT's ducts and



HOUSE OF COMMONS

poles. There have been several iterations of some of the administrative side of getting access to that infrastructure. We did see significant improvements in last week's wholesale local access review, which will reduce the cost burden, so we are optimistic about it.

One quick point to make about access provisions like the ducts and poles is if you look at markets across the world, where those access provisions have had the greatest impact in terms of increasing coverage, it has been because there have not been wholesale access provisions that incentivise renters of broadband infrastructure to just continue renting rather than build their own infrastructure. That is a critical component of how people are incentivised to use ducts and poles.

This gets to the heart of some of the economic regulatory debates that we have been having in this session. I just give an independent network perspective on that. What happens is regulation of the Openreach network has consequences for independent network operators. It changes the incentives for us to roll out our network. Where Ofcom makes decisions to lower the price of wholesale access to fibre, for instance, there is a direct impact on people that are independently investing in their own infrastructure. To make the conditions more attractive for renters—TalkTalk historically rented and now they are building—than using the ducts and poles access or using capital from the market to build their own infrastructure we think is a fundamental mistake, because that regulatory framework will not produce the infrastructure-based competition that is critical to driving improvements in performance.

Iain Wood: At the risk of being slightly provocative, I entirely disagree. In TalkTalk's view, the lowering of the wholesale price for fibre to the cabinet—the hybrid fibre and copper product—increases both Openreach's incentives to invest and the ability of others like TalkTalk to invest. As I said earlier, if a company is able to earn excess profits by sweating existing legacy assets at no risk, then they will continue to do that rather than take an investment risk on new infrastructure. Equally, the very high wholesale prices made it very difficult for rival and potential investors like TalkTalk to grow the scale of customer bases we needed to support our investment. We do not see it as an either/or. You absolutely can have low prices and high investment. In fact, the low prices are more likely to lead to higher investment.

Daniel Butler: That is just economically incoherent.

Chair: We have heard from you, Mr Butler. Ms Mears.

Kim Mears: Access to the ducts, poles and holes has been open since 2011. We have a number of network operators, builders, using access at the moment and it is growing. Recently, with the WLA announcement, it has reduced the prices for those access components by 50%, so I would expect to see an even greater use for the build of networks through using our ducts and holes.



HOUSE OF COMMONS

Chair: Two last quick questions, and they will have to be quick, from Mr Thomson and Ged Killen.

Q224 **Ross Thomson:** Most of what I was going to ask has been covered. It was about Ofcom's announcement that they were going to be cutting the price that Openreach can charge telecoms companies to use the superfast broadband network. I want to find out more about what you saw that would do to the market, and also if Ofcom is trying to incentivise providers to invest in full fibre, do you think there is a risk that providers could stop investing in full fibre because the cost of using the existing fibre to the cabinet technology would be cheaper?

Daniel Butler: Yes.

Chair: Good answer, the sort we like at the end of a session.

Kim Mears: I think that Ofcom is clear in respect of competition at the network access level. What the opening of, if you like, the reduction in pricing does is create an environment that supports that competition.

Brendan Dick: My very simple view on this is that Ofcom as a regulator is trying to create a scenario where the prices are right for using the networks and the prices are right to encourage investment, and they come down with an answer they have come down with. We will run as an industry with what we have and time will tell.

Iain Wood: To be very brief, Ofcom's logic for this is Ofcom already allows companies, when they make an investment and take a risk, to earn excess profit. They accept that is a necessary part of encouraging infrastructure investors to make that investment. What Ofcom has said though is there is a reasonable time period at which that ends so that at that stage you are not simply sweating an asset at no risk and therefore forcing consumer bills artificially high. Ofcom has rightly said that Openreach took the investment, as Ms Mears said, during the recession. They have made the very excess return. Ofcom has said that is time up on that excess return, the prices need to come down, and the only way you can make an excess profit now is by investing in new full-fibre infrastructure, and we support that.

Daniel Butler: A very quick final point: that is BT/Openreach's fair bet. They are allowed a fair bet by the regulator. We also have a fair bet. We are a private company. We are investing and taking risk in investing our capital. What about our fair bet?

Q225 **Ross Thomson:** Very briefly, we touched on the role of Scottish and UK Governments in this. One thing we never covered was an announcement by DCMS that funding will go straight to local authorities. I would be interested in hearing what difference you think that would make.

Chair: So would I.

Brendan Dick: Again, if you study what is involved, this is around things like local full-fibre networks and that touches not just infrastructure



HOUSE OF COMMONS

providers but retailers in the industry. It is not the same thing. To be honest, apart from the fact that it is going straight to local government, it is looking at investment in higher capacity networks; I would suggest laudable. Whether the mechanism is right or wrong you can debate, and I think the trial is currently still running. I think six local authorities, including Aberdeenshire, were a part of that, and it will go further. As a group, we welcome it and different parts of BT Group are looking at it collectively. Time will tell whether the different approach is better or not.

Kim Mears: Yes. I am in the same place, that time will tell. We have had and we continue to have an excellent relationship around Scottish Government ambition and vision of where we are today and what needs to be done. It is a different approach, but it is a slightly different network that they are looking at as well.

Q226 **Chair:** Did this not come out of what I sense as a frustration from UK Government over what they saw as a default for the Scottish Government that they were going to bypass them in some way for the rollout? Was I wrong in that interpretation?

Kim Mears: I do not sense that. I really do not sense that, but it feels like a one size fits all.

Chair: We will leave that one there because time is almost up.

Q227 **Ged Killen:** Back to Ofcom cutting price, especially for Ms Mears, BT has said that it will have an adverse impact on Openreach revenue and profit. Are you planning any changes to your business practices as a result of that?

Kim Mears: We have certainly made a huge announcement in respect of Fibre First, a significant business case that says 3 million homes with a real ambition for 10 and beyond. We are very clear around investing to go forward.

Iain Wood: Can I very quickly point to the evidence in the market that exists? We hear the arguments from either side that reducing those wholesale prices will diminish investment, but we have known these cuts are coming for the last year or so. Ofcom has been consulting on them. If you look at what has happened in the market in that time, Virgin Media has continued their rollout to 2 million firms and properties; Openreach has increased their commitment to invest; companies like Vodafone and CityFibre have announced new investment; TalkTalk has announced new investment as well. I think the evidence does support the fact that as these prices come down it is incentivising and creating more investment.

Kim Mears: What I would say though is that we have to be clear that when we are looking at the next big investments, particularly in full fibre, these are 20-year business cases. There does have to be a fair bet in respect of a payback over that period. Does it reflect in respect of your ambition? Of course, it has to play into it.



Q228 **Chair:** Thank you. We have managed to get through an awful lot there with four witnesses and commercial rivals too. I think we managed to get all our questions out. Thank you. Again, if there is anything that you feel you could help the Committee with—I think there was something we had asked from you, Ms Mears. I cannot remember what it was, but I am sure the clerks have a note of this.

Kim Mears: I will send you some service—

Chair: That would be fantastic. We are grateful. Thank you for coming this morning.

Examination of witnesses

Witnesses: Malcolm Corbett, James McClafferty, Floyd Widener and Michael Armitage.

Q229 **Chair:** We are grateful to you all for appearing. Thank you for coming to help us out in our inquiry into connectivity in Scotland. For the record, could you say who you are, who you represent and anything by way of a very short opening statement? We will start with you, Mr Corbett.

Malcolm Corbett: Thank you very much for inviting us. I represent the Independent Networks Cooperative Association, which is the association for the alternative network builders—the people who are not BT Openreach, basically—building new networks. They build full-fibre networks; that is fibre all the way to the premises. Some build wireless networks, particularly in rural areas, and there are a number of those in Scotland. Some do both; they operate in urban and rural areas. Ambitious young companies, no single business model, which I think is an advantage. They do not have to operate to one monolithic business model. That means they can operate with greater local focus, more flexibility, different types of partnerships, particularly public sector or even communities. Some are community co-ops, particularly in the north of England and parts of Scotland. They are attracting significant sums of investment, £500 million in the first half of last year alone just to four of our members, four companies, reported by *The Financial Times*. They are building new networks. They do not tend to demand subsidy.

We published a report just over a year ago called “Building Gigabit Britain”, which recognised the fact we are in a period of change. We are moving from the old phone network, which served us well for 100 years, to the new digital networks of the future, which will be future-proofed and deliver the sorts of services that we need as communities, businesses and so on. That was followed very quickly by Matt Hancock, who when he became the Digital Minister in Whitehall made a speech saying the future of Britain is full fibre and 5G. In other words, he accepted all of our recommendations, which was fantastic. It has never happened to me before that a Minister accepts all the recommendations, but he did. We fully agree that this is the direction that the UK as a whole needs to be



HOUSE OF COMMONS

going in, including Scotland, and we are committed to making that happen.

Michael Armitage: Good morning, everybody. Thanks very much for the invitation. It is a great privilege to be here. I represent probably the smallest company you will ever have presenting evidence to you. Broadway Partners was founded a few years ago to explore and develop a business model to serve the rural community. In the last two years, we have been pioneering the commercialisation of something called TV white space, which is the spectrum that has been made available as a consequence of the digital switchover. We are building networks in Scotland, our pioneering network on Arran, around Loch Ness, Perthshire and also down south in Wales.

Our calling card is that we guarantee 100% connectivity wherever we go. There are no exceptions. There are no "subject to survey" exclusions. The virtue of TV white space is that it allows you to penetrate things that would otherwise be impenetrable like trees, hills and buildings. We are more or less impervious to geography or we are uncaring about geography. The geography is the driving factor behind our business model. Looking at the statistics, it is very clear that we are talking about the urban deployment of fibre and full fibre. Of course full fibre is fantastic, but the typical population density in cities is 2,000 people per square kilometre; the typical population density in our patch is 20 people per square kilometre. It is 1% of the population density and we have to make the numbers work. Full fibre is not the best way to make the numbers work and wireless is.

We employ innovative technology and radical new business models. They are not that exciting, but they are pretty different and they are proving very effective.

Floyd Widener: Good morning. Thank you for the invitation. I am the Chief Sales Officer at Hyperoptic. Hyperoptic is the true full-fibre, high-speed broadband deliverer. We are active in 30 cities across the UK, of which two are of particular interest to you, Glasgow and Edinburgh, soon to be opening Aberdeen. We are the fastest broadband supplier. If you look at the ASA recommendations on hyper-fast full fibre, we are a full-fibre network and we own our own network. We only deliver to urban areas and that is our strategy.

James McClafferty: Good morning. I am James McClafferty, from CityFibre. We build, own, maintain and operate full-fibre networks throughout the UK. We have four major investments in Scotland currently and our largest UK investment for spine fibre infrastructure is Glasgow, followed by Edinburgh. Our four major investments in Scotland are Edinburgh, Aberdeen, Glasgow and Stirling. A few weeks ago we announced a £40 million investment in the city of Aberdeen, where we will connect every home to 1,000 megabit broadband.

Q230 **Chair:** I am grateful. I was going to ask you about your footprint in



HOUSE OF COMMONS

Scotland, but you have very adequately described that to the Committee in your opening statements.

How do you differ from the big players that we have heard from this morning? How do your business models work and how do they differ again from the big providers? What added extra can you give to areas like mine? I heard you mention Perthshire, Mr Armitage, and my ears pricked up at that. What can you perhaps offer some of the harder to reach communities that the big players cannot offer? We will start with you, Mr Armitage, because you did mention my constituency.

Michael Armitage: I love it to bits. I am up there next week so I am happy to meet and talk about the challenges you face there. If you recall, there has been quite a lot of discussion in the previous session about the universal service obligation. If any of you had the time to read the technical report that Ofcom commissioned, there was the suggestion that if conventional wireless was to be used to deliver the universal service obligation it would cost £30 billion.

Chair: £30 billion?

Michael Armitage: £30 billion, and the operating cost annually was £11 billion. The piece of paper was not really worth blowing your nose on, to be honest. It was absolute rubbish. The model was based on the premise that what we think of as a mobile infrastructure or a wireless infrastructure is characterised by 100-metre tall Arqiva masts that take years to get planning permission for and cost a fortune to build. We have a much more elegant, lower profile, lower environmental impact, keeping below the planning horizon constraints, and it sounds ridiculous, but we typically build at 1% of that cost.

Our typical mast infrastructure costs less than £2,000. It will typically take a couple of days to install. It will not require planning permission and it will be absolutely jammed full of radio equipment. I would love to show you my favourite slide. We do not have the facility to show you a slide, but there is a Government-funded mast on Arran that cost around £200,000 to build and took two years to construct. It has zero equipment on it because it is too expensive for anybody to use. We have a little mast next door, which took us a weekend to construct and is absolutely jammed full of equipment. I tell you that because our whole operating model is to build very low profile, small networks close to communities.

Chair: Great, thank you for that.

James McClafferty: The main difference is size, I suppose. The big operators have legacy networks and legacy systems and we do not. Our company was founded seven years ago. It was acquired for £1 and last year and the 24 months previous we raised £500 million to invest in pure fibre networks. A fundamental difference: we only build pure fibre infrastructure. We build it from scratch. It is new, it is modern, and it is fit for purpose.



Malcolm Corbett: Fundamentally, the difference between the approach that a company like Openreach has to take and that of the altnets is the altnets, as I think James pointed out, do not have a legacy infrastructure they need to maintain. Nobody who builds a new network today builds a copper network. It would be completely bonkers to try to do so. People will only build new fibre networks, fibre to the premises networks, or wireless networks because that is the only thing that really makes sense. Fibre networks give you an investment that has the characteristics that ultimately make it like an infrastructure investment. Wireless networks, as Michael has well described, allow you to reach areas that are otherwise going to wait a very, very long time for a fibre connection to arrive, even despite the fact that there are a number of companies operating in rural areas, like Gigaclear, recent entrants TrueSpeed, and the community project B4RN in the north of England and parts of Scotland now, I believe. These companies are delivering full fibre in their communities, but most of us recognise it is going to take a long time to get full-fibre connections to everybody, particularly in parts of rural Scotland.

Therefore wireless networks have a role to play as well. They have different business models and they do not operate just on one monolithic model that applies to the whole of the UK. They can apply their models to different circumstances and different approaches. For instance, Hyperoptic I am sure will tell you they focus on property developers because they do MDUs. CityFibre has relationships with local councils, as do others. There are different approaches that people can take. One thing that I think they all have in common is they do not automatically demand a subsidy for getting out of bed. They do not require subsidy in order to go to places. That is not to say that they have not participated in BDUK programmes. When the BDUK process became competitive after the first phase of programmes had all gone to BT, some altnets did start participating in those programmes. As a general rule, they tend to focus on delivering services on a commercial basis, whether it be urban or in rural areas.

Q231 **Chair:** Is there a premium on your services as compared to what you would expect from—

Malcolm Corbett: No, there is not.

Floyd Widener: As with James, our big differentiator is we are full fibre. We own our own network. We invest. Our investors have us invest in the network for an eventual payback over time. The fundamental difference is also the way that we are structured. Commercially we are structured. We have a dedicated team that works with local authorities throughout the UK. We have a team that works with over 110 developers throughout the UK, notably some developers for new home builds in Scotland. We also have two teams, one based in London and one based in national cities, that sell to retrofit what we call MDUs or multi-dwelling units. The deployment of our services is done across all of these portfolios using the latest technology.



HOUSE OF COMMONS

You might have read in the press on 12 February a bit of marketing, but again to show the investment that we are making and how it is future-proofed for our customers and our investors, as we trialled with Ofcom present in East Village a 10 gigabit connection to a residence there to show that our network is future-proof for the next 20 to 50 years.

Malcolm Corbett: Can I give a customer appraisal of Hyperoptic? Would that be appropriate or not?

Chair: Sorry, I missed that, Mr Corbett.

Malcolm Corbett: A customer appraisal of Hyperoptic. I am a Hyperoptic customer in the Royal Arsenal in Woolwich.

Chair: As long as it is brief.

Malcolm Corbett: I think our industry suffers, quite correctly, from an appalling reputation for never delivering to the customer what the customer is paying for. It is like walking into a pub, ordering a pint of beer, getting half a pint of beer and saying, "Sorry, that is an 'up to' pint of beer, that is what you are going to get". The altnets, because they are building new types of networks, particularly the people building fibre networks, deliver what they say they are going to deliver to the customer. I get it. I am a customer of Hyperoptic in the Royal Arsenal in Woolwich and they deliver to me a 1 gigabit symmetric connection for not much more cost than BT delivers very little to us. It genuinely is a 1 gigabit per second symmetric connection. It means that from the point of view of somebody who both works and has a teenage son and all the rest of it, everything works. That is what you need from your broadband. It is not the situation where you are complaining about the fact you have paid for something and you are not getting it. That is a huge difference.

Q232 **John Lamont:** I have met a number of alternative providers in my own area in the Borders and they express a frustration that most of the public funding that is available goes to BT and Openreach. I wondered if you shared that frustration that the public funding by and large does go to BT and you guys are not getting a share that maybe you might think you might be able to provide a cheaper alternative.

Michael Armitage: I have the scars on my back to show the many failed attempts to extract public money out of BDUK going back to the Rural Community Broadband Fund in 2012, if anybody can remember that. I have a very ambivalent view of the benefits of Government intervention. There are forms of intervention that can be very effective, and properly administered I think the voucher scheme is perfect. It is just not very well administered and we could improve it. This great, big, lumpy parachuting in of lots of money into a market, the first thing it does is paralyse anybody else's investment. The second thing it does is it takes twice as long as you think it should do. The third thing it does is generally end up with the incumbent. It is a model that perhaps was helpful in kick-starting BT into doing stuff, but I think the world has moved on. The technology toolkit is now so much more complete and much richer that



HOUSE OF COMMONS

the options open to Government to deliver appropriate technology solutions or to enable appropriate technology solutions to be delivered do not need the blunderbuss of big grant intervention.

The best decision I made yesterday was not to bid for the Welsh Government tender. That has relieved huge amounts of stress, huge amounts of management time, for a probably 20% possibility of success. We are now going to pursue our Welsh strategy on a purely commercial basis and eat everybody else's lunch while they are still going through state aid procurement.

John Lamont: Do the rest of you agree?

Floyd Widener: Yes. I would like to add that we believe that a tactical application of connected voucher schemes is extremely efficient. We have seen cases of that happening here in Westminster for the connected business voucher scheme that they provided. I believe that that application of funds is of interest to the competition and growing the industry. The one thing I will say that is peculiar is that when we look across local authorities and the portfolio of properties that they might have, it is not the case with all cities and all councils, but when we engage with local authorities, we are not asking for co-funding, we are not asking for them to invest, we are asking for them to pick up a pen and sign a wayleave to give us access to their buildings to increase the value of their assets and we invest that infrastructure.

I am perplexed that in some cases—and it is even true in Scotland—when we engage, either we lose engagement with the local authority or we cannot obtain a signature for a wayleave to bring a full-fibre network into their constituency in an urban area. The investment, the Government funding is one thing, but I do not think that is the problem. The problem is letting independent competitive organisations, such as ours, have access to install our infrastructure and even overbuild. I am a proponent of—you say, “I already have fibre in this city, why would you build a second network?”—because it is competitive, it is good, it will keep prices down and it will deliver continued economic development in the areas where you do overbuild those fibre networks.

We are looking already at 5G. You are looking at other economic benefits. Where my competitor here is deploying fibre, I would love to deploy fibre in the same places, but I need a wayleave signed so that I can get customers.

James McClafferty: You can use me.

Malcolm Corbett: The first round of the UK funding, the creation of the national framework, in the end meant just one company was on it, so there was no choice for local authorities and many local authorities regretted that, I know, because they have told us, “We would have preferred to have had procurements with some choice in them” but we were where we were with that. It became competitive when Chris



HOUSE OF COMMONS

Townsend took over BDUK in 2014 and realised that we were not necessarily getting the best bang for the Government buck and the Public Accounts Committee looked at it and so on.

Since then, there have been some different approaches being taken but one of the big problems with this is that, from a public policy and an operational point of view, you can understand why both the politicians and the officials see a big programme as being the way to go because it is easier to do, whereas a lot of smaller-scale projects are much more difficult to do. Yet if you could find a way of encouraging those smaller-scale projects, they will actually happen—and the voucher scheme is quite a helpful way of doing that—then you almost certainly will end up with better value for money from the public purse in the process of doing it.

One of the things that Chris told me, which astonished me, was that Hyperoptic, which only operates in urban areas, 50% of its footprint was BDUK-wide, in other words, no superfast broadband, and I thought, "That can't be true" until I realised that I lived in one, in Woolwich, down the river. So it is not just a problem of rural areas. It is a major problem for rural areas, but the whole question about how you structure interventions will affect how those get taken up and dealt with. Obviously a company like BT is always in pole position for any large procurement.

James McClafferty: There are a couple of things BDUK has made great strides on. Look at the connectivity to the Western Isles, for instance, that was a big thing and it had to be done. Then LFFN, for example, is coming along now, so that is more public subsidy, but it has set the bar really high. It is full-fibre networks and it is local so it has the interest of the councils, and that really matters, because they are so part of this process. Subsidy is good, we welcome it. We have not been the recipient of it yet, but we welcome it. However, there are other ways of doing things.

In the three years I have been at CityFibre, there has been a change at councils. Rather than doing the same thing year in, year out and pouring their cash effectively into the same options, which are the incumbent options, they are looking at alternatives and the alternatives are the guys you see here. All the contracts we have won in Scotland have been on a best-value basis, where we beat the incumbent.

For us to beat an incumbent, we have to start from scratch, excavate old roads, put in two four and a half inch ducts, which are the really valuable part of this jigsaw, which contain almost 4,000 fibres, and we start from scratch and we build that, because the council use their leverage and might in the market to force something new. They have stopped going back to the same people they had had five years ago, saying, "Can I have another 105 of those things I ordered the last time?" Just a different approach helps.

Q233 **David Duguid:** We hear from alternative network providers that they are



HOUSE OF COMMONS

disproportionately affected by business rates. Why and how do business rates affect you in a different way from larger companies?

Malcolm Corbett: Effectively you get charged business rates when you light fibre. It is treated as being like property, done per metre and the regime is such that there are effectively different rules that apply to different providers. BT and some other providers effectively get charged a different amount of money than small providers. However, one of the recommendations we made in the "Building Gigabit Britain" report was that there should be a moratorium or some sort of relief on business rates and I must admit I was quite astonished when the Government said yes to that, so they have given relief on business rates for five years and there are measures that can extend that relief over a longer period of time. In a period when all providers are trying to build new fibre networks and fibre networks are vital for all types of new services and networks, it is very helpful to get that sort of relief.

Q234 **David Duguid:** The five years' business rates relief, that is only England and Wales at the moment, isn't it?

Malcolm Corbett: That is a good question. I don't know.

David Duguid: I believe the Scottish Government have committed to match that, but I do not know how exactly.

Malcolm Corbett: I apologise. I did not realise that.

Chair: I have just been advised that it will be matched in Scotland.

James McClafferty: A comment: I know of one council where the assessor is based in the same building, the chief executive is pressing me for more fibre investment and the assessor upstairs is pressing me for more invoices. It is a funny thing.

Q235 **David Duguid:** Any further comment on business rates?

Michael Armitage: Just to pick that up, and this will not make me popular with the panel probably, the US model says that business rates get earmarked for the servicing of municipal bonds, which fund infrastructure in the first place, so there is a very well-demonstrated model in the States. Something like \$50 billion of infrastructure finance has been raised through municipal bonds, which are serviced by the business tax rate that is generated as a result of that infrastructure investment. It is not completely either/or or black and white. You can see the economic case for levying some sort of tax on digital infrastructure if that levy is supporting the funding of that infrastructure in the first place. It can be a facilitative mechanism, but that is obviously not the way the UK has gone.

Q236 **Hugh Gaffney:** As alternative competition in the network operating in rural areas, how do you look on the higher cost to deploying the broadband infrastructure in rural areas? How do you all manage it, being competitors, incumbent, you are moving in? How do you manage the



higher costs?

Michael Armitage: We have a low-cost deployment model. When we build a mast, it is very often just a piece of scaffolding in a farmer's field. We take a view that as long as we stay below the planning requirement, the 15-metre height restriction—once you go beyond 15 metres you have to go for planning permission—if we stay below 15 metres height, then we have a very quick, flexible and low-cost business model. We can build networks quickly and very cheaply. It is a very small piece of infrastructure that we are committing to. It is a completely different case for the fibre operators, but if you are in a wireless mode, you want to be building a network close to where people live and if you are building it close to where people live, that is probably going to be at 5 metres height above the ground, under the roof eave, rather than in a huge Arqiva mast 10 miles away.

Malcolm Corbett: The wireless operators operate on the basis that the end connection is going to be wireless and therefore they are not having to dig holes in the ground, sticking fibre in and so on. But they do have to get the connection from that mast back into an internet point, it is sometimes called the backhaul connection.

With fibre networks, rural fibre networks being either built commercially or on a community basis, the tendency is to operate on the basis that if they can get the investment in, they are bringing in brand-new investment and not usually trying to operate an existing infrastructure, and they are doing it in areas where people have got basically crap services now, so if you are Gigaclear, Matthew Hare, and you turn up in a village somewhere in the south-west of England, on a purely commercial basis you can expect to get at least 30% of the population signing up before you even dig a hole. They expect to get something like 60% to 70% of people signing up to the service within the first two and a half years of building the network, which means your take-up rate is extremely high.

If you are a community-based project, like B4RN in the north of England, which is community owned, it is a co-operative, it is community-shared, everybody sticks in some money in the first place and that gets the network built. Their take-up rates in some parishes are almost 100%. They do not cover absolutely everybody. It is a somewhat different business model.

If you are BT, you are operating on a mass scale where you are expecting the take-up rate to be—originally they were expecting 20% on superfast broadband; it has now gone up to 30% or 40%—but some of these alternative providers are going in and making an investment on the basis that they are so superior in what they are delivering. Imagine you are getting sub-2 megabits or sub-10, and now you can get 100 megabits symmetric, you can run your business, you can do whatever you like, it is completely different. It is transformative so people do sign up.



HOUSE OF COMMONS

Floyd Widener: Although we are an urban provider, we run what we call our site business case, so we look at an area of building, a city, and run site business cases. As we start in a city centre, where the highest density is of MBUs, opportunistically, if we sign a deal with a new build developer that obviously is not going to be in the city centre, that is 20 or 30 kilometres away, we will extend our offering, light the exchange in that area and then look between the city centre and that development and say, "What is now profitable for us to deploy and invest the infrastructure in?" If you take the example of Glasgow, right now we are in the process of lighting four new exchanges, which my sales organisation is ecstatic about, because that is going to open up a whole new portfolio of what we call viable sites. As it is our own investment, we obviously need a return on that investment for our investors, and we are very methodical and very precise on how we calculate that investment and where we will go with our network.

Q237 **Deidre Brock:** Mr Corbett, you have previously expressed some concerns about the USO, the obligation that the UK Government are bringing in, suggesting it might depress competition. Could you talk about that for us?

Malcolm Corbett: I am not sure that it is particularly about depressing competition. It is more the fact that it might as well have arrived from outer space, the USO commitment originally, as a way of trying to get some movement, to make sure that people were not being stuck on really appalling services. TalkTalk is a member of INCA and they support it, so some altnets are very clearly supporting the USO or support the principle of it, but from the point of view of most of the alternative operators, whether they be deploying wireless networks or fibre networks, they are by definition deploying superfast networks or ultrafast networks, 30 megabits or above, or 100 megabit gigabit services. The 10 megabits USO—and it is 10 megabits down and 1 megabit up—is a bit odd in that context. The anticipation or the plan of R100 is to deliver 100% of Scotland with at least superfast services, so where does the USO fit into this, in a sense.

When you go and talk to Ofcom about it, they have a little team of people working on this stuff now, and they are doing the job that they have been given, which is to design an obligation programme that will do 10 megabits down and 1 megabit up. That means that if an alternative provider is going to participate, whether it be a wireless provider or a fibre provider, they will have to design a product that is effectively sub-par from what they are going to deliver anyway, so it all gets a bit odd. That is my way of putting it.

Q238 **Deidre Brock:** What would you like to see the UK Government do?

Malcolm Corbett: The trajectory we are on is finish the superfast programme, make sure that gets done and that everybody gets the services they need, and work on the outside-in type approach for some of the areas that are left behind. The points that have been made about



HOUSE OF COMMONS

R100 are quite good and there are lessons being learned, I suspect, in that approach from Scandinavia, where people have much, much better connectivity that we do in this country, particularly full-fibre connections, and it has often been designed in a process that means that harder to reach areas are being done first and the level of public subsidy in those programmes is often much smaller than the sorts of subsidies that we are handing out now.

Q239 Deidre Brock: In one of the submissions someone was talking about working in Altnaharra, in Sutherland and Ross-shire. Who was that? Not one of you?

Malcolm Corbett: Not me.

Michael Armitage: I am happy to have a go at it.

Q240 Deidre Brock: It is a very remote area and apparently whoever is dealing with it is having a lot of success with getting superfast out there.

Can you tell us a bit more, Mr Armitage, about how your particular technology would work and how you might take part in delivering this USO? I understand the limitations, as Mr Corbett has just explained.

Michael Armitage: We will be participating—we are participating—from the periphery in the R100 programme. We are not big enough obviously to be a lead contractor for the programme, but we are working with a lead bidder. We will be providing their infill. They lead with their fibre skills and we will fill in the gaps with the wireless. We will be playing in the R100 playing field, assuming we are successful.

Our model is flexible and adaptive. One of the great things about the BDUK programme to date is that it has delivered a lot of fibre to a lot of communities. All the discussion about people's frustration, about still getting rubbish broadband is because, as we all know, they are on the end of long rubbish pieces of copper. If you accept that the copper is obsolescent and that is getting reflected in that discussion around the reduction in the wholesale line review, wholesale line pricing, there is a recognition that this is really past its sell-by date as a technology. We are using wireless to go from the fibre cabinet that everybody can see and are frustrated that they are not getting decent service from. We broadcast from that cabinet point. We broadcast one, two, three kilometres, depending on the geography.

I was going to ask if I can be allowed special provision to leave at 12.15, which is my drop-dead date to get a flight up to Lerwick, because I am talking to Scottish Aquaculture Shetland.

Chair: We will be finished at 12.15.

Michael Armitage: Good. I am off to Shetland this afternoon to discuss the connectivity of the fish farms.



HOUSE OF COMMONS

The point is that wherever BT has got to with its fibre cabinet deployment, we applaud from the sidelines and then we become a customer of Openreach and project on from there.

Q241 **Deidre Brock:** What are the barriers you face in relation to TV white space?

Michael Armitage: Availability of installation engineers. We are working on an apprenticeship programme with something called the Confederation of Aerial Installers. Would you believe such a trade body exists? They look after Sky dishes and satellite broadband dish installation and we are retraining them to do TV white space. It is a resource issue.

Malcolm Corbett: One of the other things that quite a number of the wireless providers have been saying is that it would be extremely helpful to them to get some access to licenced spectrum in bands, which are going to be useful but will be very difficult for mobile operators to deploy in rural areas. For instance, at the moment Ofcom is going through a process of auctioning spectrum in the 3.4 to 3.8 gigahertz range. Basically what that means is that you can get broadband signals, high-speed signals through trees and foliage with those bands, which is really helpful. However, the spectrum auction process means that they are looking at big national licences going to one of the big mobile operators, who will struggle to be able to use it for mobile services in rural areas, and yet it is really quite well designed or quite useful for fixed-wire services, in other words, being able to deliver better services to customers 10 years in advance of them getting a fibre connection in some of those areas. Any support that we can get to help push Ofcom into thinking differently about how some of that spectrum might be allocated just in those rural areas I think would be massively helpful. It could be a great thing that you could do.

Deidre Brock: That is interesting.

Q242 **Chair:** Maybe you could help me with this one. Why don't the big suppliers just do that, the people we just heard from, all these innovative solutions, particular uses of wireless?

Malcolm Corbett: Because they are big dinosaurs.

Michael Armitage: I did have a quick conversation with Brendan before I came in. I said, "Are you guys still looking at TV white space?" because they were part of the original Ofcom pilots and he said, "Yes, we did look at it and you never know with BT, we may put it back on the agenda, but it is not a current thing".

Q243 **Chair:** What we are hearing are very innovative solutions and something that obviously would work in rural areas, particularly patches like mine, and you are saying, "Why we are not all for this?"

Malcolm Corbett: Because they are too big and slow. It is too hard, it is really hard.



HOUSE OF COMMONS

James McClafferty: I think they do know how to do it but big businesses tend to be run by accountants in the UK and anyone who thinks differently, it is kind of surprising.

Michael Armitage: To be fair on BT, they are under significant market power obligations. If they rolled out a TV white space product, they would effectively have to do it nationally and there are not enough radio engineers in the country to serve a national rollout at this point. BT, to be honest, would have to wait years to build that.

Malcolm Corbett: That is a very fair point. That does create the space for the smaller companies that are innovative—

Michael Armitage: To rifle-shot.

Malcolm Corbett: Exactly, to go and address areas that are underserved and therefore have a lot of customers or a reasonable number of customers who are feeling aggrieved, and quite rightly, because they are not getting what they are paying for.

Q244 **Chair:** Do you think there would be a requirement for some sort of strategic approach to it, where you have BT, the TalkTalks, the Virgins doing all this to cabinets and then leaving it to the specialists, if we could describe you as such, to take it from there?

Malcolm Corbett: We paid, as taxpayers, for an awful lot of BT cabinets to have fibre put to them. I think it would be incumbent on that process to ensure that that fibre can be opened up and allowed for other service providers to use. This is one of the constant debates in the industry, about how can we get better access to the existing infrastructure, a large amount of which has been paid for by us. We have paid for it and if it is not capable of delivering services to all of the customers in the area because the copper lines are far too long and you cannot get the connections, there are plenty of other people who could have a go at it. Now, that does not mean to say it is going to work everywhere and they are not always going to succeed, but nevertheless innovation and support for competitive investment cannot but be a good thing in these processes.

Q245 **Christine Jardine:** It is probably oversimplifying it, but from what you said about being taxpayers and the cabinets that have been opened up, is there a danger that the rural communities have lost out because we have done that, that perhaps if there had been a more open attitude, or is there a way that there could have been a more open attitude?

Michael Armitage: The game is not over; the game is just beginning for us.

Christine Jardine: That is good to hear.

Michael Armitage: We have spent some very frustrating years, always being marginalised, sidelined, overbuilt by BT. There was a very eloquent



statement from an Openreach representative about the market review process. What she did not mention was that in the process of participating in the open market review process, you are telling the world what your plans are. That is meat and potatoes, that is gold dust for BT, because they just shift their network upgrade plans accordingly. We had a three-month long dialogue with Digital Scotland around our Loch Ness network to say, "This is what we are doing, this is what our plans are". At the end of the day, for whatever reason, they were not prepared to what is called descope the network from the R100 procurement, so we faced—we still face—the risk that we will be overbuilt by whoever wins the north of Scotland network. That is a risk we are prepared to take because, to be honest, we are delivering fantastic service, customers love us and they do not love the alternative.

Malcolm Corbett: The other point is that we are on a path here, which is replacing all the phone lines with new fibre optic connections, wireless connections and so on, and that the full fibre and 5G mantra does really mean something. It is about an ambition for the whole of the country—so that is all parts of the country—to have a genuinely world-class infrastructure. I know Scotland has had an ambition to have a world-class infrastructure for quite some time, but that moves beyond what we currently call superfast broadband into replacing the old phone network over quite a long period of time. It needs a co-operative effort from the whole industry and from the public sector to ensure that gets done in a timely fashion and does not leave anybody behind; that is the big job here. That will then give us the infrastructure we need for the rest of this century.

James McClafferty: A quick point: the 10 megabits USO and the 30 megabits Reach 100 programme are very welcome. It is great that there are going to be legal minimum thresholds for everyone. From a competitive point of view, however, the UK has just shy of 3% fibre to the premise coverage and Spain jumped from 63% to 83% this year, so there is a big gap, a massive gap, between us and our competition. You look at Spain, France, Italy, look at all those countries, Portugal, they have almost finished this project. We are at the start. The head of Vodafone fibre the other day—a nice French guy and much more articulate than me—he said to me, "It is funny that everyone thinks I am in a new job. I have been in this job for years, I just haven't ever been in this job in the UK yet". So there is a huge gap. We are at 3% fibre to the premise coverage and the minimum thresholds are really welcome, but we need a new, full fibre modern infrastructure for everyone. You have to acknowledge that.

Malcolm Corbett: If you are in a rural village in Sweden, you expect to have a fibre connection to your house or your business; it is the norm.

Q246 **Paul Masterton:** I want to come back to the Digital Infrastructure Investment Fund, which the UK Government have announced. Could we perhaps drill down a little more into the opportunities this offers for small



HOUSE OF COMMONS

providers such as yourselves, but particularly how access to that funding is going to work? Do you see that there could be problems with the methods by which you can access that funding?

James McClafferty: A defender of local full-fibre networks, I think they are all good and I understand that the awards are being made to the local authorities that have applied for LFFN, for example. That is good, because the focus on what local need is is on the local authority and it is not about connecting the authority, it is about connecting the region, whether it is business, mobile or the business sector. I hope there are no problems with it.

Malcolm Corbett: Specifically on the Digital Infrastructure Investment Fund, that was one of the recommendations we made in the "Building Gigabit Britain" report, but it was a recommendation that we made years ago to Maria Miller, when she was Secretary of State, to try to change the dynamic from focusing public support only on subsidy programmes in which BT was inevitably winning all the time because they were the only competitor, the only bidder, so there could only be one winner, into a different way of supporting alternative providers. It is about investment as opposed to subsidy and that sits more naturally with this set of companies and these sorts of people. We were very pleased when the Government announced they were doing it.

One of the things I think Michael, for instance, argued quite strongly is that there should not just be one fund, that there should be alternative ways of accessing some of that investment funding. That is happening, and some investments have started to be made. It is designed really to attract newer, smaller companies, to help support them, which we think is a good thing. We are very supportive. We are very keen to work with the fund managers to ensure that they get the right sorts of deals, flows through the process and that money can be deployed to build fantastic new networks. Brilliant.

Q247 **Hugh Gaffney:** What impact will the new relief on business rates have on your infrastructure plans?

James McClafferty: It is welcome; it is good news. The less overhead for our partners to worry about and for us to worry about the better, but it is not affecting us. We are using our capital to invest. We have four huge projects in Scotland that we want to expand into the city regions and beyond. We have looked at most of those local authorities already. I have most of them designed. I just need to find a mechanism and a partnership that works to push them out further. We welcome it. Three years ago we had no gigabit cities in Scotland. Now we have four gigabit cities in Scotland, and I think we have about 350 kilometres of fibre in the ground. If you track it back, my numbers, I reckon that is about £1 million per month into Scottish fibre infrastructure. We only had one employee three years ago in Scotland, so it has grown really fast and we are just getting on with it.



Malcolm Corbett: The problem with the business rates is the application of the business rates in rural areas for fibre connections, made a difficult investment case harder. That is the obvious thing. That was compounded by the fact that there were these sorts of different regimes applying to different players, so BT basically got a different approach to everybody else, which some people would argue was a little unfair. Then that was compounded—because this is an issue that has been going on for ever, a long time—by the Valuation Office then coming with a very strange scheme which meant that different levels of business rates were being applied to different counties, only in rural areas, and it all became quite complicated and strange.

The only thing we could think of to do was to say to Government, “If you really want to encourage deployment of the new infrastructure, put a moratorium on that for a period of time to allow people to invest without all these sorts of challenges and barriers”. To be honest with you, we never expected them to say yes, but they did, so we were really happy.

Q248 **Hugh Gaffney:** Given then that the business rates are calculated before relief ends in 2022, would you prefer to have that level playing field before that? The relief is going to end in 2022 or it is going to be reviewed. Do you think the level playing field should come before that or do we wait until 2022 to review it?

Malcolm Corbett: There is a lot of work and discussion going on about how this should work later and although I am not involved in that part of the conversation, as far as I understand it, there are provisions for that relief to be extended beyond that period of time and we are obviously very hopeful that that will happen, but certainly it gives us a certain amount of time to work out what a more appropriate regime is going to be in the longer term. That is the task now.

Floyd Widener: Regardless of the rates, by 2022 we will have passed two million homes, and by 2025 five million homes, so our business plan is set; we are running with it.

Q249 **Ross Thomson:** If you had seen the previous session you would have seen the friendly competitive rivalry between some of the providers, which is very healthy, of course, but Ofcom has recently announced that BT must make its poles and tunnels available to rival providers. What has been your experience of using Openreach’s infrastructure to date and what difference do you think this proposal will make?

Floyd Widener: We are PIA certified so the physical access we use in some cases we have run tests on—we are not doing poles—and it is really hit and miss, based on where that infrastructure is. You can use it to go under one building and find a duct and a box in good shape and use it; you can go down another street and it is a nightmare. So it really is hit and miss. It is a logical tool that a network deployment organisation such as ourselves needs to look at as one of the case scenarios we might use in our site business case to see if a site is profitable for us or not.



HOUSE OF COMMONS

Another thing that is important around the physical access regulations is when you look at new build construction. There is a trend in the United Kingdom where the developers always look to Openreach for the standard and the infrastructure that they want around their buildings, where organisations such as ourselves can provide that same infrastructure, if they want us to. That is not our strategy, but what is key is the communication saying that a certified organisation such as ours has the right to use that infrastructure to deploy our fibre. Sometimes that communication is not as open and as frank with the developers on behalf of our competitors who were seated to my left earlier today and we just consistently push.

Although their new CEO, as he was complimented earlier, is making some great strides in that communication, every once in a while we need to bring him back to the table and say, "No, we are certified to deploy to that development through your infrastructure and can you please reiterate that?" It is key to the development.

Malcolm Corbett: PIA, the passive infrastructure access, as Kim Mears said, was invented years ago but it was hedged about with so many caveats and issues, problems and costs that nobody used it really. A few people did. A bloke called Andrew Conibere, Call Flow Solutions, closely followed by Ben King from WarwickNet, small companies, they got stuck in and started using it, ducked and dived a bit, ignored some of the rules and just got on with using it to put in new networks pretty successfully. WarwickNet now has lighted more than one business park a day and from there, WarwickNet, based in Coventry, is now down in the Greenwich peninsula and all over the country. Some people are using it quite effectively, but nobody yet has said to me that it is actually a product that can be used at scale. In other words, could TalkTalk or CityFibre or Hyperoptic or anybody say, "We are going to have 1 million premises in these towns and cities and we are going to use PIA—or duct and pole access, as it is—in order to deliver it"? That is one issue and that is for the reason that Floyd was saying; it is a bit hit and miss.

Secondly, in rural areas, there are a lot of areas that do not have ducted infrastructure or poles. They have direct buried cables. In that case, there is nothing you can do. You have to dig another hole and that is it. Companies like Gigaclear do not use any PIA in their rural deployments. They only use their own dig. I spoke to Barry Ford, the founder of B4RN, the rural community project in the north-west. They have just signed up to PIA, but specifically in order to get into new build housing developments and overbuild Openreach, which I think is quite funny, for a community co-op to overbuild Openreach, but there you go. It is a bit strange.

One person I was speaking to not that long ago, Charlie Boisseau from Commsworld, based up in Scotland, he wanted to use PIA to put fibre over a set of Openreach telegraph poles for a particular project and worked out it was actually cheaper to build his own telegraph poles right



HOUSE OF COMMONS

next to the existing one, which rather defeats the object of the whole thing.

What Ofcom is doing is good, it is helpful, people are starting to use it. It is not clear that it is usable at scale. Ofcom is saying—hoping—this can be used to deliver full fibre to at least 40% of the country with competitive networks. It is a great ambition but we are not at all convinced; it is not the silver bullet.

One other issue, not small, but probably quite major that has been raised is that as soon as you say to Openreach you would like to access their existing infrastructure in town X, they immediately know you are going to go there and of course that can provoke a competitive response, one might say. One of the concerns we have is that other technologies like G.fast, which is a dead end technologically, can be used as a way of inhibiting competitive investment in full fibre in other places. It is all a little bit fraught, but it is good to have a go. People are trying it. Difficult.

Q250 Chair: We have to make sure that Mr Armitage gets away to Shetland. Our last question: I am listening very carefully to your relationship with Openreach, BT and your other big competitors. What interests this Committee is that there is a lot of public money going into this and we want to make sure that it works and that our constituents are connected. How would you characterise your relationship with the big players? Is there any way you could suggest to this Committee by which that could be improved so we can get the R100, the maximum layer with the fastest speeds possible, to our constituents? You have had a lot to say, Mr Corbett. I will come to you with that one.

Malcolm Corbett: Do not give all the money to BT Openreach. Make sure you have some competitive provision in there. In terms of the relationship, it was very difficult, one might say, a few years ago, but with the changes in Openreach, the new management—

Q251 Chair: Has that made a real difference?

Malcolm Corbett: With Clive Selley and Mike McTighe in Scotland, that is a good question. In general, Clive Selley and Mike McTighe are much more open to engagement. We have them speaking at our conferences. Obviously they have a competitive position, but I do think they recognise the fact that a bit of grit in the competitive oyster—these guys here, building new networks and delivering fabulous services—pushes them to do more and they would like BT Group to give them more access to capital in order to build more. They have made that very clear and you can see that in some of their statements. They cannot do copper in lots of rural areas, so they are starting to do more fibre in rural areas.

What we need to do, we need to forge a more co-operative relationship within the whole of the industry and that effectively means that Openreach comes to understand that in this new world, they are not going to build all the new fibre connections, although ultimately they will



HOUSE OF COMMONS

be able to use a lot of those fibre connections to deliver great services to BT Group.

Q252 **Chair:** This has just occurred to me. Should there be someone who is strategically responsible for all of this, bringing together every single sector of the networks infrastructure to offer leadership?

Michael Armitage: I am looking at this in answer to another question, but this is a good answer to your question, that there are the number of stakeholders involved in policy that do not talk to each other: Westminster and Scottish Government; DCMS and Her Majesty's Treasury; local councils and ScotGov R100 CBS; Ofcom and Ofcom—so Ofcom does not talk to Ofcom about TV white space; I had to brief the Ofcom universal service obligation team on what TV white space is, even though Ofcom essentially invented it—and Westminster and Brussels. There is massive dysfunctionality in Government, I would have to say. Sorry, gentlemen.

Q253 **Chair:** This is the sort of issue we will explore when we get the Scottish Government and UK Government here, but it is interesting to get your view, who are at the sharp end of delivering this.

Michael Armitage: If I can, one final point: the closer you get to the customer, it seems the more switched on and engaged the Government is. We find local authorities much more able to be helpful than, for example, Westminster. We just play a sort of jostling game with Westminster, but in local councils, certainly in Scotland, we are finding open doors, open arms and a very strong welcome.

Malcolm Corbett: With R100 specifically, make sure you have the backhaul connectivity into all the areas you want to really get covered.

Floyd Widener: I would say let us give the three that you had up here a run for their money, keep the competitiveness open, encourage your constituencies that have social housing to sign wayleaves with organisations like ours so that we can invest in the infrastructure and keep happy customers. Go out and look at Trustpilot, any of the places that rate independent small organisations like Hyperoptic, and we are a four-star to five-star rating when everybody else is zero to one.

Chair: We are grateful to all of you. That was very interesting and very helpful. Again, if there is anything you feel you could usefully contribute, we are always open for further submissions, but thank you for today.