OFCOM

BRIEFING FOR ANALYSTS:
TELECOMS

Tuesday, 19 April 2011
Ed Richards (CEO): Good morning everybody, thank you very much for coming. I am CEO of Ofcom and this is one of our periodic, roughly six-monthly, briefings to analysts and, as those of you will know who have attended before, our aim here is not to release new information, it is to explain and give you a little more colour, background and texture in relation to some of the decisions that we have taken, or some of the consultations that are out there at the moment. Therefore, our aim is about transparency, to make sure that you and the markets generally understand our thinking and the way in which we are approaching regulatory decision-making in the areas for which we are responsible.

We have a good agenda for you this morning, I hope you will agree. Immediately after these brief introductory remarks, I shall be followed by Andrea Coscelli, who will talk about the decision around mobile call termination rates, which comes into effect on 1 April. Then Stuart McIntosh, Director of our Competition Group, will talk about the LLU and WLR charge controls. Thirdly, Graham Louth, who is Director of Spectrum Markets here will talk about the 800 MHz and 2.6 GHz proposals. Finally, Craig Lonie will talk about how we are approaching cost of capital, which is something that underpins a wide number of our decisions in this area, and I am sure will be of interest to all of you.

This morning, we propose to take questions at the end of each session. There will be time for any other questions at the end of all the sessions but, if you can focus your questions on the particular topic in hand, and if anything does not fall into that category that you would like to ask about, please save it up to the end.

Perhaps I may mention two other small matters. The first is to remind people to turn off their mobile phones and BlackBerries if they have not already done so. Secondly, because we are streaming this live, could you please wait for a microphone before you ask a question, and could you also let us know where you are from before you ask the question. Thank you very much and I shall hand straight over to Andrea.
Andrea Coscelli (Ofcom): Thanks, Ed. I shall say a few words on the decision on mobile call termination rates which we published on 15 March.

Mobile call termination rates (MTRs)

As most of you know, what we regulate is the termination rate that in this case a mobile operator charges to interconnection parties. This is because under our calling party pay system, the originating operator pays the terminating operator to terminate the call. This is an area that has been regulated for the last 15 years everywhere in Europe and in many places around the world, so this decision was the follow-on to a number of previous decisions in this area. These decisions tend to be contested and discussed, because there is quite a significant commercial impact for the operators, which has been in the case in the UK and in most other countries as well, as most of you will know.

New rules for MTRs took effect on 1 April

We had the previous regime in place which started on 1 April 2007, which ended at the end of March this year. Under what we call the 2007 regime, we only regulated the rates for the large national operators, so for the five, now four, national operators. The regulated rates were around five pence per minute in this regulation that ended at the end of March. The other interesting feature of this system was that the smaller players had unregulated rates, so their rates were determined under commercial agreements between the parties, and we had a few disputes between some of the smaller players and the larger players during this regulatory cycle which were determined using our dispute resolution powers.

In 2011 we concluded in the middle of March our decision and we have now set up a regime which lasts until the end of March 2015. The current decision regulates the rates for all players, so in this case we have 32 players whose rates are regulated, so both the national and the small players. Therefore, all the players who have mobile number ranges have their rates regulated. The important distinction is that the four national players have their rates charge-controlled, so we have set precise rates for them, and these rates are falling over time over the four years to 0.69 pence per minute in real 2008/9 prices, by April 2014.

What we have decided for the 28 smaller players is that their rates should be regulated on the basis of being fair and reasonable, and we published a couple of weeks
ago some guidance about the way in which we interpret fair and reasonable conditions for the smaller players.

**Our approach reflects our duties and market realities**

How did we end up with these rates? It was a fairly long process. We published two detailed consultations, we had detailed engagement with industry stakeholders and with consumer groups. We received a number of detailed responses to both submissions, we collected quite a lot of detailed information from the operators. In this slide, we have tried to summarise what is in the hundreds of pages of decision we have published. We have a legal framework and our statutory duties. There is a European framework and, in this particular case, there was a European recommendation on how to set mobile termination rates, which was published in 2009. We looked at the direct effect that regulation would have, so our expectation of what would happen with lower mobile termination rates, and the effect of lower payments from the fixed operators to the mobile operators.

We tried to assess what the expected effect would be on both the mobile and the fixed players, taking a number of reasonable assumptions about their expected commercial behaviour, which is very much what you use in your model – typical assumptions for this market.

**Rates to fall 37.4% pa in real terms for 4 years**

What are these rates? The rates are falling quite sharply over time: 37.4% in real terms over four years. The numbers we have here are the rates in real 2008/9 prices, so they go down from 4.17/4.48; Hutch 3G had a slightly higher rate in the previous regulatory cycle but this difference has now been eliminated, so there is no longer any asymmetry in the rates. The rates will go down from 2.66 all the way to 0.69 from 1 April 2014 and, as I said, for the other providers the rates will be set on the basis of being fair and reasonable.

For this year, so as of 1 April 2011, the actual nominal rate is 2.984, this is just applying the RPI for the two years to the real rates and, clearly, for the next three years, the rate will depend on what the RPI will be over the next three years.

**2011 charge control in context**

As far as context, if you look at this picture starting from 2000, mobile termination rates have been falling quite substantially. The extent to which they have been falling depends a little on the particular regulatory cycle, from the estimates of cost, and the fall we expect for the next four years is more pronounced than in the previous regulatory cycle. What is interesting to see in this picture is that both the subscription measured as the sheer
number of SIMs in a country and ownership, which is individuals owning a mobile phone, has been increasing over time even as the MTRs have decreased.

One of the arguments we have received from a number of stakeholders was that reducing MTRs sharply will have a very negative effect on ownership. This is something we looked at in quite some detail but we were not particularly convinced by this argument. Simply looking at what has happened in the past and the fact that similar arguments were made in the past to us, we thought it was quite irrelevant.

Outcomes of falling MTRs

The final slide is to say why did we end up with these MTRs, and our detailed analysis showed the main reason was that we believe lower MTRs will be very good for promoting competition between mobile operators. It will be good in terms of efficiency and will also lead to lower fixed prices. This was another argument we discussed in detail with some of the stakeholders, arguing that the fixed operators will not pass through this reduction in mobile termination rates. Our view is that, as most of you know and write in your reports, the way that competition works in the fixed market at the moment is much more about bundles and about headline prices, rather than the prices of individual types of call. Therefore, we are confident that prices will decrease, even if it is difficult to predict exactly what types of prices will decrease, because of this reduction in mobile termination rates.

The other argument was the concern that lower MTRs would substantially reduce the size of the prepay market for mobiles, which again is an argument that has been around for a number of years but, in our view, this is unlikely to happen.

Those were the highlights of our decision which was a very long decision which is published. There are a number of annexes and a lot of detailed information. I do not know whether you have any questions on the decision or on the process?

Question & Answer Session

Matthew Howett (Ovum): I have one question: the final rate of 0.69 pence differs from the 0.5 pence that we saw in the original consultation. Can you briefly explain why it was higher and why it was not the 0.5 pence that we originally saw?

Andrea Coscelli: That rate is determined using a fairly complex model of cost for the operators. We tried to estimate the cost of an average efficient operator, so we blend the costs of the operators and make a number of assumptions. What we did in April
2010 when we published the consultation was that we also published the draft version of the model. A number of the operators engaged quite substantively with that model, so we received very detailed submissions on a lot of costs and assumptions in that model. We went through all the assumptions and all the comments we received, and we made a number of adjustments to the model. Certain adjustments led to higher prices, others to lower prices, so in the end the figure of 0.69 is the effect of all these adjustments. We have these fairly detailed modelling annexes in our decision which shows all of these changes. I would say it is almost a mechanistic reaction to a number of good comments we received about the model.

**Guy Peddy (Macquarie):** I am intrigued as to how you measure efficiency, what you look at? Secondly, in your analysis, did you come across any conclusions as to how MTRs impact or do not impact investment levels?

**Andrea Coscelli:** To your first point about efficiency, the two areas on which we focused were the dynamic efficiency and locative efficiency. With locative efficiency, if you take a snapshot taking into account prices and decisions by the operator, what is the effect on consumers? One of the things we found attractive about lower MTRs is that, because they reduce the price of off-net calls for the operator, we believe it will lead to operators offering larger bundles of calls, so the price of calls will probably go down, and perhaps some of the fixed subscriptions for bundles will go up to compensate for it. Therefore, from an efficiency point of view, it is quite good for consumers to enjoy the networks more, to be able to make more calls if they value them, when the marginal cost of transferring calls on the network is quite low. That was an important consideration.

The other consideration was competition which is also linked to efficiency. We thought that lower MTRs would help in increasing competition among the four players, because, in a sense, the four national players are different. The smaller players such as Hutch, at the moment given the traffic balance, have quite a lot of outbound calls, and high MTRs create more of a floor for them in pricing those calls. We thought this would also help to increase competition in the market which in turn generates efficiency.

To your second question about investment, that is a point which we considered in detail. There is what we call the “water bed effect”, which is the reaction by the mobile operators to the fact that MTRs have come down, and we expect they will adjust their prices to compensate for this loss of funds coming from fixed providers. In that case, we thought that, because of this compensation and the fact that this “water bed effect” is quite high, combined with the fact that costs are coming down, the materiality of reduction in profits will
probably be very small for the mobile operators. The driver for investment, from a forward-looking point of view, we believe is much more competition for data in the retail market, it is much more about being competitive as far as the packages which they are able to offer.

This remains a competitive market, we only regulate a very small amount of revenue, which is why we were not as worried as we probably would have been in other situations, in other markets by having a reduction in revenues of this sort.

**Paul Marsh (Berenberg):** You seem quite confident that the reduction in mobile termination rates will be passed on to customers making calls to mobiles from fixed but what scrutiny did you apply to how fixed and mobile retail rates have moved in recent years? How confident are you that has been passed on in the past?

**Andrew Coscelli:** The fixed market we regulated until 2007, so now in 2009 we concluded our review of the fixed voice markets and we found that BT no longer had significant market power. Therefore, we are saying that we believe this market is competitive. We have a lot of monitoring and market intelligence of the fixed market, and our view is that it is a competitive market, there is an increasing use of bundles in competition. Basic economics would say that if the rates come down in a competitive market, these will be passed through because, if someone does not pass them through, the others will and will gain market share.

**Paul Marsh (Berenberg):** Sorry to interrupt you but it doesn’t sound as if you have scrutinised on a pence-per-minute basis, for example, what has happened to the trend in price?

**Andrea Coscelli:** We are interested in the effect over the next four years. We look at the past because the past is informative of the future, but you do not have a one-to-one relationship in a market where a number of other relevant factors change. For instance, if you look today at the advertising offers of most of the big players in the fixed market, these tend to be for bundles of broadband access and calls.

**Paul Marsh (Berenberg):** It is very similar to mobile.

**Andrea Coscelli:** Yes, but how do you allocate the revenues from calls to mobiles for different types of calls when you have all these different types of bundles? There is one direct relationship which is that some add-ons have been offered by some of the fixed players over the last few weeks in reaction to our decision, so now if you go on the website of Virgin Media and TalkTalk and BT, there are these add-on bundles with lower prices for calls to mobiles. Therefore, there is immediately a direct relationship. However, I would say
that part of it is also recycle possibly into lower headline figures for some of the bundles. We would be equally happy if the margins on calls to mobiles stay slightly higher and this was recycled into lower prices for broadband access or line rental.

**Ed Richards:** Can I just add, if it is as simple as do we scrutinise the pricing of these markets, the answer is of course we do but, if retrospectively and will we monitor it going forward, of course we shall. If we discover that despite this, fixed line call prices start going up, that will raise some questions for us and we shall have a look at that in due course. We track the pricing in relation to all of these areas very, very carefully.

**Andrew Beale (Arete Research):** Looking forward, how do you allocate the revenues and costs between voice and data in order to understand what the incremental cost of voice termination are? What sort of assumptions are you making about the take-up of data?

**Andrea Coscelli:** To your latter question on the take-up of data, we have asked for information from all the providers, and we have looked at all the research published including by a number of you. That was an assumption that we put into our consultation and our model, which was scrutinised by the stakeholders, we had comments on it. What we have in the final model is some kind of informed average of the data from the operators and the data from the market.

As far as how we split between voice and data, the way the model works is that it is almost an engineering model, which builds on the cost. There is an allocation module which allocates costs to data and voice, which again is based on the assumptions of the operators. It is driven on the costs of the network equipment and the different use that voice and data make of the equipment, so all of that is detailed in our model: it was detailed in the draft model we released and it has been discussed with the operators.

**Will Draper (Espirito Santo):** I want to ask about the end game here. I wonder how much you see 2014, 2015 and 0.69 pence per minute as the end game, or whether you think we are still on a glide path that will take us lower than that? Ultimately, in the long term, is there a scenario in which we go to zero termination rates in the UK?

**Andrea Coscelli:** In our preliminary consultation, we floated a number of options, including going to bill-and-keep which would effectively be zero, and it was fairly clear from the responses from the industry that they believe for this regulatory cycle, so up to 2014/15, a cost-based assessment is the right one. There was disagreement about whether
to do just incremental cost or add the common cost, which is what we decided when we chose Pure LRIC.

After 2014/15, there are important technological changes in the market which are likely to happen over the next few years, so we very much keep an open mind about what will happen after 2014/15. Because of the way in which these regulatory reviews work, probably 12-18 months prior to the expiry of the period we shall start a new market review: talk to the operators and try to get a sense. It is very unclear in our minds as to what will happen after 2014/15, and the market situation then will very much dictate what will happen.

PROPOSED CHARGE CONTROLS FOR LOCAL LOOP UNBUNDLING (LLU) AND WHOLESALE LINE RENTAL (WLR)

Stuart McIntosh
Group Director, Competition

In preparing for this last night, I was thinking that I had not been at Ofcom all that long until I realised that the first presentation I gave to this group was three years ago on this very topic. I was thinking it is amazing how time flies when you are having fun, then I thought perhaps I ought not to say that or you may think there is something very strange about a person who thinks having charge controls is having fun, but I guess someone has to do it!

Context for our proposals

LLU/WLR have been pretty much central to the growth of competition in broadband and telephony services in the UK. As this slide shows, at the end of last year we were up to over 7 million unbundled lines which was pretty much evenly between MPF and SMPF, and over 6 million WLR lines. This development in competition has been very much underpinned by the availability of these regulated inputs, both the obligation on BT to provide these inputs, and the fact that they have been charge-controlled.

During the course of last year, we conducted two further market reviews looking at the respective markets within which these wholesale offers sit. We came to the conclusion last year that BT does continue to have what we call significant market power in both of these markets. Consequently, it is appropriate for them to have a continuing regulatory obligation to provide both input, and it is also appropriate for us to continue to regulate the commercial terms on which they are made available to different operators.
Scope of the proposed controls

Therefore, at the end of March, we published our proposals in respect of the charge controls, which is that thick document sitting over there on the table, which I am sure some, if not all, of you have read. We propose to put new charge controls in place which will run until the end of March 2014, so that is three years from the expiry of the last controls, which expired at the end of last month.

One general point worth noting is that, because these charge controls will come into effect after May this year, i.e. after the implementation of the new EU framework, we were very mindful of the requirement to make sure that they were consistent with the obligations and requirements in that framework. Thus the three-year control and future market reviews on charge controls will almost invariably be for three years.

The second point to make is that we shall continue to have individual controls for MPF, SMPF and WLR and, as previously, we shall have separate controls for what we call ancillary services. These are a whole variety of different things, there is something like 140 of these different ancillary services and they relate to the provision of LLU services be it MPF or SMPF, and some of them are shared between the two. Because there are so many and some of them are very small, it is not appropriate for us to charge control each one individually. It would not be practical and it is not clear whether it would be commercially desirable either. Therefore, we have grouped those into three individual baskets, and they are for things like migration services, new connection services and the whole panoply of services that CPs need when they unbundle exchanges and put their own equipment in the exchanges: they need space, they need power, they need air-conditioning, so that is what the ancillary services relate to.

As to how we have gone about this, this is in a sense a further cycle as we have been through this two or three times before with these individual services. We have quite a large, complex and sophisticated model of these services, which we have updated relative to the last time we did it for changes in volumes and volume projections, changes in efficiency assumptions, changes in important inputs such as the cost of capital, which we shall describe later. We have updated that model and based our current views on the outputs from those models.

The second thing we have done is we have taken very explicit account of the proceedings and the conclusions which emerged from the competition review of the last set of charge controls. As some of you will remember, Carphone Warehouse, now TalkTalk Group, challenged and appealed our decisions on LLU and WLR, which led to them going to the Competition Appeal Tribunal and from there onto the CC who have bigger responsibility
for reviewing any appeals of our charge controls. That was a very intense and extensive review of our methodology, our approach and the issues raised by Carphone Warehouse of which there are about 30 or so.

For the vast majority of those, the CC found that what we had done was perfectly fine. There were a few areas where they felt that we could have made alternative assumptions in areas such as the efficiency of Openreach, some aspects of how we constructed the ancillary services and one or two details regarding how we had allowed for inflation. However, in the main, they were very supportive of the modelling approach we have taken and the detailed process and work, so we have a fairly high degree of confidence that the basic mechanics and the modelling framework we are applying here not only remain valid but, arguably, are even better than they were previously.

**Proposed new charge controls**

In order to abstract from the detail, I have simply put up here the proposals in respect of the main rental services. The rental charge at the end of March for MPF was just over £89 and we propose that, over the next three years, that will change by between RPI-1.2% and RPI-4.2%. For the SMPF rental, which at the end of March was just over £15, we propose that will change in future by RPI-11.6% to RPI-14.6%. The WLR rental which was just under £104 at the end of March will change by RPI-3.1% to RPI-6.1%.

What probably stands out from the slide is the quite significant change in real terms relating to SMPF. That is a product of two things. One relates to the general factors which underlie the modelling which relates to all these services, because it is a common model if you like but, more significantly, as we looked in further detail at some aspects of the cost allocation, particularly within exchanges, we came to the conclusion that there was potentially an over-allocation of costs historically to some of these SMPF services, so we have made an adjustment this time. It is not a huge adjustment but because the base number is relatively low, it has a significant percentage impact.

**How the regulated rates have changed over time**

In terms of how that looks in some sort of historical context, there are probably two points to make. One is that there will be a continual narrowing of the differential between WLR and MPF services, which is largely down to the fact that WLR services have to recover the cost of line carriage whereas MPF do not. As you can also see, the changes we are talking about in respect of the two most significant rental services – MPF and WLR – are not that great going forward.
Our approach to valuation of duct

Finally, let me come onto one important question which I enter into with a sense of some trepidation, because it is fearsomely complex. It has to do with duct valuation. The document contains quite a lot of detail in relation to this, which I shall not try to cover in the context of one slide but there are a few points I want to highlight which you might want to hang onto.

BT in the course of preparing its regulatory accounts for 2009/10, concluded that it was appropriate to change the valuation of duct in the regulatory accounts, where it is all based on current cost accounting principles. That had quite a significant impact. The net book value of duct in the regulatory accounts went up to about £6.5 billion, which compared to a number of around £4.7 billion in the year preceding. There is a bit of a difference because of further additions and depreciation year on year, so you cannot compare them strictly without making those adjustments. However, you can see from that there is quite a material change.

BT has gone on to argue and made representations to us that we should reflect the changes in those duct values in the way that we do charge controls. That is not a simple one-to-one translation, it is quite complicated. There are two dimensions to their argument. One relates to the treatment of what are called pre-1997 assets. In the way that we do charge controls, we currently and in the past two charge controls have recovered those based on historic cost accounting principles, largely on the basis that those were the principles that were in play when the investments were made. So BT have argued that it is appropriate to reverse that principle.

The second point they have argued is that, if you look at both pre-1997 and post-1997 assets, it is appropriate to revalue those assets in light of the gross book revaluation that they undertook and reported in the 2009/10 accounts. Let me take those issues in turn briefly.

We looked at the pre-1997 valuation and concluded that it is not appropriate for us to change our methodology for the simple reason that we believe that, as the investments were made initially on the basis of an HCA regime, to move to a CCA regime now or to apply a CCA regime now would potentially lead to over-recovery in relation to the investments in those initial assets. This would mean that, all other things being equal, the wholesale charges would be higher.

With regard to the general increase in value of the assets to take account of the valuation, that question then becomes most germane in the context of the post-1997 assets – I hope you are following me as I realise it is quite complicated. We have looked at the
value that has come out of BT’s method and I believe I am right in saying that the net book value of post-1997 assets is of the order of around £2.9 billion. Then we have said, if you look at all the investments in duct that BT has made since 1997, what does that number look like? We have adjusted that to take account of depreciation, and we have adjusted it to say if there was duct work going on in 2000, if you were to do it now it would probably cost you more. It is a very labour-intensive activity, construction costs have risen.

Therefore, we factored the actual spend to allow for increases in general inflation or increases in general construction costs, and we have not been able to get the two estimates to match. The BT number of £2.9 billion compares to a range which we have come up with based on actual spend of between £2.0-2.2 billion. At this stage, and it is only a consultation, we have not taken a decision, we do not believe we have the evidence to justify making that change in approach, because we cannot reconcile the new numbers to what we think is actual spend, factored up on some sort of reasonable basis.

At the moment, we have not rejected BT’s overall valuation of their assets, this is a very complex area, the number may be approximately correct. However, we are saying that, in the context of these charge controls, we do not believe it is appropriate to change the methodology we have applied to pre-1997 assets. Therefore, for the moment at least, we propose to use an index-based method to derive the number for the post-1997 assets, which results in a number that is not dissimilar to the numbers we have used in recent years. It is quite complicated but I hope you have followed it and, if you want a detailed exposition, it is in the document.

**Next steps**

The consultation closes on 9 June and, once we have the stakeholder responses, we shall take account of those, having further discussions with stakeholders and others in parallel with doing further work ourselves. We hope to have the new charge regime in place by around Autumn.

Let me say one final thing before I close. You will notice that there is a gap between the expiry of the old charge control and when these new ones might come into place. We have interim bridging arrangements in place which are based largely on taking what we did last time, adjusted in light of the outcome of the CC appeals process, so that is what applies at the moment. However, the numbers are not greatly dissimilar to what is implied by our changes here, with the exception of SMPF. With that, I would be happy to take any questions.
Question & Answer Session

Maurice Patrick (Barclays Capital): You have talked a lot about MPF changes, WLR, we are moving from a world of copper to one of fibre which is a less regulated product from BT. How do you anticipate looking at that in the future, especially if you do start to see any elements of predatory pricing from BT regarding the difference between their retail and wholesale pricing?

Stuart McIntosh: As we said when we looked NGA and we continue to look at that, and given there is quite a lot of uncertainty about the cost of providing NGA services to do with the issue of scale and so forth, also because we felt those prices were constrained by current generation broadband, we did not think it appropriate at this point to regulate those prices. That is where we still are. We are looking to see how the market emerges. Were there to be concerns about predatory pricing, I am sure that stakeholders would bring those to us and we would look at them. However, we do not see evidence of that right at the moment but it is something that we have to be vigilant about as we are very conscious of the issue. Indeed, in the document that we published last year on the wholesale local access market, we provided some guidance to stakeholders about how we would approach margin squeeze type issues in the event someone were to be concerned about that. Therefore, we have tried to provide some guidance for industry, both so that BT has something on which they can operate, and so that others have a basis for understanding how we would treat a case were they to bring it to us.

Paul Sidney (Credit Suisse): Referring to the fairly complex duct valuation slide you had up there, how should we think about that in terms of BT’s proposed duct-sharing prices, and how would you potentially get involved there if at all? How should we think about that as far as the debate over valuation?

Stuart McIntosh: I don’t know how far back you want me to go. There is a process in terms of BT’s duct-sharing prices which has not yet been worked through. We placed an obligation on BT last year to provide access to its ducts and poles, and we put in place a process whereby they had to produce a reference offer and offer commercial terms to providers. We gave them until June of this year to get that process done, so that is still ongoing. We cannot say at the moment that there is a final set of proposals from BT on that, and BT have said publicly that, although they have put some numbers into the public domain which they are sharing with CPs, there is still dialogue going on and they are looking to conduct trials. Therefore, there is a bit of a caveat or health warning attached to my answer.
However, our understanding is that, at the moment, the duct prices that BT are looking at include their view of how ducts should be valued, factored into those prices. In our charge control document on LLU/WLR, we drew attention to the fact that we would see there being a need for consistency in the way that duct valuation is approached in that context and how it is approached elsewhere, particularly with respect to ducts or duct access.

Steve Malcolm (Evolution): Excuse my ignorance on this but can you give us an idea of the basis of the opinion you give on BT’s regulatory financial statements, and whether you raised any objections at the time they published the revaluation? When the next set come out and we see movements like this, how should we interpret them? To the layman it looks like the goalpost has slightly shifted between the publication back in July/August and the charge control documentation in March.

Stuart McIntosh: It is probably important to remember that BT’s regulatory accounts are their regulatory accounts and not ours: we do not sign them off in that sense. The people who do sign them off are PwC and in the document we included the opinion that PwC attached to that valuation. One thing that is important to bear in mind is that PwC do not offer an opinion relating to how the valuation should be factored into regulated charges. Rather, we have looked at what has been done and taken a view at different points in time about the appropriate way to take account of that information in setting the charges.

Steve Malcolm (Evolution): [additional comment off microphone about PwC]

Stuart McIntosh: I have the Head of Competition Finance here and he may or may not contradict me. We do not give them a steer. The whole idea is that they are independent of us, they have a duty in respect of reporting to us as well as to BT but we do not instruct them as to what they ought to do. Craig, I don’t know if there is anything you want to add to that?

Craig Lonie: All I would add is that they have a duty of care to us and to BT in auditing the financial statements, and that is as Stuart has set it out. The only other point I would make is that BT’s regulatory financial statements show the valuation of all of their assets on a CCA basis. As Stuart explained, the basis on which we set LLU charges involves carving this asset base up and taking old stuff and valuing it on the basis on which BT was privatised, in effect, in a world where CCA accounting did not exist. We take the stuff that has been built broadly over the last decade and only that, and only that is valued on a CCA basis. Now PwC’s audit opinion does not delineate asset valuation and the basis
on which that applies to assets of different vintage. So PwC’s audit opinion, and we clarified this in the consultation, does not give us a valuation that we can directly transpose into these decisions, which is why the audit opinion, only in so far as it relates to these assets, is of limited value.

**Steve Malcolm (Evolution):** I understand all of that but, generally, from a position of ignorance, what input do you have into the publication of those accounts, PwC have a duty of care and all of that? Is it a cursory look, do you spend a long time going through them before PWC gives the opinion, can you give a sense of the input you have?

**Stuart McIntosh:** We do not sign them off in advance and, in this particular case, when BT produced the numbers, to be perfectly clear with you, we flagged with them earlier that there would potentially be an issue.

**Andrew Beale (Arete Research):** Thinking back in time and perhaps my recollection is wrong, I thought that in the original remedies that resulted in LLU going back 10 years plus, the pre-1997 HCA method for ducts was a matter of expediency, because that was all that could be done at the time and it was pretty complex negotiation. Is that recollection wrong, or have we gone back and post-justify that HCA was because the regime was HCA at the time? Secondly, regarding the guidance on margin squeeze that you mentioned, I wonder whether you can give us an overview of what margin squeeze means as far as the returns that BT Retail would have to make in providing a fibre service to customers?

**Stuart McIntosh:** Let me take your first question, and Craig may want to come in on this as well. I do not believe that anyone here was in Oftel in 1997, so there is a slight risk that we may be reinterpreting history or reinventing it. There was a view taken at the time that it was appropriate to move to a basis for regulating BT which tried to capture accounting information in a way that was more consistent with economic costs going forward, and that CCA was a better basis on which to do that. There may have been some pragmatism built into it but there was a fundamental principle underlying a move from HCA to CCA.

What I believe was not fully appreciated at the time was whether, if competition does not emerge in the way you expect so that it puts a discipline on prices, that creates an environment whereby you may see returns on the assets that were invested prior to that change creeping up over time, so that the investor, in this case BT, over-recovers those investments because of the way in which the CCA mechanism works. Therefore, the policy which we have adopted reflects that concern, so it was a principle decision taken at the time
but later on, as we considered it, we realised there was potentially a problem to do with the
treatment of these earlier assets, which may potentially inflate returns and distort wholesale
prices. That is why when we reconsidered this issue in 2005, we made a further adjustment
to reflect that.

With regard to margin squeeze, we have not specified what an appropriate return
would be for BT Retail to be making on its GEA services. It is one of these things that is
very litigious and for me to anticipate that in the event that somebody would bring it to me
could be problematic, so I do not want to stand up here today and say this is the number.
There are many precedents out there as far as how a margin squeeze case may be run, but
I would not want to put a specific number on the rate of return that is appropriate for BT
Retail to be earning.

Andrew Beale (Arete Research): Can you tell us the sort of guidance you
gave the operators?

Stuart McIntosh: There are various ways in which you can do a margin
squeeze test. One way is that you look at whether or not the cost standard is one where we
are looking at what are called equally efficient operators, which is very typical of what would
apply in an ex-post margin squeeze type investigation that would be done potentially by
ourselves or by the OFT. Because we are setting an ex-anti remedy where our duty and
focus is on trying to promote competition, we may want to set a different standard. For
example, that may then allow us to take account of the scale of the other operators and, in
looking at what an appropriate margin is, to factor in the differences in scale between BT and
the other operators. This may result in a different wholesale price compared to one based
on an ex-post valuation.

Wilson Fry (Merrill Lynch): I have a very quick question. You forced BT to
open up their ducts. Do you have any plans to open up Virgin’s closed system?

Stuart McIntosh: Given the current regulatory framework, we can only
impose an obligation on an operator to open up its duct if we find that they have significant
market power. In the last market review we did relating to this market, which is the one we
did last year to which I have referred, the only operators we found to have market power
were BT and Hull. We did not impose the obligation on Hull because we did not think it was
appropriate, and we did not conclude that Virgin had market power. Under the new EU
framework to which I referred earlier, if the law is passed as is currently proposed, we shall
potentially have the power to require operators to provide access to their ducts. The terms
under which that might be done, the principles we might apply and so forth have yet to be
worked through but that potentially does broaden the reach of what we might do in relation to requiring companies to provide access. However, these are very early days in respect of that and there is nothing on the stocks at the moment in relation to Virgin Media.

As Ed said, there will be the opportunity if, on reflection, you have further questions at the end but I shall move on now to Graham.

PROPOSALS FOR THE AWARD OF 800 MHz AND 2.6 GHz SPECTRUM
Graham Louth
Director of Spectrum Markets

Good morning everybody. I shall spend a few minutes introducing our proposals for the award of the 800 MHz and 2.6 GHz spectrum. We published our consultation on this on 22 March, which followed on from a Government direction that was made to us in December of last year. I shall mention that in a couple of places as we go through the presentation, because it is relevant to the way in which we have approached this activity.

What spectrum is being auctioned?

What is this spectrum we are auctioning? It is the 800 MHz/2.6 GHz bands which will almost certainly be used to deliver next generation, that is to say 4G mobile broadband services, probably using either LTE or WiMAX technologies. However, just to be clear, we are not prescribing what the technologies should be or even what services should be delivered. It is up to the operators or the acquirers of the spectrum to decide what they want to do with it. Assuming that it will be used for 4G mobile, it is, therefore, very important to the future of the mobile sector in the UK.

It is also a lot of spectrum. It is roughly three quarters of all of the mobile spectrum that is in use today, 2G and 3G, and, to give you another example, it is 80% more than was awarded through the 3G auction in 2000. It is, therefore, extremely important to the mobile sector going forward.

Regarding the timing of the availability of this spectrum, the 800 MHz spectrum is currently being used to support analogue and digital TV services Freeview, which will continue until the end of 2012 when DSO completes. However, because there are some digital TV services in some of the 800 MHz frequencies, the frequencies will not be available throughout the whole of the UK until probably the end of 2013 and in some areas it may be later, some time in 2014. First of all, we have to complete Digital Switch Over (DSO) and, secondly, we have to clear two channels – 61 and 62 – of DTT services that were put into those frequencies before we decided we were going to make the 800 MHz band available.
Also channel 69 has to be cleared of wireless microphones, these sort of things. Therefore, the 800 MHz band should be available from the end of 2012 across a large part of the country and across almost all of the country by the end of 2013.

As far as the 2.6 GHz band is concerned, the issue we have there is that band is immediately adjacent to air traffic control radars on the 2.7 GHz band, and the stakeholders have to do some work to improve the filtering on the front end of those radars in order that they will not suffer interference from mobile services in 2.6 GHz. That work will probably kick off in 2012, so the band itself will not be available for new use until probably the end of 2012 and perhaps through 2013, depending on exactly how long it takes to fix those radars. So not immediately available but coming on stream within the next few years.

Overview of mobile spectrum bands

Just to put a little more colour onto these bands, this slide shows you the so-called sweet spot, the most valuable spectrum in the UK. As you can see, the 800 MHz band is here. It is almost right next-door to the 900 MHz band, so the band that has historically been used for 2G services by O2 and Vodafone, although it is now available for use for UMTS 3G services as well. You can see it is roughly the same amount of spectrum as is available in the 900 MHz band.

The 2.6 GHz band is right at the other end of the sweet spot and, as you can see, it is right next-door to these aeronautical radar bands. It is above the frequencies that are used for 3G services which are in the 2.1 GHz band but, as you can see, it is a lot of spectrum, it is almost equivalent to the 1800 MHz spectrum. In addition to the so-called paired spectrum that is used for traditional frequency division Duplex technologies, which are the light green bands, we are also awarding the 50 MHz that sits in the middle of that band, which cannot be used on an FDD basis but can be used on a TDD basis (Time Division Duplex). The WiMAX technology uses TDD so it could go into that centre gap. There is also a version of the LTE technology called TD-LTE, which could likewise go into that band, and there is a growing interest in TD-LTE. It is a technology which the Chinese are promoting quite strongly. So those are the frequencies.

Who holds what today?

Let me put this spectrum into another context. This column at your right-hand end shows all of this new spectrum: the paired 800, the paired 2.6 and the unpaired 2.6. The rest of the columns show you how much spectrum is held by the existing mobile operators today. As you can see, we have O2, Vodafone, Everything Everywhere and Hutchison. As I am sure you all know, Everything Everywhere is the merger of Orange and T-Mobile. All of those four operators hold a fair chunk of 2.1 GHz 3G spectrum, which is the light blue
column. The 2G spectrum is split between O2, Vodafone and Everything Everywhere, and it is split in a fairly asymmetric way. O2 and Vodafone have half of the 900 MHz band each, that is the red column at the bottom on the slide, and a little bit of 1800 MHz spectrum. Everything Everywhere have most of the 1800 MHz spectrum, that is the 45 MHz purple column.

As a requirement of the phase one clearance of that merger, Everything Everywhere agreed to divest 15 MHz of their 1800 MHz spectrum, and that is the small column I have shown towards the right-hand side of this diagram. They either divest that privately before the auction or, if they have not completed that sale before the auction, that spectrum comes into our auction to be sold through the auction. Therefore, our proposals as set out in the consultation encompass the possibility that spectrum might be included within the auction as well as the 800 MHz and the 2.6 GHz.

Probably, the most contentious aspect of mobile spectrum is what happens to the 800 MHz, the reason being that low frequency spectrum – the 800 MHz and the 900 MHz spectrum – is seen as being particularly valuable, because it allows operators to provide good coverage in rural areas and to provide good coverage inside buildings in urban areas. As you can see, O2 and Vodafone have all the low frequency spectrum that is available today and other operators – not just the incumbent operators but other potential new entrants – are, therefore, very interested in the opportunity to get hold of 800 MHz spectrum in order to have the same possibility of providing cheap rural coverage and good in-building coverage using the 800 MHz spectrum.

What are our objectives?

What are our objectives in all of this? As you would expect, there are standard statutory duties to promote the interests of citizens and consumers and, in particular, to make sure this spectrum gets into the hands of those parties who are likely to make best use of it for the benefit of UK citizens and consumers. As I have said, we anticipate that will be parties who are interested in providing next generation mobile broadband services.

What rules are we proposing?

As I mentioned earlier, one of the precursors to this project was the giving to us of a Government direction in December last year. One aspect of that direction is an obligation on us to undertake an assessment of the future competition in mobile markets and, in particular, to look at how we might promote competition in those markets through the award of this spectrum. Therefore, a key consideration for us in the preparing of our proposals in this regard has been to look at how we can best promote competition and how we might be able to foster new entry into mobile markets through this award.
More generally, we are very keen to encourage investment, not just for the sake of investment but for the sake of the services that will deliver to consumers in terms of 4G mobile services.

In line with our wider duties, we also have an interest in ensuring that these next generation mobile services are available to as many consumers as possible across the whole of the UK, so that there is wide availability of these services across the UK.

As I said, we have done our initial analysis of all these issues and we have set out in our consultation our proposals, a whole range of measures designed to achieve those objectives.

**Proposed rules in more detail**

As far as the auction rules, what are we proposing? These are predominantly aimed at promoting competition and fostering new entry. The first element of our proposals is what we call spectrum floors: some rules designed to ensure that at least four parties come out of the auction holding sufficient spectrum to be credible national wholesale operators. Today, we have four national wholesale operators: O2, Vodafone, Everything Everywhere and Hutchison. We believe, having looked at the evidence from both the UK market and other European and global markets, that consumers will get a better deal in the UK in future if there are at least four national wholesale operators. We would be quite happy for there to be more; we would be unhappy if there were fewer.

Just to be clear, we are not guaranteeing that those four will be the existing four. What we want to see are four national wholesale operators but we would be just as happy for one of those four to be a new entrant as for them to be the four existing operators.

Secondly, we are proposing some, what we call, safeguard caps. These are not designed to ensure that everybody gets an equal share of the spectrum. They are designed to ensure that we do not get a highly asymmetric outcome in which one operator holds the vast majority of the spectrum and everybody else is left with the crumbs from the table.

The key measure by which we are looking to promote entry into this market is by making spectrum available for what we call sub-national operators. We have examples of these in the market already today, the best of which is probably Cable & Wireless Worldwide, who are one of the licensees of a tiny sliver of spectrum called the DECT guard bands, which we auctioned a few years ago, in 2005 I believe. They use that service to provide a local mobile service inside buildings and in campus environments. The best known example is they have a contract with Tesco and provide a mobile service to Tesco employees inside all Tesco buildings, whether they be supermarkets, distribution depots or
offices. When those customers are inside those buildings, they are using the Cable & Wireless Worldwide network. When they move outside those buildings, they roam onto one of the national networks, I do not know which one it is, and continue their mobile service through that route.

We are keen to create the opportunity for organisations like Cable & Wireless Worldwide to expand that sort of offering from voice, which is all they can offer today, into mobile broadband services. Therefore, we are looking at how we might ensure that through some rules relating to the use of the 2.6 GHz band.

In a little more detail, without going into the gory detail that is in the 500-page consultation document, so far as this guarantee of a minimum amount of spectrum for four operators is concerned – the spectrum floors as I described it – we have done some quite sophisticated technical analysis looking at how much spectrum we believe an operator needs in order to compete in the future market for mobile broadband services, next generation mobile broadband services. The conclusion of that analysis is, first, that such an operator needs to hold some amount of low frequency spectrum, 800 MHz or 900 MHz spectrum. If they have a reasonably large amount of that low frequency spectrum, they can probably survive without anything else. In particular, if they have 15 MHz paired of 800 or 900 MHz spectrum, they do not need any other spectrum. They would be able to offer a competitive next generation mobile broadband service just using that 15 MHz of sub-1 GHz spectrum.

Just to be clear, they may like some more and there is nothing precluding them from acquiring more through the auction. That is just what we think the minimum is that they would need to be competitive, if all they had was sub-1 GHz spectrum.

However, you do not need to have all your spectrum in that low frequency band, and our technical analysis indicates that you can combine a smaller amount of low frequency spectrum with some higher frequency spectrum and still deliver a competitive next generation mobile broadband service. At its most extreme, an operator who had only 5 MHz paired of sub-1 GHz spectrum would still be able to offer a competitive next generation mobile broadband service, provided they had in addition to that 5 MHz paired 20 MHz paired of 2.6 GHz spectrum, or the 15 MHz paired of 1800 MHz spectrum that Everything Everywhere is required to divest. There are obviously some intermediate scenarios as well.

Therefore, to be clear, there are a range of different portfolios of spectrum that an operator needs in order to be capable of offering a competitive next generation mobile broadband service. We propose to guarantee that at least four operators come out of the auction holding at least that much spectrum.
Proposed rules in more detail

As I said, we are also proposing a couple of spectrum caps but these are only safeguard caps. The first is a cap on the amount of this low frequency spectrum that an operator can hold, and we have suggested that be 27.5 MHz paired. Just to put that into context, Vodafone and O2 each currently hold 17.5 MHz of this spectrum, so, if this cap were to be put into practice, they would be able to bid for an additional 10 MHz of the 800 MHz spectrum in addition to their 900 holdings.

Any other operator would be limited to a maximum of 27.5 MHz of the 800 MHz. In practice, that would turn into 25 MHz because of the way in which we propose to award the spectrum.

We are also proposing an overall spectrum cap of 105 MHz paired. Again, to put this into context, the existing mobile operator with the largest amount of spectrum in total is Everything Everywhere. An overall cap of 105 MHz would allow them to acquire 40 MHz paired in addition to their existing holdings, so quite a lot of additional spectrum. Just to repeat, these are only intended to be safeguards, they are intended to prevent highly asymmetric outcomes in which one operator acquires a very large portfolio of spectrum and everybody else is left with just the dregs. It is not designed to ensure that everybody gets an equal share of the spectrum; we want to see competition for the capacity in this auction.

Finally, the measures to promote or assist new entry. We propose that, regarding the bidding for 10 MHz paired of the 2.6 GHz band, there be rules that would allow up to 10 licensees to use that spectrum on a shared low power basis. This would be very comparable to the DECT guard band arrangement we already have in place, the one that Cable & Wireless Worldwide uses that I mentioned earlier. In this case, there would be up to 10 licensees, each of which could use the whole of the 10 MHz paired spectrum, and they would have to coordinate among themselves as to who was using it where. The feature of using it on this low powered basis is that, if one operator had a femtocell inside this building in order to provide next generation mobile broadband services in this building, another operator could use the same frequencies and the same technology in the building next-door, in the building that way, in the FT building across the road. Therefore, each operator is able to reuse the same frequencies provided that each of them uses it on a low power basis and, in particular, uses it indoors. It may also be possible to use these frequencies outdoors, for example in a campus-type environment whether that is a university campus, a business park or whatever, but there will need to be more careful co-ordination in those sort of outdoor environments.
We propose to include rules in the auction that would allow these 10 bidders to bid collectively to acquire this spectrum in preference to it being sold to a single high power bidder. We are consulting on the possibility of reserving this spectrum exclusively for this shared low power use and not allowing it to be used for a high power purpose. However, we believe that we need better evidence from stakeholders as to what the benefits would be of that reservation before we make that decision. Those are our competition proposals.

Ensuring widely available mobile broadband

As I mentioned, we also have to look at our other duties, in particular our duty towards citizens and ensuring the wide availability of services. In this regard, we propose a coverage obligation on just one of the 800 MHz licensees, which would be to provide a next generation mobile broadband service offering a 2Mbit/s downlink capacity to indoor locations, covering 95% of the UK population, and for that service to be delivered by the end of 2017. This spectrum will not become available until the end of 2012 at the earliest, so 2017 is about five years after the spectrum becomes available, which we believe is a reasonable period of time in which an operator would be able to roll out a service covering 95% of the UK population.

To put the 95% into perspective, that is approaching today’s 2G coverage. Today’s 2G coverage is about 97-98%, so 95% would be approaching today’s 2G coverage. One of the reasons why we focused on that figure is because our analysis suggests that the existing mobile operators – any one of the four – would be able to deliver that level of coverage using just their existing base station sites. It would not be necessary for them to go out and build a large number of additional base station sites in order to meet that coverage target.

It would be very challenging for a new entrant to meet that coverage target but that is one reason why we are only proposing to impose this obligation on one licensee. Any new entrant can avoid this obligation by bidding for the frequencies in the 800 MHz band to which the obligation does not attach.

One concern that has been expressed is that an operator could meet this 95% population coverage obligation and still not provide service to large areas of the UK. By way of example, the population of Northern Ireland is less than 5% of the UK population, so in theory an operator can meet this obligation and provide no service in Northern Ireland. That is not what we are aiming for and we believe it is unlikely to happen, because if you wanted to do that, you would have to achieve 99% or 100% population coverage in the rest of the UK, which would be very challenging. Nevertheless, in order to avoid the risk that there could be some highly asymmetric availability of this service across the UK, we are consulting pretty openly with stakeholders about how we could add to this UK-wide coverage obligation.
an obligation that focuses on specific areas of the UK, most likely rural areas, and required the operator to provide a certain minimum level of coverage in all rural areas to be defined.

Just to be clear, the objective there is not significantly to increase the UK population coverage. It would not be to increase the 95%, it would just be to make sure that 95% was achieved pretty uniformly across the whole of the UK and was not just targeted on particular areas.

**Future annual licence fees**

One other aspect of the direction on which we are consulting concerns future annual licence fees for the 900 MHz and 1800 MHz bands. Now we are not awarding these through the auction but the Government in its direction to us told us to revise those annual licence fees following the auction, and they told us to set them at a level that reflects full market value and, furthermore, in doing so to have particular regard for the amounts bid in this auction. Given those obligations on us by the Government, we thought it was important to give potential bidders in this auction as much information as we could about how we would interpret that requirement when it comes to the setting of licence fees for the 900 MHz and 1800 MHz spectrum. We have set out in the consultation how we propose to do that.

There are three key steps. The first is to look at the auction itself and decide whether it was competitive and whether, therefore, the bids made in the auction give us a true indication of the full market value of the spectrum. If it does not, then we shall have to use some other benchmark to set full market value prices. Assuming that it is a competitive auction, and I have no expectation that it will not be a competitive auction, we shall have to look at the bids made in the auction and derive from them estimates of the full market value of 900 MHz and 1800 MHz spectrum.

In the case of the 900 MHz spectrum, that is relatively straightforward. As I have already indicated, the 800 MHz spectrum and the 900 MHz spectrum are very close in frequency, they are very close in the amount of spectrum that is available, so we can almost do a direct read across from the 800 MHz to the 900 MHz, which is what we propose to do.

In the case of the 1800 MHz spectrum, it is a little more complicated, because we may not have any 1800 MHz spectrum auctioned. We may only have 800 MHz and 2.6 GHz, in which case we shall somehow have to estimate what the market value of 1800 MHz is on the basis of the prices we see for 800 (MHz) and 2.6 (GHz). We have suggested the simple expedient of taking the average of those two to derive a price for 1800 MHz, and we shall see what sort of response we get back from stakeholders on that issue.
Finally, the bids in the auction will be lump sums for a 20-year minimum term and the indefinite use thereafter. We need to convert those into annual licence fees, which we shall do through the standard annuity process with a cost of capital calculation in order to convert those into annual licence fees.

To be clear, we are consulting here on the proposed method we shall use. We shall not consult on the final numbers until after the auction, so it will not be until the second quarter of next year, potentially the second half of next year, that we shall consult on the numbers that will apply to the 900 MHz and the 1800 MHz licences thereafter.

Next steps

To summarise timescales, the consultation closes on 31 May. I anticipate getting voluminous responses from a whole range of stakeholders, which we shall have to look at very carefully. We then aim to make our decisions and publish our statement in the autumn. Once we have done that, we then have to go through the legal process of making the auction regulations, which will take us a few months. We hope to be able to make those around the turn of the year. That will then allow us to invite applications to take part in the auction and the plan is for that to happen in the first quarter of next year. The auction will start shortly thereafter. I do not know exactly how long the auction will run for, it will be an open multi-round process, so it may well run for a number of weeks. However, we expect that auction will end in the second quarter of next year, and we shall issue the licences immediately thereafter.

As far as service roll-out, as I have already indicated we expect the network operators to start rolling out their networks from around the beginning of 2013 and we would hope to see services start to become available in certain areas of the country later on in that year. We would expect to see the services be available widely across the UK a few years thereafter.

Are there any questions? I am sure there will be many.

Question & Answer Session

Andrew Entwistle (New Street Research): You are consulting on the idea of setting a reservation price for each band that will be at or close to your assessment of fair market value, I guess in order to stop a new entrant or Hutchison walking away with very cheap bands because that is just the way the minimum portfolios have been defined. Isn’t there a risk that you may not end up with four operators with a minimum portfolio if one of
those operators is not prepared to pay your reservation price? Therefore, isn’t that
reservation price-setting going to be very complex?

If I could add a follow-up question as well. There seems to be quite a lot of
uncertainty around in Europe about the future of the 600 MHz band. I wonder whether you
can give an Ofcom perspective on what might be happening with 600 MHz going forward?

Graham Louth: On reserve prices, yes, you are right. We propose two
levels of reserve price. One is in respect of the generality of spectrum: the proposal is it
would be sufficiently high to cover the cost of clearance. We have also put forward this
proposition in order to mitigate against an operator or a party who values the spectrum far
below its true value acquiring the spectrum through accident, through the reservation
mechanism of having a reserve price for the reserve spectrum that would approach, though
not be equal to, an estimate of the market value. Yes, there is a risk that, if we set that too
high, we shall not get takers for that spectrum, and part of this process is to engage with
stakeholders and judge to what extent they are or are not willing to pay those sort of prices.
I would hope that we get competition for that reserve spectrum and then the reserve price
becomes irrelevant, but there is a risk that the competition will not materialise.

It is not a particularly complicated process but it is a challenging one of having to
balance, on the one hand, a desire to ensure that we do not end up with an inefficient
outcome as a result of somebody acquiring the spectrum who will not make very good use of
it, versus setting it too high and discouraging the efficient users from acquiring it. So it is
work in progress as far as exactly where we set that level. We felt it was important to give
an indication in the consultation document but that is by no means a firm number: it may go
up or down quite a long way from that level.

Regarding 600 MHz, the first point to make is that this is an exclusively UK band. I
am not aware of anybody else in Europe or the rest of the world that is looking to award the
equivalent of the 600 MHz band. The discussion is predominantly around the 700 MHz band
and whether Europe ought to do something like release the equivalent of the US 700 MHz
band or the Asian 700 MHz band. We are looking carefully at whether or not we should be
doing something in respect of the 700 MHz band, although the timescales for that are likely
to be quite extended. We have only just moved digital TV into the 700 MHz band, I cannot
see anybody being terribly keen on us immediately starting a process of vacating the 700
MHz band. However, we are looking at it and we are considering whether the award of the
600 MHz band needs to be adjusted in any way to reflect that fact, but we shall come
forward with proposals on the 600 MHz band in due course.
**Tim Boddy (Goldman Sachs):** I am interested in your comment about the four operators being the minimum that you view as comfortable. In the US there is an example where the operators are looking to consolidate and are arguing that is the best way to provide the best type of rural coverage. What is different about the UK from the US? You are not a US regulator but I am trying to understand your thinking process as to why you believe that argument does not hold water for the UK?

**Graham Louth:** We draw a very clear distinction in our consultation between competition at the wholesale level and competition at the network level. What we are talking about here with at least four is at the wholesale level, not at the network level. We already have, or will have within a year or so, only three networks, because Everything Everywhere and Hutchison share a single network. We also have the Vodafone/O2 network sharing deal called Cornerstone. We draw that distinction precisely because we see that there may well be merit in a smaller number of networks operating in order to ensure that consumers in rural areas get the best possible services, and even consumers in urban areas get the best possible services as a result of both sharing the costs of building those networks, but also sharing the spectrum.

I gave you some examples of minimum spectrum portfolios. Those are the minimum you need and, ideally, you would have more than that if you want to offer the best possible services to consumers. One way of achieving those higher spectrum portfolios is by sharing spectrum as well as sharing network, and we are very open to proposals from mobile operators about sharing networks and sharing spectrum. However, in the same way as we looked at the original T-Mobile and Hutchison sharing deal and the merger of T-Mobile and Orange, we need to ensure that those deals do not give rise to a lessening of competition in the downstream wholesale market. Therefore, we are keen to maintain competition in the wholesale market. We shall look very carefully at any proposals for consolidation in the network market but we are not completely ruling it out.

**Tim Boddy (Goldman Sachs):** Just to finish that, it sounds as though if there were a move to consolidate the market further at that retail level, you would look to impose a wholesale price regime onto the existing operators to ensure the availability of wholesale access?

**Graham Louth:** If there was consolidation at the wholesale level from the four down to a smaller number, we would have to look at it on its merits at the time. However, wholesale access is one possible remedy. The trouble is that it is a behavioural remedy rather than a structural remedy, and we prefer structural remedies if we can make them work.
Steve Malcolm (Evolution): Just a couple of questions on the 900 and the 1800 market value uplift. I think the 900 is based on three specific lots of the 800 that are being licensed. Can you give us an idea of the science between the three lots, does that not include the one with the licence obligation in terms of roll-out? Secondly, was there a deliberate attempt to disadvantage O2 and Vodafone, because it seems that they have a clear disincentive not to bid up the price of 800 because they will be more directly impacted on the re-pricing of 900, whereas Everything Everywhere as a blend of the 800 and the 2.6 will have less impact when its existing licences are re-priced? Thank you.

Graham Louth: Of the 800 spectrum, we propose currently to look at four out of the six lots. The two we propose not to include are the bottom two which, potentially, will have to have restrictions imposed on them in order to mitigate interference into the adjacent DTT and channel 60. That is an open decision as yet because we do not know what restrictions we shall have to impose on the bottom two lots. If they turn out not to be particularly onerous, we shall probably include all the 800 MHz in the valuation. However, if they are restrictive such that the value of those lots is materially lower, we shall exclude those and just look at the top four.

We propose to include within the valuation the lot with the coverage obligation, because, as I indicated in passing, we do not believe the coverage obligation is particularly expensive for any of the existing operators to meet. It is something they could do using their existing base station sites, albeit they would have to upgrade all of those sites or a large percentage of those sites to offer LTE, but we do not see that as being a massively expensive operation. Therefore, we propose to include those four but not the two that might be restricted as a result of DCT protection.

There is no intention here to disadvantage O2 or Vodafone, or to promote EE, Hutchison or any specific individual player in this. We have a very clear direction from the Government, which is that the 900 price and the 1800 price in the future should reflect “full market value” and we should have particular regard for the bids made in the auction. We have set out what we believe to be the right way of doing it. We recognise that potentially puts incentives on O2, Vodafone and EE as to how they bid in the auction. Those are not necessarily entirely desirable but neither are they are entirely problematic. As I indicated, if the auction is not competitive and, to take an extreme example, if Vodafone and O2 chose not to take part in the bidding for the 800, we might conclude that the 800 price was not a reflection of full market value, and we might use some other benchmark such as Germany, Sweden, other auctions that have happened subsequently. Therefore, Vodafone and O2
cannot rely on their bidding in the auction determining what the price is that they have to pay for their 900 and 1800 spectrum going forward.

**Maurice Patrick (Barclays Capital):** You talk about the significant of the lower frequency 800 MHz and the interest from various stakeholders, new and existing. Why didn’t you re-auction the 900 MHz, thereby giving more new entrants scope to enter?

**Graham Louth:** Sorry, more than the four?

**Maurice Patrick (Barclays Capital):** Why didn’t you re-auction the 900 MHz? You talk about the inequality and trying to rectify that, but there is a choice to re-auction it, what is the decision-making process behind that?

**Graham Louth:** I do not believe I talked about rectifying any inequality. I just noted that there is asymmetry between the holdings of the existing operators. The Government made the decision to allow the “refarming”, to use the colloquial term, the liberalisation of the 900 MHz spectrum for UMTS without requiring Vodafone and O2 to return any of the spectrum. Our advice was that was a safe thing to do, because the 800 MHz spectrum is available. There is enough 800 MHz spectrum for at least two and potentially more operators also to acquire sub-1 GHz spectrum, so we do not believe we are in any way precluding entry through the acquisition of 800 MHz spectrum.

**Matthew Howett (Ovum):** On the licence fees that apply to the 900 and 1800, will they be changed retrospectively to account for the full market value giving that the refarming decision has happened now, whereas the auction happens later?

**Graham Louth:** We have no power to set fees retrospectively, so they will only be going forward.

**Tim Boddy (Goldman Sachs):** In terms of the different floors, they kind of imply a difference in price of the value of 800 MHz and 2.6 GHz spectrum, which is a two to three times difference, whereas the auctions that have taken place in Germany, where 2.6 GHz was auctioned at the same time as 800 MHz, imply a much wider price differential, a much wider value differential between them. Are you confident that those different packages are equivalent? It strikes me that the 2x15 MHz 800 lot is by far the most valuable of those?

**Graham Louth:** We are not attempting to equalise value here. We are attempting to equalise capability and there are differences in the capability across those
portfolios. However, on the key metrics that would allow an operator to compete, we believe they all allow an operator to compete. Some of them might allow an operator to compete more aggressively than others, that is absolutely true. If the operators prefer one of those portfolios, they can bid to win one of those as against another one, but the proposals at present are that they have to accept that they win whichever of those works out to be the right answer at the end of the auction, rather than getting to choose which of those they have.

As I said, we are not trying to equalise the value of them, so the values may well be different between the different portfolios. The only other thing I would say is that I would not necessarily look at the prices achieved in the German auction and believe that they are a good reflection of full market value for each individual band. The way that auction worked, there was a lot of competition for the 800 MHz band. In practice, however, there was very little competition for the higher frequency, so it is not immediately clear that those are true market values for the higher frequencies.

**Tim Boddy (Goldman Sachs):** Can I have a quick follow-up? You said it was important to notice the difference between competition at the wholesale and the network level, I rather thought that was the same thing. What is the difference between competition at the wholesale and the network level?

**Graham Louth:** The simple example is the MBNL network, which is jointly owned by Everything Everywhere and Hutchison. That is a single network and, to the extent it competes, it competes with the O2 and the Vodafone network. Hutchison and EE are separate wholesale competitors in the wholesale market, that is the distinction we are drawing if you like.

**Tim Boddy (Goldman Sachs):** If you share the spectrum, then surely it is the same, there is no competition at the wholesale level?

**Graham Louth:** No, it is not because, even if you share spectrum, the characteristics of the service you offer are controlled by more than just your sites, your equipment and your spectrum. It is also controlled by the rules that you set inside the network to control which customers get access to what bandwidth in which locations and so on. Therefore, even if you share network and spectrum with modern technologies, LTE in particular, there is a lot of opportunity for competing wholesale operators sharing the same network and the same spectrum to differentiate their offerings based on the parameters that they set for the way the spectrum is used.
Steve Malcolm (Evolution): I want to come back to Tim’s question on the four operators. You are reliant on an operator that has lost an enormous sum of money, you removed asymmetry, you want to set a reserve price that stops them getting the spectrum for free. How confident are you that any operator is prepared to carry on making nothing from the position of being fourth to meet your requirement of four operators in the market, because that is the reality?

Graham Louth: My understanding is that operator is now making money and has a very upbeat CEO who believes that they will make a lot more money in the future. My understanding is that operator is extremely interested in acquiring spectrum, so I have a lot of confidence, at the moment at any rate, that we shall have at least a fourth player bidding and potentially more.

COST OF CAPITAL OVERVIEW
Craig Lonie
Director of Competition Finance

I am glad that finally one of my Ofcom colleagues has managed the mastery of PowerPoint, I hope to follow Graham rather than my fellows from the Competition Group! I am Director of Competition Finance, you may remember me from previous appearances in the nerdy spot at analysts briefings in years gone by. I shall try to make this interesting but an important part of what Ofcom does is about protecting viewers from inappropriate broadcast content, so my Content and Standards colleagues asked me, before I start today, to read the following statement:

“The presentation you are about to see has been edited for pre-watershed viewing but still contains scenes that some viewers might consider unusually dull. It may cause drowsiness.”

Cost of capital summary

Joking aside, I shall explain a little about what we have done to estimate the cost of capital in reaching the decisions and proposals that my colleagues have talked to you about today. Given its significance and overarching nature in the work we do, we felt that it merited a dedicated slot but it will be short.

If you manage to stay away, what I shall do is this. I shall help you understand how the cost of capital affects the proposals and decisions that we make. You will understand how we estimate the cost of capital and why we use the method that we do. You will have seen why our estimates of the cost of capital have gone down, and what that means for our decisions and proposals.
First, let me try to explain that by reference to a characterisation of the two types of decision that we have talked to you about today, although these are not the only things that Ofcom does where cost of capital features.

**Effects of cost of capital**

On the left-hand side, you can see a simple schematic of a price control like the ones that Andrea and Stuart talked to you about. The X axis is time and on the left-hand side we start in a world where today’s price is what we see. We design charge controls that take those prices so that, by the end of a price control period, they align with what we expect the cost to be at the end of that period, usually those price controls will be an RPI minus X glide-path type format.

How does the cost of capital feature in there? In these telecoms network businesses that we regulate, both fixed and mobile, very roughly a third of the costs that we predict and that we observe today are the direct result of multiplying the cost of capital that estimate by the assets that are employed in running these businesses. This results in a world that we have observed typically for the past few years where we have estimated the cost of capital for BT, for example, to be about 10. In that world, you can see very simply that a 1% shift in the cost of capital will shift our predicted unit costs by 3% or 4%, so it might increase the X in an RPI minus X charge control by 1. That is the kind of scale that we have.

In the context of spectrum licence fees, the cost of capital is an even more significant determinant of the scale but, interestingly, it works in the opposite direction. What we do in spectrum is make an assessment of a relevant lump sum that would apply to the valuation of a block of spectrum. We then convert that lump sum into an annuity that will be paid for the term for which the licence is granted and that annuity, when combined with the discount rate or the cost of capital we used, produces a present value that equates to the lump sum. It is as simple as that.

Again, broadly speaking, when we are using a 10% cost of capital, I am talking about pre-tax nominal here – all of the numbers I talk about in the presentation will be pre-tax nominal – a movement of 1% around a base of about 10% cost of capital would move these annual spectrum licence fees by something of the order of 6%, so more significantly than in a price control. So that is kind of it and it is pretty simply when presented that way.

**What is our approach to cost of capital?**

How do we estimate it? Life gets a little more complicated and most of you will be familiar with how the cost of capital is estimated. How do we do it? It is pretty simple. We adopt a method that we have adopted for a number of years, that is we use the capital asset
pricing model to estimate the cost of equity. We combine that with the observed cost of debt that we can see in the market, using a formula that is the weighted average cost of capital formula. The maths are pretty straightforward but some of the parameter estimation is a little more tricky, but that is the method we have used for several years now, having considered along the way alternatives and rejected these as less effective than the CAPM. We are aligned with all the other UK regulators in using the CAPM/WACC framework and, perhaps more importantly, the framework that we adopt has been tested in several instances in recent years at the Competition Commission, who have underpinned the approach we have taken.

**WACC parameters are falling**

The formulae here draw from a number of inputs, some of which are generic to the market, and some of which are specific to the companies that we regulate but they have all kind of headed south over the last couple of years. Certainly, from the perspective of our stakeholders, things have gone down. I don’t want to go into these graphs in any detail because I cannot read them from here! There are several which, while tricky to read, will give you an idea of the overall slope. If things go down towards the right-hand side, that means the influence on the cost of capital is downward and takes the number to a lower point.

At the general market level, there are two big things happening that you will be very aware of. The first is that interest rates are low, they went down and have stayed down and we cannot ignore that. There are effects in there like quantitative easing but these do not explain the overall movement in the risk-free rate that we have seen. This has a direct effect and flows through to every element of the cost of capital.

Secondly, corporate tax rates are going down and have gone down, which means that, in order to deliver the same pre-tax returns, companies do not need to earn as much post-tax.

The other thing that is perhaps slightly harder to interpret but on which we believe the evidence remains compelling is in relation to the risks of the companies that we regulate. I have down data for BT and Vodafone on the picture here both in terms of their debt spreads and of the asset beaters that can be derived from equity price movements in the markets. Both show a marked decline in mobile in particular over a very long period of time. Now mobile and fixed appear to be perceived to be of similar risk in the capital markets.
Our latest estimates are lower

What does that mean in terms of cost of capital? Where does it take our numbers? It takes the numbers down in headline terms by around 1.5% since we last looked at this. To characterise the number that is perhaps most relevant to BT charge controls, the Openreach number that we previously estimated around two to two and a half years ago at just over 10%, and I use Openreach as shorthand, by the way what we are talking about in relation to this cost of capital is the number that we would use to set prices for copper-based access services, so we are not talking about fibre here – at just over 10%. The Competition Commission agreed with our assessment of just over 10% but, looking at the number now, it is clear to us that our estimate of that number has fallen to just above 8.5%, which is the number that features at the centre point of the proposed controls that Stuart outlined.

Similarly, we consulted over a year ago on a cost of capital with a mid point in our range of just over 10% for mobile and we are coming out shy of 9% in the decision that Andrea talked about. What does that mean? To use the earlier rules of thumb that I talked about, a 1% shift in the cost of capital would move prices by perhaps 3% or 4%. A 1.5% shift would, therefore, convert to a movement of 4.5-6%, which is the effect that is baked into the proposed LLU charges. If you look at the mid point of our controls, the prices that we propose for an LLU line will be around £5 lower than they would have been had we not changed our cost of capital assessment. You can do the maths on mobile termination charges and spectrum licence fees for homework. That is where we come out and you should now understand how it fits in and how the cost of capital drives what we do. You should understand how we estimate it and why we do it the way we do, and you will grasped from the graphs, even if you could not read them, the general idea of why we believe the cost of capital, as we estimate it, has gone down and be able to translate that into what it means for prices. We believe that what we have done is robust and would certainly stand up to appeal, and is absolutely supported by the evidence that is undeniably in front of us at the present time.

Approach ensures fair returns

All I would add to that is, because we intend to continue to adopt the approach that we have adopted for around a decade now and would absolutely intend to adopt in the future, if the evidence in front of us changes, because we review the cost of capital on a relatively frequent periodic basis, perhaps every two or three years as you will have seen over the past decade, if the data move they will relatively quickly assimilate themselves into revised assessments and, in due course, into revised price controls. That is what I wanted
to say and I hope it was the simplest explanation that you have heard from Ofcom on cost of capital. If anyone has any questions, I would be happy to take those now.

**Question & Answer Session**

**Christopher Nicholson (Oraca):** Can I just be clear that, if you reassess the cost of capital based on market conditions and let us say, for the sake of argument, in 24 months interest rates spike up, and market conditions change with respect to beta etc, will the framework change the licence costs immediately?

**Craig Lonie:** As far as our reassessing the cost of capital in and of itself does not change any of our SMP conditions and any of the framework of decisions that we have made. However, at any point when we make a big decision, we have the ability to assimilate the cost of capital as we see it at that point and, if that kind of circumstance prevailed, it is very likely that we would recognise that.

**Guy Peddy (Macquarie):** Just a big picture thought here. Isn't reassessing cost of capital every two to three years too short a period for a business where you are looking to invest in multi-year periods? Therefore, do you not risk changing the ball-park too regularly if you keep looking at it that frequently? Given that we have recent changes in a lot of things over the past two years, why do we suddenly take the view that what has happened over the past two years is representative of what might happen over the next 10 years, for example?

**Craig Lonie:** That is a good question, we go into this in some detail and have done on several occasions in the past when looking at cost of capital. The cost of capital that we set is really designed to provide a fair rate of return over the duration of a price control period, so most of the duration considerations would reflect that. For example, we would take a gilt rate or a risk-free rate that is typically looking to take a time horizon that aligns broadly with the price controls that we set. You are right that investments in the industry are taken with a much longer time horizon. The question to me, therefore, is does our framework allow for a fair rate of return to prevail over time? Because we reassess it on a consistent basis, adopting that consistent method over time, that we consider meets the criteria that you have described.

**Stuart McIntosh:** [speaking off microphone] ... what has happened to companies where you have regulated the charges over time, you would typically find that the
returns they have earned have been at least the cost of capital with the benefit of hindsight. The regulations have not been such that they would have undermined investment decisions made previously.

**Question:** Do you expect to use a similar auction structure to the 3G auctions, or do you consider that has proved to be less than effective?

**Graham Louth:** Could you repeat the question?

**Question:** Is the auction structure expected to be similar to that of the 3G auctions, or do you now consider 3G auctions to have been counterproductive?

**Graham Louth:** To answer the first question, the structure is quite radically different, so the 3G auction awarded five specific licences and each bidder was bidding for one of the five licences. It was very clear that it was a licence to provide 3G services, it had a 3G rollout obligation attached to it. What we are doing is awarding licences to use frequencies, we are not being specific, other than the one licence that has the coverage obligation on it, as to the service that has to be provided, the technology that has to be used. The frequencies are being awarded in a fashion which allows the bidders to bid on different quantities of spectrum and combine different frequencies in different bands. So it is a radically different approach to awarding spectrum. The 3G auction appears to have been hugely successful in the sense that it delivered 3G services to UK consumers, it delivered a fifth player into the market, albeit we have now consolidated down to four again, so in that sense it was extremely positive.

**Ed Richards:** With that useful move from cost of capital to auction structure, we shall see if there are any other general questions we have not covered in what people have asked already.

**Ian Watt (Enders Analysis):** I would like to take the opportunity of asking whether now is perhaps a good time for people to comment on the physical infrastructure access issue following the announcement last week by Fujitsu in terms of what timescale going forward you envisage for the review of BT’s reference offer for physical infrastructure access?

**Ed Richards:** Stuart addressed this earlier. What we understand at the moment is that there are real discussions taking place. There is a commercial negotiation around the reference offer and that goes on until the middle of June, and we shall see where we are at that point in time. We hope that these kind of discussions deliver a successful
outcome, and that is the process which we recognise and agreed up front and that is what is happening at the moment. We shall keep very close to that, we understand what is going on and we shall take a judgment after that when we see what position we are in.

Will Draper (Espirito Santo): This is a good final question for you, Ed. Let me just ask you where the regulatory bus is heading in the UK? You have spoken a lot about the key issues of today but what concerns you for the future, what areas that we have not discussed today do you think need to be addressed by Ofcom in the future?

Ed Richards: That is an interesting and very open question – how long do you have? We have discussed some very important issues today. There are plenty of other things we are working on at the moment that are also extremely important, one or two of which you will all be aware which are quite high profile. From our perspective, we have covered two or three of the biggest issues that are in our horizons at the moment. The release of spectrum, the 800 MHz/2.6 GHz, but also the longer term questions are central to what we are trying to do.

I want to underline to you that there is a whole additional side of our work in that area, which Graham touched upon but did not have time to go into in more detail, which is the clearance of the spectrum, which is a massive task for us. People tend to concentrate on just the auction, how will it work, what will the floors be but before we get there, we have to make sure that clearance has taken place which is a huge task for us. Therefore, clearance and release of spectrum is a very important issue.

The overall picture for next generation access is a very important issue. We have touched upon some of that today. We have touched upon not only the cost of capital type issues, WLR and LLU issues, which have a relationship to the roll-out of next generation access, another huge question for us.

We are also concentrating on making sure that we defend our decisions in relation to pay television, which is another important and significant area for us. Something that is probably of less interest to you but I include it for the sake of completeness, we are also doing a lot of thinking about the development of content regulation in a converged digital IP world, which is another part of what we do.

One final comment is that, as some of you may know and others may not know, we also expect to take on regulation of postal services from around July 2011 which will have into view as a new responsibility which we shall meet during the course of the ensuing six to 12 months. Those are probably some of the highlights.
As far as what we are trying to do with all of that, I do not believe there is any fundamental change. We are trying to identify and then secure the best interests of UK consumers and citizens, which is why, for example, we might take a different view on the number of operators we would like to see in the mobile market than some other commentators might take. As Graham alluded to, when we look at the evidence around the world in that kind of area, it is pretty clear that the UK consumer and citizen have benefited by having more competition than is present in some other markets, so that is an important feature of that.

What are the benefits for consumers and citizens in relation to these key issues? At the heart of that will be promoting competition on a range of fronts some of which I have mentioned, but also making sure we look after some of the citizen benefits such as widespread availability of next generation technologies. That is at the heart of what we are trying to do.

Wherever we can, we shall simplify, reduce and, where possible, eliminate regulation. We have a good record on that and we try to keep that at the forefront of our mind as well. However, where we need to intervene, we will intervene.

Steve Malcolm (Evolution): One of the reasons why we are all here is to do with the market assessment of risk, which you confidently said has gone down a lot in the last two or three years, Ed. How comfortable are you with that? From many of the comments you make, it strikes me that there are a lot of risks out there, there is next generation network overbuild, there is 4G, there is DSO that we have not really talked about today. Are you comfortable that the market has got it right, that we are at a particularly low risk point?

Ed Richards: That is an interesting question. The beauty of asking me whether the market has got it right is, of course, that the market decides, so it is an observation to us. The data that Craig put up are not our data, they are derived from analysis in the market, so we do not make that observation but let me address your central question which is what is happening.

We are going through a series of changes which many people have talked about, including many of you, and commented on for some time, and with which we have been engaged for many years. Some of those things people often say are forecast to be apocalyptic, then they do not quite happen but, in the long term, they tend to be quite fundamental. With the general switch from analogue to digital, that has been the case. The much vaunted and talked about process of convergence on a range of different fronts is
finally taking place. With fixed mobile convergence, we can see some very interesting technological developments around there in different forms with different manifestations. The changes in relation to spectrum as a key input and a key part of this story are absolutely fundamental. Regarding the clearance and release of the spectrum, our next phase of work will be hugely important to that, though it is difficult to predict exactly what that will mean ahead of the outcome. Therefore, all of these things inevitably present a lot of challenges not only to ourselves but to all the companies.

Whenever there is change of that kind - technological, market, regulatory - it presents as many opportunities as it does threats, and we shall see over the next few years who capitalises on that best. We are in the position of trying to make good decisions about what our responsibilities are and companies will make judgments about how they are best placed to respond to those changes. In relation to the actual outcomes, we are interested in effective competition, good outcomes for consumers, good outcomes for citizens but, in terms of individual companies, that is in their hands.

Christopher Nicholson (Oraca): In the name of your mandate for more effective competition, will you be searching for further statutory powers to impose your will upon those players who might have an interest in not being quite so competitive as you would like them to be?

Ed Richards: Goodness me! There are one or two areas where we shall probably have a look at the existing framework in line with the development of the Communications Bill but, broadly speaking, we have the powers that we need. There are probably one or two areas we shall look at but we shall do that in a calm way over the course of the next two years. We are not sitting here at the moment feeling frustrated that there is a whole host of areas to which we simply cannot get. There is a pretty well-established framework which we understand well, especially in telecoms. In broadcasting it is slightly different but we understand it well, we have been able to use it, so there is no dramatic issue to which we are going to demand any particular change on that front but we shall keep an eye on it and see how markets develop. It is possible that, because of technological and consumer change in the marketplace, the framework may need to adapt, and we shall keep a careful eye on that.

The area of powers is probably more of an issue as far as significant change. One is post but that is relatively straightforward in the sense that it is just a transfer of powers to us. The area that is slightly more complex is what you might call the internet type issues, so, for example, around illegal downloading we have a new power which we have yet to exercise in
relation to enforcing a code to restrict and reduce illegal downloading. There are some interesting issues in that area which we shall certainly look at very carefully over the next couple of years to make sure that we can be effective in the core duties that we have. I think we are out of time now, so thank you all very much for coming.

- **Ends** -