

Briefing for analysts : Telecoms

16 December 2009

Ed Richards
Chief Executive

Good morning, everyone, and welcome back to Riverside House. We are going to cover a number of things this morning which I will come to in a moment. Before I do that, a few words on a recap of the year for us.

We have done an awful lot this year as hopefully you are all aware. We have made a significant move which will be followed next year or during the course of this year on NGA, particularly I would highlight the pricing freedom that we established during the course of the first half of this year. Closely related to that, of course, we made some amendments to BT's Undertakings, to again facilitate and encourage the moves towards next-generation access. We set LLU prices, obviously subject to appeal, but those prices were set and that has enabled us to move forward.

We have undertaken the Mobile Sector Assessment, which we will talk a little bit more about in a few moments. We also during the course of this year, for those of you who have been following this for many years, removed the last fixed line retail regulation. That has taken 25 years to do in this country, but we have finally got there and I am very pleased that it is Ofcom that has been able to do that. Alongside that of course we also reduced substantially regulation in wholesale as well, where we identified competitive markets.

We also have had the European Telecoms framework re-established and re-set, and we will be covering that again this morning.

In hand and upcoming, the MTR Review, and we will cover that; very important next phase and market reviews around WLA and WBA; a lot of work around Spectrum clearance which we will also cover to clear the way for the Spectrum releases that will be the raw materials of the future communication services; and of course as a back-drop to all of this, the Digital Economy Bill which proposes a change to some of our duties and which is in Parliament at the moment, and I am very happy to talk about that at the end if people are indeed interested in it.

For this morning what we are going to cover is firstly a mobile update, which Stuart McIntosh, our partner for the Competition Group, will do. We won't pause for questions at that point this morning, because there is obviously a very close relationship between some

of the issues we will cover there and what we have called the spectrum update, which Graham Louth will cover. I suggest that we take those two as a group, and we will then stop and take questions on Mobile and Spectrum issues. We then go on to cover the pensions review, which we published earlier this year, and that will be led by Craig Lonie, who has been in the lead on that piece of work, and the finally the developments in European regulation with the passing of the Framework Directive, and Alex Blowers, our Director of International, will cover those issues for you. We will then wrap up with any questions and answers relating to anything we have covered during the course of this morning, or indeed any broader issues that we are able to pick up.

With that I will hand over to Stuart, and we will kick off with the Mobile section.

Mobile Section

Stuart McIntosh

Partner, Competition

Good morning ladies and gentlemen. As you have probably already have guessed, I have a cold, so that means my West of Scotland accent will be even more impenetrable than normal, so I hope you can hear me okay. It does also have the side-effect that I will not be able to participate in the Ofcom choir session this afternoon, which everyone is absolutely distressed about, I can tell you! Anyway, let's get going.

Mobile update

What I would like to do is provide a brief update on a number of issues we are working on in the mobile sector, and there are three main things I would like to cover. One is to talk about the Mobile Sector Assessment and where we are on that; secondly, to talk about where we are in respect of the review of mobile call termination charges; and then third, to look at some broader implications in relation to some of the things we see in respect of the sector today.

Mobile Sector Assessment: Core findings

Turning to the MSA, we started work on that in the early part of last year, and basically the question we posed ourselves was whether the Regulatory stance that we had adopted historically in respect of the mobile sector remained broadly appropriate. Just to remind you in respect of that, that largely relied on competition to promote and look after the

interests of consumers, but based very largely on a framework defined by what we do in respect of our Spectrum policy termination rates and consumer policy.

We conducted a fairly considerable amount of research looking at the sorts of services that people are taking, looking at what has happened to prices, looking at what has happened to customer satisfaction, competition, technological developments and so forth, and tried to sketch out both what had happened historically and what the prospects are for the future. We consulted fairly extensively within the industry, got a large volume of responses directly from consumers, representatives of the consumer agencies as well as a lot of the main stakeholders in the industry, either current or prospective.

Where we have come out on that - and it has largely reaffirmed from our perspective the benefits that competition has driven in respect of the mobile sector over this past many years now, really since the sector's inception - what we have seen is that penetration rates are very, very high. Customer satisfaction levels in the mobile sector are very high, typically in the mid-nineties in terms of percentage, which puts them above the satisfaction levels that we see in some of the other communications markets that we regulate. Telecommunications prices for mobile have fallen consistently in real terms over time, and there has been a tremendous amount of innovation around the service in terms of devices, services and the sort of propositions that are available to consumers. We really do feel that the competition has driven very considerable benefits to consumers, and in some measure has done a lot of the things that we as Regulators would like to see the market doing. So one of the challenges for us in the sense of looking forward is to maintain and enhance those consumer benefits in light of some of the developments that we see in the sector today, that I'm going to talk about a little later on.

There are a few specific things that I would like to touch on in relation to the MSA. We have concluded that there is no need for a formal market review of the sector. A number - not many, but some - respondents suggested that we should be looking to translate the sort of access regime that we have in the fixed market, based largely around BT, to the mobile sector. We have concluded, based on the competition we have seen and the evolution of the market that we have seen, that this would not be proportionate or appropriate, or certainly not at this point.

Second, it has reaffirmed the need to have a continued focus on the consumer and the consumer policy issues. In truth, practices in the mobile sector have improved quite measurably over this past 12-18 months; 12-18 months ago we were having very significant problems with scams based around cashbacks, people not being able to get money they were expecting, and so forth. That has largely disappeared from the sector. Equally,

complaints that we receive in Ofcom in respect of mobile mis-selling have fallen steadily over that period, and are now considerably below the levels that we see in fixed today, so we have seen very, very significant improvements in the mobile sector with respect to delivering for consumers, but we feel that this is an area that still merits attention and focus.

Third, it is important, we believe, to continue to promote access to mobile services. It may seem incredible to think about this but there are several million people in the UK still today, adults, who do not have mobile services. For the majority of them that is elective; it is voluntary - they can afford to take the services and they choose not to, but for a significant number of people that is not the case and that is particularly the case in respect of some older consumers, and some consumers who have particular disabilities. So we see this as an area of continued focus for us, and inevitably it is an area where our powers are not that extensive, but there are things we can do. For example, we have been working with our advisory committee recently for the elderly and disabled in helping trial SMS-based emergency services, which are particularly helpful for those people who are hard of hearing or who have speech difficulties, so there are a number of things that we feel we can continue to do there.

The final thing I would note is that the MSA has proved to be a vehicle for highlighting probably stronger concerns than perhaps we had initially appreciated with regard to coverage, and not-spots in particular across the UK, and particularly in some of the nations. Not-spots are quite a difficult issue to deal with because the causes of not-spots are very heterogeneous, they are quite varied. They can be due to planning restrictions, infrastructure, access issues, basic technological constraints, whether you are in-building and out-of-building. However, we do believe that a great deal more can be done here, so one of the things that we will be looking to do is working with industry and public agencies and others to understand the more systemic issues that are giving rise to these problems so that we can begin to help people address them and improve coverage and address not-spots. We shall be publishing our statement on the MSA most probably towards the end of this week. I would not say there is great prescience on our part but it has also been quite timely in relation to the issues we now have to think about in the context of the proposed merger between T-Mobile and Orange, and I'll come back to that a little later on.

Regime for mobile termination will be a focus in 2010

As I mentioned, one of the other policy tools or regulatory instruments that is being used in the mobile sector is in respect of termination rates, so let me just update you as to where we are with that. The current regime ends in March 2011 and termination rates generally have been a very controversial issue in the industry for a very extended period,

partly because of the commercial significance of termination rates. Previous charge control regimes here in the UK have been appealed on at least three occasions to my knowledge. Most recently, the 2007 regime, which was appealed to the CAT and then was subsequently heard by the Competition Commission, and that resulted in a roughly 20% reduction in the rates that we had determined at the time of the 2007 review.

Partly in light of that controversy, we flagged in the Mobile Sector Assessment that we wanted to initiate a more fundamental review of the basis on which termination rates are set here in the UK. We followed that through with a consultation document which we published in May of this year where we set out a number of different options that one might consider as a vehicle for setting termination rates. I have listed them here - they run from no regulation at all, just allowing the industry to set the rates, through the regime we currently have, which is based on what we call LRIC+, to which I shall come back to later, and other options such as bill-and-keep.

While we were going through this consideration, the European Commission, as many of you will know, have issued a recommendation on the approach which NRAs should take in respect of termination for both mobile and fixed voice services. The Commission's proposed approach is based on long run marginal cost and probably an important factor to appreciate in relation to that is that it is long run marginal cost excluding any direct contribution to fixed costs or overheads. If we contrast that to the way we have done it historically here in the UK, our approach has been based on long run incremental cost, and the economists in the room will probably be able to fully understand the distinction between the two. Probably the more important distinguishing feature is that in our approach, it has been long run incremental cost plus full contribution to fixed costs and overheads, so you can see that methodologically there is a distinct difference between the way we have approached this historically and the way that the Commission now recommend we look at this.

As those of you who follow this area closely will understand, when the Commission makes a recommendation of this form, it is not strictly binding but we are required to take utmost account of it, to use the formal language, in setting the actual rates. However, to step back a little, the next stage in our process is that we shall issue a consultation on mobile termination rates probably towards the end of Q1 or early Q2 of next year, and in that we will be examining the different options that I have illustrated here to understand the pros and cons. We shall also set out what we believe is the most appropriate way forward in light of the evidence that we have, and in light of the recommendation we have from the Commission. We shall also present quantification of the rates that would flow from the approach we are taking. By putting that out in around March/April next year, it will give us

the opportunity to get input back in from stakeholders so that we are then in a position to issue a statement on future termination rates well before the current regime comes to an end in 2011.

Broader developments in the mobile sector

On my final slide, there are some broader developments in relation to the industry. Of the four items listed here, I'll only talk about the first three and Graham will cover the last one.

One of the things in conducting the MSA that we probably did not foresee were some of the quite innovative and major changes that would come through developments in respect of devices and services provided over devices, particularly the growth of the iPhone, the competition that spurred and the responses from RIM and other providers, and the growth of application services, App Stores and so forth. That, to some extent, has evolved a model of service provision and competition which has been quite different from what was anticipated a few years ago around walled gardens and the delivery of services in that way. It has produced great benefits as it has seized the attention of consumers in the market and been very successful, and it is a new facet of service delivery and competition which we very much welcome and look forward to seeing develop. It is obviously doing a great deal to drive both the sale of high end handsets, which is trickling down into the middle of the market as well, but also helping to propel growth in mobile broadband. Thus it is a very welcome development.

The second thing we have seen, both in the UK and in Europe, is mobile operators looking more closely at opportunities to save cost through network sharing primarily in the local access network. Now, as regulators, you will probably understand from our perspective when we see people moving towards sharing networks, one of the things we want to understand is, what impact will that have on competition? What impact will that have on consumers? We would be concerned if we saw that leading to a path where there was going to be a lessening of competitive intensity and competition in the market.

The view we have taken so far is that we do not see evidence of that today and we are not inclined to intervene in respect of it. Indeed, we would hope and expect that some of the cost savings which arise from this network-sharing would be passed on to consumers by way of reduced prices in the future.

It also links to the final point which I just want to touch on to give you an update as far as status. This is the proposed T-Mobile/Orange merger. As all of you will know, the parent companies have confirmed their intention to merge their respective operations here in the UK but, because of the nature of the parent companies' operations across Europe, that

merger formally falls to the European Commission for their consideration. The parties, while in discussion with the Commission, as well as talking to us, have not yet formally filed with the Commission, although they are expected to do so relatively soon. At that point, the Commission, I presume with the OFT, will give consideration as to whether or not the issue will be heard and looked at in Brussels or here in London. That is really a matter for those two parties, it is not one in which we'll be directly involved.

As you would expect, however, we will be contributing fairly substantially to that assessment, regardless of whether it is held in Brussels or held here in London, or the UK. And we feel that because of the work we've done on the MSA we have a particularly well informed insight in terms of the competitive dynamics in the UK market, as well as a very clear appreciation as to what competition has delivered for UK consumers. So I think we shall be very well-positioned to contribute to that review. That is by way of a quick update and, as Ed has mentioned, Graham will talk to some of the Spectrum issues and then we shall take questions or any comments in relation to both after Graham has finished.

SPECTRUM UPDATE
Graham Louth
Director of Spectrum Markets

Thank you Stuart. Good morning, everybody.

Recent developments

Like Stuart, I shall give you a quick update on some key recent developments affecting the availability and use of Spectrum in the UK, and I shall concentrate particularly on some areas relating to terrestrial television and Spectrum for mobile broadband. Once I have done that, I shall comment briefly on some of the key challenges that we are currently dealing with in order to make that Spectrum available.

DSO proceeding as planned

I shall not ask for a show of hands, but I would not be at all surprised if many of you in the room were not aware that we completed digital switchover in the Granada region earlier this month, that is to say analogue television was completely switched off in Manchester, Liverpool and the surrounding areas earlier this month. One of the reasons you may not be aware is that it received very little coverage in the national press, which is essentially because it went completely according to plan, or at least almost completely according to plan. No story. That is a hugely important outcome as far as we are concerned.

As you can see from this graph, the Granada region was the first really big region in which digital switchover happened. In fact, it is one of the biggest regions in which digital switchover will happen throughout the entire programme. So the success of that switchover is really important to us, and it gives us increased confidence that digital switchover will be completed across the whole of the UK by the end of 2012. That, of course, is really important to the release of some of that spectrum for new services, in particular mobile broadband.

HD on Freeview now a reality

The second development that you may or may not be aware of – HD television is now being broadcast on Freeview in London, Manchester and Liverpool. One reason you may not be aware of this is because it has not really been launched as a service because consumer equipment is not yet available in volume. However, we are now pretty confident that HD on Freeview will be available to over 50% of the population in time for the World Cup in June next year, and that consumer equipment will likewise be available in volume for consumers to buy in time for that major event. So HD on DTT is a reality now and looking set for a successful roll-out across the whole of the UK by the end of the digital switchover process.

Gathering momentum behind use of 800MHz band for mobile broadband across Europe

Moving on to the mobile broadband sector, what we are seeing is gathering momentum in Europe, behind release of the 800MHz band, part of the digital dividend for mobile broadband services. We have now had nine Member States announce their intention to release the 800MHz band, and we expect others to follow in the not-too-distant future.

In parallel with that, the European Commission and the Parliament and the Council have all been making extremely positive noises about ensuring that the 800MHz band is, as far as possible, available for mobile broadband across the whole of Europe. There are Member States where this is going to be problematic. Some of the Member States border on to non-EU countries where the 800MHz band is used for non-broadcast purposes, and that brings challenges when it comes to releasing that spectrum for mobile broadband, but across a very large part of the EU, it now seems highly likely that the 800MHz band will be available for mobile broadband services.

And in terms of the technical work behind that, which is very key to ensuring that those services can actually be rolled out, we are close to completion of a technical harmonisation measure which will specify the technical conditions under which the 800MHz band will be available for mobile broadband in those Member States where they are

releasing spectrum for that purpose. So, very, very positive movements across the whole of Europe to making the spectrum available for mobile broadband.

More spectrum being made available for 3G services

We have also recently seen enactment of two very important pieces of European legislation, actually amending historical pieces of European legislation which will allow the existing spectrum used for 2G GSM services, the so-called 900MHz and 1800MHz bands to be used for 3G services. There was a European Directive, sometimes called the GSM directive, which set aside those frequencies for 2G GSM services, and as an unfortunate by-product about legislation, this meant those frequencies could not be used for 3G services. That legislation has now been amended in Europe, it has to be transposed into UK law by 9 May next year, and that revised legislation requires us to make that spectrum available for 3G services as well as 2G services so that enhanced 3G coverage and capacity will be possible through the use of this existing 2G spectrum.

As a side part of that legislation, we do, however, have to consider the impacts on competition that that liberalisation might bring about. Whether there is any risk to competition as a result of allowing that spectrum to be used for 3G, that's something that we were considering some years ago – over a year ago now – but has now been bound up in the Digital Britain process. If the Digital Britain process comes to a conclusion, as the Government would like it to, then that competition issue will be dealt with through that process.

Digital Britain: Spectrum modernisation

That brings me to the Digital Britain process, at least the spectrum modernisation part of it. I hope you are all aware that the Government is currently consulting on a direction to us to implement their so-called spectrum modernisation programme. It is a fairly complicated and large set of inter-linked proposals for how spectrums should be made available for new next generation mobile broadband services, who should be allowed to bid for what spectrum in a combined auction, who should have to release spectrum if they acquire new spectrum and so on, together with a set of obligations on the holders and acquirers of spectrum designed to promote investment in next generation mobile and the roll-out of those services to the vast majority of the UK population.

That consultation closes early in January and if Government then decides to proceed with the making of the Direction, they will have to take that through Parliament. That obviously is an extremely challenging timetable, given the up-coming General Election, but we are very hopeful that they can achieve that, given that we believe it is very important for

consumers that these issues are resolved as quickly as possible in order to ensure that next generation mobile services are available to consumers in a timely fashion.

Current challenges

Moving on to just give you a brief overview of some of the current challenges that we are addressing, as we have previously mentioned, the 800MHz band is very, very important to next generation mobile broadband. We have to do a lot of work to actually engineer the availability of the 800MHz band in the UK. We have to change our digital terrestrial television switchover plans. We have to move the frequencies that some transmitters will use so that, instead of using so-called channels 61 and 62 which are in the 800MHz band, they will use other frequencies instead. We have a major programme of work underway at the moment, working with the broadcasters to ensure that that transition happens both efficiently and quickly.

We also have to migrate some programme-making and special events users, the users of wireless microphones such as the ones we are using today, out of Channel 69 and into an alternative frequency, and we have identified a frequency they can move to. What we now have to do is put in place funding arrangements to essentially compensate them for the costs of moving from Channel 69 into the alternative frequency at Channel 38.

That is a major programme of work and we are very actively involved and pressing forward with that work at the moment.

Secondly, we published an update recently about a problem that has been identified affecting the 2.6GHz future mobile broadband band. This concerns aeronautical radar and some maritime radar that operate in the so-called 2.7GHz or S band. It has become apparent that some of those radar are susceptible to interference, or would be susceptible to interference from mobile broadband systems if they were deployed in the 2.6GHz band, and we are therefore going to have to find ways of upgrading those radar in order to eliminate the risk of interference. The problem is that those radar systems are safety-of-life systems, and we therefore cannot possibly go ahead with allowing mobile broadband into the 2.6GHz band until those radars have been upgraded in order to eliminate the problem.

Again, a major piece of work, working with our colleagues in the CAA, the MCA and the MoD in order to put in place a programme of work to upgrade those radar in order to eliminate that interference problem.

Finally, another new issue which has been in the press recently – fairly late in the day, the cable TV industry has woken up to the fact that the 800MHz band is likely to be used for mobile broadband, and they are concerned that it might cause interference into their

cable TV systems which use the same frequencies but obviously inside the cables rather than over the air. The magnitude of this problem is as yet unclear and we are working closely with our colleagues here in the UK and elsewhere in Europe to try to understand what the scale of the problem is. So technical work is ongoing involving putting mobile broadband devices in the same room as cable TV set-top boxes, for example, and seeing how susceptible those set-top boxes are to interference from those mobile broadband devices.

At the moment, we can't say how significant that problem is but we do know that it is not a problem today. It is a problem that will only come about in around 2013 when mobile broadband systems start to be rolled out in the UK. So we have time in which to work out how big the problem is and how to fix the problem. Nonetheless, it is a potentially serious problem and, therefore, one that we have to look at very carefully.

Current challenges

Finally, a very important point: we don't believe any of these challenges is such that we will not be able to proceed with the award of the 800MHz and 2.6GHz Spectrum on the timetable originally planned, which will be in the first half of 2011. We still intend to proceed with the auction of the 800MHz and 2.6GHz Spectrum in the first half of 2011, assuming that the Government direction goes through as planned. We believe that we will have sufficient clarity about the resolution of each of these issues in order for us to be able to do that. Thank you very much.

Ed Richards: Thank you, Graham. Thank you, Stuart. If we pause there to take any questions on the mobile or spectrum section that we have covered so far.

Petri Allas (Redburn): One issue on the mobile front that has engaged regulators in other markets but not yet in the UK is network neutrality. UK operators here are already working things out, charging extra for VOIP, home video services and so forth. How is your thinking evolving in that area and when do you intend to take a look at that?

Ed Richards: Net neutrality is a big issue not just for the UK but also for the EU. We have already done some quiet thinking about this internally and during 2010, we will do some more public thinking about it and I am sure we shall put something in the public domain, which will be some form of consultation on our approach to net neutrality. That will be for fixed as well as for mobile.

I think that our position so far has been slightly different to that of the US. I think we are all starting with the same objectives in mind, we all want to have an open environment for applications and services, but we also want to have an approach which ensures that network operators can make a return. The focus for us so far has been to say there is more infrastructure competition in the UK and in other parts of Europe than, say, for example, the US where essentially you have the two big telcos and the cable companies. Therefore, if you combine that competition with transparency, where we have put a lot of emphasis on transparency of any traffic management policies that are in place to consumers, you can be slightly more relaxed about the net neutrality position than they have been in the US.

That has been a working position up to now and we are going to do much more work on this during 2010. We shall also do that in collaboration with some other regulators across Europe who we know are also extremely interested in it. I was at the European Regulators' Group meeting in Warsaw during this month, and we discussed there and we have had I think very productive early discussions with a number of other European countries. That will be a big part not only of what we do next year but it will be one of the key agenda items for 2010 for the new European Regulators Group known as BEREC, which Alex will talk about later.

Hannes Wittig (JP Morgan): I have two questions. First, I want to verify that I heard you correctly when you said that the expected time for the auction is the first half of 2011 – I had missed that previously. Secondly, I just wanted to ask whether the recent proposals by the European regulatory group which seem to favour bill-and-keep will exert a, let's say, strong prejudice on your potential set of conclusions when you publish your MTR proposals early next year?

Ed Richards: On the auction timetable, we are talking about the first half of 2011, and we would like to do that in the first quarter but there are some uncertainties. There are uncertainties of the kind that Graham discussed. There needs to be parliamentary approval of the Direction and, given the political climate at the moment, there is a degree of uncertainty about that. However, with a fair wind on that and with our current assessment of the issues to do with interference both in relation to 2.6/2.7 and in relation to the cable interference issue, with our current assessment of that, we believe we are on course to hit that timescale but we are talking about the first half of 2011 to give ourselves a little wiggle room there.

On the MTR issue, you have the Commission recommendation on the one hand, which, as Stuart said, is a recommendation so it is not binding but we need to take utmost

account. Then you have a separate document which was produced by a project group of the ERG, which I think it is fair to say, Alex is looking much further forward? And imagining a world probably beyond the next MTR settlement, and conceiving of a possibility that you could move at that point to a bill-and-keep model. That was on our list of proposals we are consulting on, so it is something that we have clearly thought about and continue to think about. The fact that other European regulators are thinking about it in a similar vein is, of course, relevant, but I do not believe you should necessarily read anything more into it in relation to our conclusions for the next MTR regime in the UK. It is another part of that debate which I think is extremely interesting but it does not, in this case, carry any particular weight for particularly the next settlement.

Will Draper (Execution): Thinking about Orange and T-Mobile, I have a couple of questions. Can you help us a little with the precise timetable for the regulatory scrutiny over the coming months? Secondly, which way are you leaning in terms of, do you think that in principle going from five to four is okay, or is that just a very bad thing, and whether you think remedies are going to be an inevitability in this?

Ed Richards: You will not be surprised to hear that we are not leaning in any way yet, because it has not been notified and we have not completed our analysis of something which has not been notified. When we have done that, we shall decide where we stand on it, so we are not in a position to speculate in any way what our position will be on it. I believe we know what the contours of the argument are: the case for it will be around profitability and the investment that is made possible around that profitability. I think the concern, on the other hand, will be the loss of competitive intensity for consumers in a market which, as Stuart described and which our MSA sets out, has delivered substantial benefits to consumers as a result of that competition. That is where the territory will be. Stuart, do you want to just pick up the timetable issue a little bit?

Stuart McIntosh: On the timetable, there is a risk that I shall be approximately correct rather than precisely correct, so don't regard it as Gospel. Basically, once the parties have filed, there is a period of about 15 days during which the OFT can make a formal request to have the issue referred back here to the UK. In the event that it does not, it will stay with the Commission and they will do their phase one review which takes approximately 30-40 days – Alex, I don't know if you can confirm that? It is in that sort of order and the Commission's timetable here is a little shorter. The phase one review is relatively quick and it will then be a matter of whether or not they go into phase two. If it is

phase two, it will then depend on whether it is done in Brussels or whether it is done here, but that would be completed during the course of the next year.

Ed Richards: It is worth emphasising from our perspective that whether it is done in Brussels or London is immaterial really. We will play a very substantial part in the consideration of it with either Authority.

Chris Whitehouse (TRowePrice): In terms of the Digital Britain Bill, will that set the framework for how the future auction will be conducted? Assuming that it does, how undo-able would that structure be by potentially a new Government, for example would the framework be subject to approval by the prevailing Secretary of State for example?

Ed Richards: What is happening on the auction front there is that there is a package of measures which will be contained in the proposed Direction, so the key point is that this Direction has to be made and it has to be voted on and approved in Parliament, so that is a very significant first step. Once that is in place we would then implement it, and as Graham said, I think we would expect, other things being equal, for that to take place around the end of March.

At the heart of your question is to what extent is that fixed and permanent thereafter. I think you would expect it to continue from there on, but I think the absolutely accurate answer to your question is that the Secretary of State of the day, whoever that is and of whichever Party that is, is able to give us a Direction. If in future circumstances the Secretary of State changed his mind and issued a new Direction, and secured support for that in Parliament, then technically they could ask us, or tell us, to do something different. That is the precise answer. I am not sure I would expect that to happen if the Direction goes through, because I would expect there to be a healthy debate about it in these circumstances, but you are right in the sense that technically that could happen, and after an Election who knows where we will be?

Simon Weeden (Citi): A couple of questions for you; one is as regards the Regulatory debate around MTRs. Is there a precedent in the UK, a Regulatory field for denying an operator or a company the opportunity to recover a partial contribution to their fixed costs? We know that obviously the EU has put this concept out there, but will this fly in the face of what other Regulators here have done, and Ofcom has done in the past? On the GSM Directive and re-farming, are we able to assume now, or indeed is it hard reality, that the operators will from, at the latest, May be able to deploy 3G on their 900 and 1800

spectrum? Is the regulatory field clear, have licence terms changed, if they need to be changed, etc?

Ed Richards: On the first question I will pass it over to Stuart in a moment. The European Commission recommendation on mobile is not how we do it in fixed, and obviously it has not been the way that we have done it in mobile hitherto either.

Stuart McIntosh: It probably is not, and there are a couple of things which are probably relevant. Occasionally for example we will set a charge control across a basket of services where we will not be specific about the recovery on individual services, so in that case it is quite possible that the regulated company may set some prices which are quite close to marginal cost, or some sort of floor of that nature.

The other thing I am thinking about is that there are potentially precedents, although they were not framed in this way, in respect of broadband. For example, if you look at how the fixed and common costs of an access line are recovered, those historically have largely been recovered on the voice service not on the input to broadband, and that is just a product of the regulatory regime as it was approached at that time.

The Commission's reasoning here is somewhat different; they are in part arguing about trying to put the maximum amount of revenue they can in the mobile sector into what they see as the competitor sphere, so termination rates are not competitive - let's have those sold at marginal cost, and if there is a waterbed effect and it pushes revenues to the other areas then that is sort of okay, because any excess profits will be competed away – their logic. There is not quite a precise precedent, but there are things that look a bit like it.

Ed Richards: On the GSM Directive, that is something that we are looking at, at the moment. The point that Graham made I would just underline. It is clear what the direction requires, but it is also clear that we need to look at it in the context of competition and the overall position in the market, and in this instance it is obviously difficult to separate that out so that is something that we are looking at closely at the moment, and obviously discussing with all of the operators.

Simon Weedon: That sounded a little bit like a 'No'?

Ed Richards: No, it is not a 'No'.

Simon Weedon: It is not a requirement of the Directive change, the new Directive, if you like, that the operators be allowed to do this from May, come what may?

Ed Richards: It is something that we are looking at at the moment and I do not want to be more precise than that, because there are different views about it, so when we are ready to say something absolutely clear about that, we will do.

Michael Armitage (Astaire Securities): It is on the question of network sharing and mobile not-spots and the whole “merger of T-Mobile and Orange” issue. What has precedence in your mind, or even statutory-wise, in the sense of can you use the request for a network sharing permission, or a request to merge two businesses, as a lever with which to require forced coverage of not-spots as a *quid pro quo*? Do you have that sort of lever ability, or are you operating in separate standalone policy units which do not allow you to co-ordinate?

Ed Richards: In a sense what you are inviting me to do is speculate about potential remedies in the circumstances of a merger.

Michael Armitage: I am quite happy if you leave that because I know you will not give an answer on that! But you have had lots of requests presumably – or I guess you were notified of network sharing initiatives by operators?

Ed Richards: Yes; I do not mind trying to answer the question in principle in any case. Our instinct in relation to a merger situation would be that if it were raising questions about remedies to the merger, they would have to be concerned with the competition consequences of the merger. Now, if you follow that logic it takes you to the kind of territory that people who would be concerned about it, and I am expressing no view about that of any kind at the moment, that is the kind of logic that you would go to. That may or may not therefore include not-spots. That depends on whether you think that is a consequence of the merger. That is how we would tend to think about it.

Let me just talk about the not-spot issue a little bit. This has surprised us a bit. This has surprised us because we have been through a period where people felt that 2G was obviously built out and coverage was really not an issue, and it has consistently re-surfaced during the course of the last year. You cannot talk to a consumer group or a group of consumers who do not raise a coverage issue. It may not be a big corporate issue, and it may not be a big issue for the investment community, but it is for the consumer – for consumers and for consumer organisations. Every single time it comes up, and it has two particular forms: it has the not-spot issue in relation to 2G, which is extremely varied, but people lose calls, they cannot get coverage, and if you take a four-operator measure, for example, or a five-operator measure, rather than a one-operator measure, there are some quite significant gaps. It also has obviously a further manifestation now in relation to 3G coverage.

We have picked that up as an issue. We are not proposing to regulate to deal with it because that feels disproportionate, but what we are proposing to do is explore with the

operators and with others whether more can be done in this area, and whether we can extend the coverage, because it is clearly something of consumer interest. That is how we see that.

It is complicated of course, because as you will all know there are many different reasons for coverage problems. In the cities sometimes it is because of the challenge of getting coverage in basements and things of that nature. That could be a very, very different challenge to coverage in a rural area where the problem is not that the company is necessarily unwilling to put a transmitter up, it is that local environmental concerns refuse to allow it to be put up, so you have a tension of a completely different kind.

There are all sorts of different reasons; the transport infrastructure offers another set of challenges. Why is there poor coverage on some of the great transport arteries up and down the country? You will discover that is a third set of reasons to the rural/urban problem, so we have to look into that carefully and see where we can go with it.

Stephen Howard (HSBC): I think it is about 18 months, or it might even have been two years ago, that you put out a document in conjunction with whatever the DTI is called today (I always forget) –

Ed Richards: BIS?

Stephen Howard: Yes; it was basically taking forward your arguments about why a marginal approach and an incremental approach were different, and why you preferred the marginal approach to establishing costs on MTRs. I thought it was a very clear piece, very well-argued and concise, and I am just wondering whether you stand by that document, and if you do not, what you have changed your mind about and why?

Ed Richards: Right; Stuart, do you want to pick that up?

Stuart McIntosh: We put a submission with BIS to the Commission at the time as an input to their consideration before they reached their recommendation, and one of the points we were trying to make there was that you could not necessarily define what was the right way forward in isolation from the particular circumstances you were looking at, and those may tend to vary by market. In reaching a conclusion, so for example, here, if we look at an issue and identify some options, we then have to look at the impact of those options on consumers and various stakeholders, and justify why the particular option we are proposing is appropriate. Simply saying 'There is an instruction from Brussels which does this' is an important consideration in our process, but we need to take it further in order to be able to

satisfy all our various stakeholders that what we have elected to do is the right thing, so we were trying to position the debate more broadly.

Have we changed our view? We are in the stages of reviewing the different options, and as I said earlier in March/April-time next year we will set out our appraisal on those. We will talk specifically about the implications of the Commission's recommendation, and then determine what seems to be appropriate in this context. So I don't think there was a change of view, it was basically saying 'You need to look at the context and you need to understand the importance of the whole wide variety of issues'.

Stephen Howard: The piece did seem to highlight some pretty clear defects

Stuart McIntosh: Well, there are some challenges, because for example it could have implications for those who are on pre-pay type schemes. We were trying to point out in that that not all consumers will necessarily benefit from this; some potentially will be harmed, and we need to understand the specifics of that and what the balance is.

Ed Richards: What we wanted to do with that piece of work was to make sure - and this is precisely the nature of these consultations where we are responding to somebody else's consultations, which is not often the case, but we were there – that the full range of economic factors were taken fully into consideration by the Commission in reaching its recommendations, so we made exactly the kind of arguments that Stuart has been talking about, and how there could be differential effects on different consumer groups in relation to different approaches. We have done that, we have moved on, the Commission has put its recommendation out, and that comes back to us. We need to take utmost account of that, and we will take utmost account of the submissions we have had on the proposals we put out, and we will reach a view early next year. There are lots of different arguments to take very seriously in that set of issues.

Paul Howard (Cazenove): Just a quick related question on that; do you feel there is any link with those coverage issues and a lack of investment and the level of competition? Is it possible that the operators having had a lot of pressure from competition and regulation, margins have come under pressure therefore they have restricted capex to protect cashflow, and that is what is causing some of the coverage issues? Would you take that into account when you look at the consolidation and network-sharing issues?

Ed Richards: We certainly take the idea into account. I think the evidence needs very careful examination. We have not seen evidence so far – and we would be delighted if some of you would give it to us – but I do not think we have seen evidence so far that on a series of measures that there has been less per capita investment in the UK than in

other much more profitable European mobile markets. Therefore, the notion that the EBITDA measure for the UK lags behind other European countries and, therefore, we have suffered from less investment and network coverage is, in my mind at the moment, an unproven one. Now if some of you have evidence to prove that, please let us have it. We understand the potential relationship very clearly but you have to look at the evidence as well, because what competition does, is two things. One is that it can reduce profitability compared to much less competitive markets. The other thing it does is make you compete, and sometimes you have to compete over coverage and service provision as well as price.

Broadly speaking, what you would say looking over a longer period is that the level of competition in the UK has delivered very good coverage. We are not alone in having not-spot challenges. I think every single country in Europe has not-spot challenges and indeed coverage challenges, particularly in relation to 3G, so it is a very interesting area. What I'm cautioning against is any casual assumption, and you were not making this, Paul, that somehow there is a like-for-like or some easy correlation between EBITDA measures and investment and coverage and things of that kind. It is much more complicated and competition is part of the story as well as profitability.

Paul Howard: I guess I wouldn't just use the UK as an example. You could argue across the whole of Europe that, as margins come under pressure, operators have restricted capex as a way of protecting cash flow.

Ed Richards: You can definitely make the argument not just on the basis of the UK in the context of Europe. You can, of course, make it in the context of Europe in relation to Latin America, India, China and the US, and that is the kind of analysis that we are interested in. But there is a bunch of other reasons why people might re-route capex investment to other parts of the globe as well, not just the level of profitability but the growth prospects, penetration levels, maturity of the market – all sorts of other factors on which you are all more expert than I am. But those are all in play when those decisions are made by global corporations.

Jonathan Dann (Barclays Capital): Conceptually, listening to everything you have said, is Ofcom biased towards MTRs being higher rather than lower, and for the 800/900 bands to be more evenly distributed than they currently are? Are those the two big things.

Ed Richards: Conceptually, I am not going to answer that question!

Jonathan Dann: But yes.

Ed Richards: No, no. In all seriousness, you are inviting me to give you a leading answer to a couple of things we are looking at very carefully. We are looking at the MTRs and we have set out the range of options. We have heard some very strong arguments from different people about that and it will be next year when we say where we are, both conceptually and in reality. In relation to 900/800 and all the spectrum issues, we have the Direction, let us see if that comes through. We expect it to and, if it comes through, we shall get on with the implementation which will lead us to the auctions in 2011. The merger, if it is notified, when it is notified, potentially throws up some questions around that, and that is what you have the competition, the merger process for: to address any competition issues which are novel and which emerge as the result of a proposed transaction of that kind. I think that is the right point at which to address them.

Thanks for that and we will move on now to the pensions subject, so I hand over to Craig Lonie.

Pensions Review
Craig Lonie
Director of Competition Finance

Thanks, Ed. That is nothing to do with me, that is about spectrum. I am the Director of Competition Finance at Ofcom. Some of you may recognise me from previous best-seller launches such as *The Pricing of an Unbundled Loop* – parts one and two!

What the papers said ...

Today, however, I am here to talk to you about our latest Christmas blockbuster, which is the Pensions Review: Richard and Judy tell me that it is a cracker! Before going any further though, I need to express a note of caution, which is unlike me. Those of you who have read the newspapers over the past couple of weeks might be forgiven for thinking that we have proposed something significant or profound, but you will be disappointed to hear that we haven't – or we haven't at least yet.

What we have done is, we have published a consultation in which we have asked the stakeholders to tell us if our current treatment of pensions costs is right. If it isn't right, we want them to tell us that it isn't right, and tell us what we should do instead, hopefully with a healthy wodge of supporting evidence. At the end of the process, prices might go up, but they might go down, and they might stay the same.

Contents

This morning I shall explain why we are looking at pension costs, why we have chosen to do that now, and tell you what we are doing. I shall try to put this into the context of products that you know and love, so that you understand how the treatment of pension costs affects regulated charges, which is a subject that you can thrill your pals with at dinner parties over Christmas. I shall explain to you what we are trying to achieve and tell you how the process works and what happens next.

Why we are reviewing pension costs

Why are we looking at this then? There are two very simple reasons for this. One is something that you will all be aware of: pension costs have grown enormously over recent years in two ways. First of all, many companies, including BT, obviously are sitting on very significant scheme deficits relating to defined benefits programmes. As a consequence of that, they are having to make very sizeable cash payments into those schemes to fill the hole, so that is deficits but it is not just about deficits.

The scale of ongoing service costs, or what we call ongoing service costs, has also grown significantly for all companies in recent years. The reasons for that are several but probably the two most significant ones are that people have the temerity to live slightly longer, and prospective investment returns are now assumed to be lower by those who make decisions about how pensions costs are treated.

One thing we are not covering in this review, which is quite important, is we are not looking at whether defined benefit are a good thing in and of themselves, nor are we intending to look at BT's management of its scheme. What we are doing is having a look at how the costs of pensions and defined benefit schemes in particular should be treated in the method that we use to get to regulated charges. To that end, we have set out here three categories of pensions costs, or three categories of ways in which pensions costs affect regulated charges. Those are deficit repair payments, which you all know and understand: these are the costs associated with filling the hole that exists between assets and liabilities today.

The second better known area is ongoing services costs, which are the costs of providing for new promises being made today by these companies to existing staff as a consequence of service now.

The third area, which is more esoteric, is the impact of pension schemes on cost of capital. It is arguable that pension scheme risk contributes towards the observed beta and, therefore, the observed cost of capital of the firms that we regulate, notably BT. Estimating the cost of capital in the presence of a significant defined benefits scheme is a tricky one, so we are having a look at how we should do it.

How we treat pensions costs at present

How do we treat pensions costs at present? I have tried here to put this in the context of a well-known regulated price, which is the price or the cost attributed to an unbundled loop sold by BT.

Very roughly, the costs attributed to that by us are in the zone of £90; that is where we get our price of £86.40, but basically it is about £90. Within that £90 is an operating cost of £45, and within that operating cost of £45 is a pay cost of – I can't see but I think it is £22 or something of that zone, and glued on to that pay cost is a contribution into the pension scheme based on the terms of the scheme offered to current staff, of around £3. In addition to that there is a deficit repair payment which for illustrative purposes here we put at £4. How do we get to that £4? It is the cost of the full deficit repair effectively treated on a *per capita* or per head basis and turned into a per line charge; but that number adds up to £4, and at the moment we exclude that from regulated charges, and we have done since privatisation in 1984. Going back to the ongoing service cost, we include that basically on the same basis as BT prepares its statutory accounts.

Now, the cost of capital is a slightly more tricky one. At this stage all I would say is that we do not explicitly adjust the cost of capital for the presence of a defined benefits scheme. So what would happen if we changed that approach?

How changes of approach might affect charges

Well, a remarkably similar picture will help you understand that. If we added deficit repair in, and let's just say for the purposes of illustration here and the basis on which we have set out the consultation document, we included them in full, based on the deficit that exists today. We distributed that deficit on the basis of headcount, and then we turned it into the price per line in much the way we turn other costs that apply to Openreach into a price per line. Potentially that would add around 4%.

What would happen if we treated operating cost elements differently, so the ongoing service charge? How might we do that? You may, if you are really dull, have read a recent Accounting Standards Board publication on this, which suggests that it is potentially more appropriate to calculate the costs being incurred through new promises being made today. The way to do that might be to discount future expected cash out-payments by a smaller discount rate. If one did that the mathematicians amongst you will realise that that gives you a bigger discounted cost today, and that is why if one were to treat the operating cost elements of this differently it is possible that an increase might be experienced, and relative to the published 2009 BT cost we estimate that what the Accounting Standards Board have suggested would bump up regulated costs by something of the order of 1.5%.

I said the cost of capital was a slightly more tricky one, and if any of you have read the document – and in particular have read the paper done for us by Ian Cooper – you will realise that Ian Cooper, who is a big cheese in the academic world and is very clever (one of the cleverest people I have ever met) – he agrees that it is very tricky.

How changes of approach might affect charges

There are several different views on this and they cover quite a wide range. At one extreme a number of US academics have set out a fairly mathematical view of the world that says an extraction of this might suggest that the cost of capital is over-stated by a significant amount, potentially 1% or 2%. There are many reasons why one might believe that this over-states the effect of this, and I will not go into those here, but purely for illustrative purposes what we have shown in the picture is the effect of a 1% change in the cost of capital. We estimate that would knock prices down by about 3%.

Objectives of the review

So, depending on what we do and how we do it and where we end up and what the evidence tells us, we could end up in quite a different place – hence prices could go up, could go down, or we might decide based on stakeholder feedback that what we are doing actually works pretty well. So what is it that we are trying to achieve here? There are several objectives of this review. Most importantly we need to review what we do in light of our duties, so our approach will first be aligned with our duty to promote the interests of citizens and consumers.

What we do must also be sensible and coherent. What I mean by ‘coherent’ is internally consistent, and the way in which we treat these costs is arguably in some instances related, and our treatment should be related. We also need to bear in mind the concept of consistency along several different dimensions.

Just quickly running through the different elements of cost that I talked about in turn, in terms of deficit repair effectively that is a judgment of our duties: what do we think best furthers the interests of citizens and consumers. However, there are also questions of consistency here, and there are two that I would highlight in particular. The first one is consistency over time. We have excluded deficit repair payments since 1984. The reason that we have excluded them dates back, but they have not been deficit repair payments in the past. Through the 1990s BT took very significant pension holidays, and through that time we did not hijack those holidays to discount controlled prices at the time.

So consistency over time would tell us that we should probably stick where we are – but we are not blind to the outside world either, and we observe that other Regulators do

things that are quite different to us, and we will come back to that in a moment. But one of the issues that we need to think about is just to make sure that we understand that we are consistent, or at least can sensibly reconcile differences between what we do and what other Regulators do.

To date I would characterise our approach in treating the other categories of costs, so ongoing service costs and the cost of capital, as traditional. What I mean by that is we take accounting numbers off the shelf for ongoing service costs, and we apply a fairly traditional version of the capital asset pricing model and weighted average cost of capital calculation to reach our view of the appropriate rate of return to BT. If we depart from that, that is obviously something that we would need robust evidence to do. If we were for example to over-write accounting values in a material way or adjust the cost of capital to reflect pensions risk, we would need to do so based on really robust evidence.

The other thing to note on this slide, which is signified by the little red arrows – and I do not want to go into this in too much detail unless someone asks a tricky question – it is fair to say that a high cost of capital will tend to be consistent with a logic that drives a low accounting charge, and vice versa. I will leave it there.

Different regulators adopt different approaches

I talked about other Regulators; what do they do? They do not do the same as us, but they do not do the same as one another either. We suspect that what they do is rooted in a number of different things, but one obvious observation is other Regulators generally tend to have a “duty to finance” and we do not. That is one thing that we believe in the past has driven other Regulators to treat cash outgoings as a more legitimate part of the cost base than perhaps we have. However, it is also important to note that they do different things themselves, and they regulate different industries that have very different characteristics to the industries that we regulate, in particular telecommunications.

Next steps

So what happens next? Well, we have asked for responses in February. We are anticipating we will receive responses from quite a wide audience here and that has already started informally and formally. When we get those responses, we shall review them and set out our thoughts on how to move this forward in the spring. We intend to come to a firm view as to how we will treat pensions costs in the future by the end of the year, and implementation will follow that if we decide that we need to change what we do. If we don't, we shall put our feet up and have a cup of tea, I suppose – sorry, I shouldn't say that! Obviously, I shall move on to my next important project and work really hard, boss!

That is pretty much it. That is what we have done, that is why we are doing it and that is what we are trying to achieve. This is what happens next and I shall hand back to Ed, who will deal with questions but he said he will hand all the difficult pensions questions to me.

Ed Richards: I certainly am going to do that. On the assumption that there are a lot of questions on this, let's kick off.

John Karidis (MF Global): I have two questions which are a little complicated, so I have written them down. First, the pensions review mentions that 30% of BT's employees work for Openreach. I am a little surprised that you did not instead look at what percentage Openreach accounts for with regard to the members of BT's pension scheme: I would have thought that the proportion would be greater. Secondly, going back to the second consultation and the new pricing framework for Openreach that you published just over a year ago, there were detailed P&L assumptions that drive Openreach return on capital which then drives the charges for wholesale access to Openreach's copper. If you include even the 20% share of the top-up payments in those calculations, the impact on the Openreach return on capital is very significant, much more significant than the 4% that you mentioned in the pension review, because we are talking about £52 million and I think the overall operating profit was £400-500 million, so that was a big impact. I cannot really square that document with just the 4% number, could you help me?

Craig Lonie: I shall answer the first one here and I shall answer the other one afterwards, because I don't think we want to get into detailed deconstruction of the P&L in this meeting.

In terms of the first one, are there different ways of apportioning the cost of a pension deficit? There's a host of different ways of doing that. One way we have undertaken here, purely for illustrative purposes, is using headcount as it seemed like a simple thing that most people would understand. How would one do it in practice? That is something on which we want stakeholder input, and it will presumably be the stakeholders who are most interested in us including deficit payment, probably one in particular! They have not yet forwarded any specific method by which this should be done - arguably, one could do it in a number of different ways.

The truth is that it is attributable to submarine engineers who were working in the 1970s, so quite how that should be attributed across today's business is a question for crossword enthusiasts rather than one on which we would speculate at this stage.

Stuart McIntosh: I would add one thing to that which is that you should not read too much into the illustrations that we have put in the document. We put those in there to allow people to get a sense of whether or not this is material, but we made it very clear it was just a broad indication; it was not meant to be a very specific estimate. By all means, if you have more insight into how it might be done and you want to speculate, that is absolutely fine, but it was meant just to give people a sense as to whether or not this is significant.

Craig Lonie: The only thing I would say in relation to the second question is that you might be conflating the impact on a return on capital employed in percentage terms with the impact on a price, which are two quite different metrics of the same number.

Ed Richards: You can have a quick follow-up.

John Karidis: As a separate issue on this, it sounds like the Digital Economy Bill is trying to place an obligation on Ofcom to proactively encourage investment in infrastructure. Is that a duty to finance in a roundabout way?

Ed Richards: No, it is a very different thing. It is the proposal to change the balance within our duties. At the moment, we have our duties to serve the interests of citizens and consumers where appropriate by promoting competition, so there is a strong emphasis on competition. We already have to have regard to investment, so it is not that we do not think about it – of course, we think about it. The Digital Economy Bill amendments would do, is modify the relative emphasis within the hierarchy of duties we have, so it is general in that sense and needs to be seen in the context of the fact that we already have a duty to have regard to investment. It is about balance and nuance rather than anything fundamental of that kind.

Michael Armitage (Astaire Securities): I have not read a good consultation review for such a long time that I have to say I wallowed in the pensions one! I thought there was a basic principle that underlay the whole recovery of cost thing that was by reference to a reasonably efficient operator, and nothing in the world tells me that having defined benefit pension schemes and a history of mismanagement represents a reasonably efficient operator. Have I just missed something in the great regulatory debate in the last 10 years?

Ed Richards: That is a very useful submission which we shall include in our reflections before we make a decision! *[Laughter]*

Question: Just a quick question. From John Karidis' question, it seems that many of the different documents of Ofcom and the various other Government bodies are not always contiguous, so is it the case that you cannot take the Ofcom review of the Openreach costs and infer anything about what will happen with pensions – was that one conclusion? There are other separate things such as, for example, the Valuation Office has decided that BT's rateable value will halve over a three-year period, when a lot of this discussion here is arguing that the Openreach rateable value might actually go up. How does all of this square together?

Ed Richards: In modern democracies of the kind that we work in and that you live in, there are different arms of government and different ALBs, as we have come to understand ourselves – arm's length body, for those of you who did not understand that acronym – and some have responsibility for some things, while others have responsibility for other things. I would make two observations. One is that we make a huge effort to talk to other arms of government about what they are doing where it affects what we do, but that doesn't always amount to being able to tell them what to do or say that, do you know what, for us the right answer is X. People make independent decisions on these matters and sometimes, therefore, you just have to live with that.

As far as Ofcom is concerned, you have to treat issues as you see them on the facts of the case for all the reasons that we know about but, of course, we try and do everything we can in as consistent and as coherent a way as possible. Sometimes we do not get that perfectly right but that is always what we try to do, and it is why all of these issues of this kind you see, which spread across the whole communications sector actually, even though we are concentrating on Telecoms today, are done in Stuart's group, because that gives us the overview that allows us to try as best we can to be coherent wherever we can. Do you want to add anything to that, Stuart?

Stuart McIntosh: A couple of things. There should be some reasonable measure of consistency between what we say in the Openreach Financial Framework and what we are doing here as we are very, very conscious of the connections. The other point to make is that, ironically, this work reflects the plea which you are making, because historically when these deficits were not that important, the differences in treatment across these regulators did not have a huge impact either. But it became very clear to us during the course of doing the work on the Openreach Financial Framework that there was a larger issue here than there had been historically and, thus, we needed to be clearer on the different approaches being taken by different regulators and why. Thus we initiated a number of discussions with the other regulators, and that is fed directly into this work, so it is

not necessarily to say that we should adopt their approaches, but there is much more awareness and we will learn from them if we think it is appropriate to our circumstances.

Ed Richards: It is worth underlining that; this issue was brought to us by one particular party and you know it is very controversial, and people have very different views upon it. You saw that from the extremely over-the-top Press coverage on the day, which was classic misinterpretation by journalists, or headline writers in that case, to be fair, claiming we had said things that we had not said. However that was the origin of this, and we took the initiative to go and say 'Maybe we do not know everything, let's go and see how everybody else does it'.

What it flushed out, which nobody had ever done before, is this variation in approaches, and it is the first time it has ever been exposed in that way, and it has provoked a lot of interesting dialogue and thought within the other Regulators as well, because once you surface something like that everyone is quite interested in it – so we will take it from there.

Speaker: Is there anything that you are currently planning, that you look at BEREC and think that BEREC in three years' time would be very unhappy with?

Ed Richards: Certainly not! No. What you have to remember about BEREC, and Alex will talk about this and I do not want to pre-empt his presentation, we argued for BEREC. Let's really remember this. We were against the Super Regulator, or whatever it was called, we thought that would be not the best way to go, but we argued for BEREC. In fact the model that has come out is essentially the model that we proposed with ARCEP, the French Regulator. We did some collaboration with ARCEP and said, what do we both think about this, and we made a proposal and BEREC is essentially it.

The reason we did that is because a lot of these issues are common and you need to drive best practice. You need to drive quality regulation across Europe, you need to drive consistency and co-ordination in how these issues are approached. What it does not mean, and one of the reasons we were concerned about the original proposal, is that you always have a uniform answer to what are in some cases quite different markets within different Member States, because of the presence (or not) of cable, the relationship in any one country between fixed / mobile substitution – all those sorts of issues, where bundling is. We argued very strongly for BEREC and we are already at the heart of helping determine its agenda and what it will look at. On the contrary, I am not worried about it. I am a big enthusiast for it.

Any other final questions on this section? [*No further questions*] Excellent, then I will hand over to Alex, who will pick up the international theme.

Developments in European Regulation

Alex Blowers

International Director

Thank you Ed; Ed has helpfully just removed the most important part of my presentation, so that helps me!

The revised Regulatory Framework

What I wanted to focus on primarily this morning was the new Regulatory Framework that was agreed on 24 November, after – depending on when you consider the process started – about four-and-a-half years of discussion and negotiation. The key element of that are the creation of the new body, BEREC, and I will talk a little bit about that, what was termed the Better Regulation Directive, which essentially covers economic regulation and the iteration of economic regulation going forward, and issues around privacy and users' rights which also includes a set of issues around consumer protection.

The eventual outcome was delayed by about six months, and that delay was caused essentially by a row between the institutions, between the Council (that is the representatives of Member States) on the one hand and the Parliament on the other, on something which became known totemically as Amendment 138.

Just to say what Amendment 138 was essentially about, it was whether there should be an expression within this framework of a fundamental right to use the internet; should consumers or citizens fundamental rights to use the internet be enshrined in some way, and what was driving that debate was concern about schemes being developed across Europe in relation to internet piracy for instance, or contemplating people being cut off, disconnected from service. The resolution of that is essentially a form of words which recognises that there are of course important rights which all consumers and citizens of Europe have, but those rights are very carefully calibrated and balanced with other rights, including of course the rights of content creators not to have their material widely pirated across Europe. From a UK public authority's point of view the view that was taken was that this was a very satisfactory outcome, and we were obviously very grateful that this unlocked the overall negotiation, and allowed us finally to complete the negotiation.

On timing for implementation, Member States will now have until the middle of 2011 to implement, and they will need obviously to convert the wordings of the various provisions in the Directives into national law on that timescale.

Framework : Economic regulation

Let me look first of all at the economic regulation piece, the so-called Better Regulation Directive, and just highlight some of the key points here.

The first thing to say is that this framework throughout the negotiation has been built on a fundamental principle of retaining market-oriented policies and a strong focus on the benefits of competition to deliver good outcomes for consumers, but also the healthy climate for investment, picking up on the comment that Ed was making earlier about there being no, if you like, trade-off or inconsistency between promoting competition on the one hand and investment on the other.

The Commission's starting point for the process was a concern about the lack of consistency and coherence of regulation across Europe, and the Commission's response to that was to propose two specific measures which gave us some concern in the detail, first of all a proposal that the Commission would take a power to impose a veto on national regulator's remedies, in addition to the veto that it can already apply under the so-called Article 7 process on market analysis and findings of significant market power. The Commission also proposed, as Ed has already mentioned, the creation of a 140-strong Super Regulator. This went through a number of different iterations and a number of different names – ECMA, BERT, GERT to name but three – but our fundamental problem with both of these proposals was a philosophical one, that they assumed a top-down model of arriving at regulatory best practice which we felt was not appropriate. It was particularly not appropriate at a time of very rapid changes in markets, where the preferable model is one of peer review and learning from the experience of other Regulators, so almost like an “experimentation review and establish a best practice” model.

From our point of view therefore it is much to the credit of the eventual proposals that what we have is something much more along those lines. There will be peer review of Regulators' activities. That includes us and includes all the other European Regulators, but that will be conducted in an evidence-based way and will be conducted via the machinery of essentially a College of Regulators, BEREC, rather than through a top-down one-size-fits-all model as originally proposed. For us that is a very, very important guarantee of effective regulation, and regulation which is appropriate to national market circumstances and modalities.

There are two issues which we think are essentially unfinished business on the economic regulation side. The first of those we have already talked about, is net neutrality and I will say nothing more about that now, other than to note that the Commission as part of the process of the eventual resolution of the outstanding issues has made a commitment

that it will come back to look at the question of whether the powers under the framework are delivering the right kind of open and innovative environment for services and applications. The Commission as well as national Regulators as well as BEREC will have to come back and look at that question, and that is why we see this as being one of the key issues for 2010 and running into 2011.

There is also an issue about the review and, if necessary, reform of universal service schemes in Member States. At the moment the situation across Europe is that most Member States have universal service schemes which only apply to fixed narrow band voice and data. That looks an increasingly strange outcome at a time when the debate has very much moved on to the citizenship arguments in relation to broadband, and we expect the Commission to come back and produce some initial Green Paper thinking on the evolution of a universal service sometime, again, during the course of 2010.

Framework: Consumers' and users' rights

On the consumers' and users' rights, I shall not spend a lot of time on this but there are probably a couple of things that may be worth noting, because they could have significant implications for operators in the sector. One is that there is a much stronger commitment now at European level to number portability, recipient-led, so led by the customer rather than at the choice of the donor-operator, and moving to a strong expectation of one-day porting being the norm. That means that the debate about how far and how fast we can introduce mobile number portability in the UK now has the strong underpinning of a commitment at European level to one-day porting, and I think that is an important change.

Secondly, I would just highlight the debate about the question of how the quality of service for the Internet should be treated. There is a power now in the hands of national regulators to impose a minimum quality of service for the Internet. Nobody is quite sure how they will use that power or, indeed, whether it is appropriate to impose such conditions, but it is one of the things that we shall now have to look at as we take on these new powers under the framework.

Framework: BEREC

We have already talked about BEREC and I would make a couple of points on process there. First, BEREC is established under a regulation which takes immediate effect and, therefore, BEREC will – as I put it on the slide – soft launch very early in the New Year. There is currently talk about a January launch of the new institution. It will be supported not by a 140-person strong bureaucracy, but by a small office of permanent staff who we very much hope will be based in Brussels and not, as it might be, Bratislava or Tallinn or some

other no doubt wonderful part of Europe, which may not be somewhere we can easily get to on Eurostar in a day.

As far as the key tasks of BEREC which I have identified here, it is important to note that there are three important elements to this. First, BEREC will continue the work of ERG in developing common positions to regulatory challenges that are shared by the member regulators. That really establishes a framework of best practice and raises the bar in terms of the overall performance of the regulators across Europe.

Secondly, advising the Commission on any future harmonising measures that the Commission wants to introduce. One of our long-standing anxieties about Commission initiatives in this area is that we have been uncomfortable with the process by which ideas, such as those contained in the roaming regulation, have been generated, and have had to intervene further down the track in the process to try to correct what we saw as errors of approach. In this new structure, the Commission, when it wants to put new proposals on the table, will have to take into account BEREC's advice at the initiation stage, which is a very important change in our view in ensuring quality of proposals.

Finally, there is the issue of scrutiny of national regulators' decisions and, in particular, the remedies that we seek to impose. No veto but BEREC will do what ERG is already doing as an informal practice, and where there are serious problems identified with national regulators' remedies, it will form task groups to look at those and provide advice on regulatory best practice in areas of potential difficulty. So all of those, we think, are meaty and significant new tasks for this body. As I have already said, importantly the Commission will have to take BEREC into account in its own deliberations, which we hope will also lead to a more fruitful relationship between the regulators and the Commission.

NGA recommendation

One other thing that has attracted some attention at the moment is a parallel process where the Commission is trying to put together and finalise a recommendation on the treatment of next generation access. This is a process which has been going on for some time. The Commission has already consulted twice on a recommendation, and what we are now expecting is that there will be a final publication of the recommendation in Spring.

We have already heard that prices can go up as well as down, as can share values of course, and similarly it is quite possible that some of the elements of this recommendation will change between now and the Spring. It has proven to be quite tricky for the Commission to find a common and shared understanding on some of the key issues, and that is unsurprising given that we are at a very early stage of deployment of NGA across Europe. But I think what we can say is that, first, the recommendation will not say we need

widespread adoption of regulatory holiday type approaches in order to stimulate the roll-out of NGA. I believe the Commission will reject that idea and will reinforce the message that, of course, we need appropriate adjustment of regulation but we do not need completely to abandon any attempts to impose regulation in this area.

The areas where they will look for significant adjustment of approach are very similar to those which we, as Ofcom, have already highlighted that we believe are important as well. The need to adjust returns for regulated products to reflect the fact that NGA investments are risky, partly because of uncertainty over demand for downstream NGA products in the retail market. Pricing flexibility for regulated NGA products: again, very, very important, when it is difficult to forecast demand, that you have some flexibility around that.

Perhaps less immediately relevant to the UK but very relevant in some other European markets, the Commission wants to focus on symmetric rules around things like the treatment of in-building wiring. This is an issue that has surfaced particularly in France, where the model that the French regulator ARCEP wants to adopt for metropolitan French areas, characterised by apartment blocks with a concierge at the door and a shared in-building wiring for the delivery of telecom services, is that anybody who has the right to install equipment on the premises then shares that equipment with third parties who also want to offer service. That requires a different symmetric regulation approach to the one that we have traditionally adopted, where we simply impose rules on those who have significant market power in a defined market.

There's one outstanding issue here, which is one of the things that has delayed the eventual outcome, is uncertainty over schemes being built across Europe on the basis of co-investment, so parties come together to share the capital cost of building a new NGA network. In Switzerland, which although not formally part of the EU forms part of the broader councils on this issue, they have adopted a so-called 'multifibre' solution, where the installer of a fibre to the home technology will deliver four fibre filaments to each property, each apartment, house or location. Each of those filaments can then be owned by a separate provider of service, and the question with which the Commission is wrestling is where we have co-investment, or multifibre type schemes, should there be a presumption of no SMP (significant market power) and a disapplication, therefore, of the regulatory rules?

I have already said there is no concept of a broad regulatory holiday but should there be a presumption of innocence, for want of a better term, in those particular circumstances? That is a debate which is running in parallel with the negotiations between, for instance, Vodafone and Deutsche Telekom in Germany on a potential co-investment model and,

indeed, ongoing debates in Switzerland about the viability and applicability of the multifibre model.

‘Article 7’ process

I want to pick one other issue, because a couple of months ago we had something which was picked up by the wires and subsequently appeared in one or two analysts’ reports. This is about our regular business-as-usual interaction with the Commission under the Article 7 process. Back in October, the Commission wrote to us and set out some concerns about the approach that we were taking in a particular market which was the fixed termination market and I just wanted to highlight the nature of the concerns raised here, which was essentially the decision about whether we should apply separate remedies on termination for each of the terminating fixed operators – and I think there are more than 80 fixed operators currently licenced or currently operating in the UK. Should we do that, which would be a literal reading of the Commission recommendation, or should we do what we have done hitherto, which is apply rules to BT and then expect the rates established by those rules to be exported to the rest of the industry, subject to suitable adjustments based on the actual costs they incurred because of the size and dimension of their networks, through reciprocity agreements?

The Commission said we should go for the literal approach. We think that would be highly burdensome, exactly the kind of red tape, frankly, that we are seeking to eliminate from our application of regulatory rules, and we will be reminding the Commission, as we take utmost account of their comments, that the reciprocity approach appears to have worked pretty well in the past – though we will of course keep that reciprocity agreement under review, and were problems to emerge, obviously we would seek to address those.

However, it is just worth emphasising that this is one of those examples where we obviously take most account of what the Commission says, but we do apply the appropriate regulation for our market on the merits of the case.

New Commission agenda

Finally just a forward-looking piece about what we expect next from the Commission. We have a new Commissioner, Neelie Kroes - and we have had some internal debate about how we should pronounce the name; we believe Kroes is the appropriate pronunciation, but if anybody knows different please do let us know. She is not by any means an unknown quantity for us because she has been Commissioner for Competition for the last four years, so she knows the sector because DG Competition have a joint supervisory role with DG Info-SOC over the Article 7 process, and of course are responsible for the application of competition law in the sector. From that point of view that is good news for us, that we have

somebody who is highly versed in the technical issues that we are facing, highly conversant with how competition law and, if you like, the underpinning theory of competition is applied, so that looks like a pretty good outcome from our point of view, and we look forward to working with the new Commissioner.

We think that the principal focus of the Commissioner and her team will be the implementation of the framework and those outstanding issues which I have already talked about, but President Barroso in his letter to Commissioner Kroes also laid out some additional tasks, and I thought it would be interesting just to note these.

Reforms to promote the single market in relation to 'digital content': there is a lot of interest here in the barriers to the free circulation of digital content across Europe, and in particular looking at potential reforms of copyright rules such as the promotion of pan-European copyright licensing – one-stop-shop copyright licensing for content. There are some formidable challenges to reform in that area, which I will not go into now, but just say that is something I think they will definitely want to look at.

We are seeing a lot of focus on measures to promote and stimulate the development of so-called 'smart ICT'. One big area there I think is in relation to smart grids for energy; a big linkage will obviously be the emerging green agenda, so that may turn out to be an important area of development both in terms of where the Commission puts its research focus but also potentially in terms of co-ordinated action at Member State level.

Finally I think it is worth saying that there are some very, very big issues coming up the agenda in relation to privacy and trust, in relation to digital consent and digital services. We have seen some preliminary skirmishes on these issues as part of the Framework Review negotiation, but we believe that this will be a very important set of debates which from our point of view will need to be conducted with a view not just to the privacy and trust considerations from a consumer perspective, but also thinking about how this impacts on business models.

One of the things that we are seeing for instance in Brussels is people using the privacy arguments as a means to promote their particular business models at the expense of other people's business models, and indeed vice versa. We hope that Commissioner Kroes will tie the threads of that together and look at the issues in an holistic way, and that will certainly be an emerging theme of this new Commission's agenda.

That is really all I wanted to say. I hope that has been a useful canter, or *tour d'horizon* as we say, through the emerging EU agenda. Thank you.

Question and Answer Session

Ed Richards: Okay, that is it from us. Any final questions on that, or anything more broadly?

John Karidis (MF Global): Just two quick questions; firstly, are there no tangible examples to be given about what Ofcom will do differently once the Digital Economy Bill goes through as it stands now? Then secondly, looking at the fibre SMPF equivalent product that Openreach has today, the cost of that is more than five times the copper equivalent. You started out your presentation, Ed, by highlighting the fibre NGA pricing freedom; from that, am I to deduce that this differential will stand as far as Ofcom is concerned, and as far as Ofcom is concerned you won't get involved in trying to reduce this multiple?

Ed Richards: On the first, yes, one tangible example if the legislation goes through is that we will have to enforce a Code in relation to illegal downloading, and that is quite a big deal. There appears to be a broad level of cross-Party support for something in this area – although I am not sure where the Liberal Democrats are – but that will be a very significant new responsibility, and is obviously very controversial, because two sides do not agree very much about it. But that is a tangible example of where our real activity will change.

If you meant in relation to the investment duties, no. I think that would be highly speculative. We have to see whether the duties go through, see whether they go through in the form proposed. Quite often, duties are what Parliamentarians argue about long into the night and little words are changed, punctuation is altered, all sorts of little things can change, and we will have to wait on that to see what comes out and then make an assessment of what we think about it, and how it, whether it changes in any material way our approach.

Do you want to just pick up the pricing issue?

Stuart McIntosh: I am not sure I want to comment on the facts of that and we will have to talk about the details to understand whether we share that view, but a couple of things: we are very conscious of the fact that it will be more expensive technology, but it does allow service providers to do more and we are keen to encourage investment in that technology if consumers want it; so we have not put any constraints on BT's ability to set wholesale prices for that technology. But I know in talking to them, and also talking to their

customers, that they are very concerned to try and make that as competitive as possible with current generation broadband, so I am not expecting that they will be trying to sell this proposition at anything like a five times multiple.

The second thing is that we are very conscious of the fact that there may be some regulatory restrictions which could unnecessarily increase the cost of deploying fibre, so in some of the variations – one of which we have already granted and one of which we are consulting on at the moment – we are looking at this (this is variations in relation to the Undertakings which Openreach or BT signed up to a few years ago). We are looking to make some changes there in order that these services, or this technology, can be rolled out cost-effectively, but with the expectation that this will be reflected in wholesale and then consumer prices.

Ed Richards: The key point here is the point about the market. Current generation broadband is pretty competitive in this country. It has increased in speed. There is a new roll-out by BT to ADSL2+, to 70%?

Stuart McIntosh: Up to 70% of coverage.

Ed Richards: The other companies want to do that as well. We feel that one of the most important things we did this year was publish the broadband speeds research, which shone a light for the first time ever on the actual speeds that were being delivered, and caused, we know, considerable discussion inside the companies about where they wanted to be in that assessment when we next publish it, which we will do next year. It provided consumers with some real insight, alongside the other two key criteria, which are obviously availability and price, into what they are getting. Therefore, the price is very competitive, the speeds of current generation broadband have improved and I believe they will improve again quite significantly. That provides a very significant context for any pricing of next generation access services, which I think you have seen in the approach that Virgin have taken in their 50 MBps product.

Chris Alexander (Lansdowne Partners): Related to that, it seems to me that Ofcom pinned its colours to the mast of infrastructure-based competition, historically, in the old world. In the new world, it seems as though you are moving towards re-monopolising a business and, at the same time, deregulating pricing. The area in which people can compete is smaller in fibre than it is in an unbundled world and yet you are happy to walk away from regulating pricing. It seems like a really important change in philosophy.

Ed Richards: No, if I may say, I believe it is a simplification of where we are. I don't think you can describe it in that way really. I think we remain absolutely committed to identifying where effective competition is sustainable as far upstream as possible. It may be in an NGA world, as a process of dialogue and exploration of that with potential investors takes place, that is a slightly different point in the chain than it was with the copper network, because you are investing in a new network. But I think the assumption that we are going downstream for some kind of services-based model is wrong. You will see next year when we put out documentation in this area that we will look at passive remedies as well as active remedies, in other words, physical remedies. We have made no secret of that, we have already conducted one duct survey to assess the scope for duct access, which is as upstream as you can get. We have another duct survey in the field at the moment, which will report to us in January and when we put the WLA/WBA market reviews out, you will see consideration of passive remedies as well as active.

But even in addition to that, what is interesting about NGA is that the active remedies, which people sometimes consider to be analogous to the bit-stream, IP-stream remedies of current generation broadband, the active remedies in NGA are far, far better. *<Fire alarm>* The active remedy is much, much better than the IP stream remedy. It is much more flexible, it offers far more scope for innovation and one of the things we will be looking at is the specification and interest around that. So I do not think that our fundamental philosophy has changed.

In relation to pricing, I go straight back to the point that I made in response to the first question. The reason why we can be relatively relaxed about pricing is because the market is providing the discipline for us. Current generation broadband is so competitive and so aggressively priced and, because it is difficult to see at the moment what is a profoundly different product with NGA such that you would say, well that is just a completely different economic market, whereas people think about it as a continuum, that will provide real discipline, which means we do not have to start regulating. That is a good position for us to be in. It may change in the future when we have more experience. If the killer app comes along which you can only get with 50 or 100 (MBps) and not with 20, it may change but, at the moment, that is how we see it. I think it is more nuanced than that.

Ed Field (Fidelity): I have a question more about other markets in Europe and your view of it. About 10 years ago, there was a big obsession with the market power of fixed line and not wanting cross-subsidies into mobile and all the companies were separated. And they have all, on the Continent, quietly joined again, though it has not happened in the

UK. Does Ofcom have any ability to look at those markets and question whether cross-subsidisation is going on in other European markets, given that you participate in BEREC etc?

Ed Richards: You have provided part of the answer yourself. The way we would do that, if we were concerned about those sorts of things, would be through BEREC. The two routes to those sorts of issues are, firstly, the Commission saying we have a responsibility across the EU for the implementation of the Directive and, if there are inappropriate cross-subsidies taking place, that is where you would expect them to be looking at it. Then the new role which BEREC will play, which I think Alex highlighted very clearly, is where you have a situation where the Commission issues a 'serious doubts' letter as I think it is called – all of the European mechanisms have these phrases: 'utmost account', 'serious doubts' and so on - they are a bit of insider lingo, but the relevant one here is "serious doubts". At that point, BEREC will form a small taskforce, we may be invited or invite ourselves onto that taskforce, and we would give a view through that.

And I think what will happen as a result of that, you will see real pressure for good quality regulation across the European Union, probably not overnight but you will see that. There is nothing that our peers like worse. Funnily enough, they do not mind a bit of a ding-dong with the Commission, that is fine, but what they really don't like is their peers saying 'you've got that wrong' – that is really bad news. The effect of that peer pressure and peer review I think will be far greater than someone in Brussels saying, 'we don't like what you did and can you change it?', to which the response often is, 'No, we won't!'. I believe that you will find this is quite an effective mechanism over a three to five-year period for raising quality and consistency of regulation across the European Union, and that's why we supported it.

We shall be under the same spotlight, I don't want to suggest that we are perfect. I am sure there will be occasions where decisions or proposals we have made will be subject to that peer review, and we shall have to enter into it in the same spirit with which we expect everybody else to enter into it.

Stephen Howard (HSBC): I had a further question about the European NGA recommendation. I note here one of your bullets is that under consideration is risk-adjusted returns for at least some NGA investments, and I think I have asked you about this before, Ed. What are they excluding? What in the Commission's view of an NGA upgrade does not merit a superior risk adjusted return, and why?

Alex Blowers: What the Commission originally proposed was that only FTTH deployments, as opposed to fibre to the cabinet or fibre to the node deployments, would qualify for any kind of adjustment. They argued that only FTTH is a risky investment. FTTC is an incremental investment. I don't know where they will end up on that, but I should say that one of the things that we and our colleagues in the European regulators group have said explicitly in our feedback is, that feels to us to be too crude a rule to be written in as hard-wired into the recommendation. It would be much better to say that regulators should be able to look at the total project risk on a case-by-case basis and make an assessment of whether there is indeed a significant enough change in the risk characteristics that requires some adjustment to regulated returns.

We are hoping that that is one of the areas where we will get a bit more flexibility and a bit more nuance in the final version of the text, but that was where the Commission started, that FTTH is really risky, so we might need to do something with that, but FTTC is never risky so we don't need to make any adjustments to our approach.

Ed Richards: We are going to have to wrap up, we are out of time. Thank you all for coming. We probably won't see you again before Christmas, so have a good Christmas and a good break. Thank you.

- Ends -