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IN THE COMPETITION
APPEAL TRIBUNAL

Case Nos. 1245/3/3/16

Victoria House,
Bloomsbury Place,
London WC1A 2EB

24 May 2016

Before:

HERIOT CURRIE QC
(Chairman)
PROFESSOR GAVIN REID
BRIAN LANDERS

(Sitting as a Tribunal in England and Wales)

BETWEEN:

BRITISH TELECOMMUNICATIONS PLC

Applicant

- and -

OFFICE OF COMMUNICATIONS

Respondent

- and -

GAMMA TELECOM HOLDINGS LIMITED
CP GROUP

Interveners

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DAY FIVE

APPEARANCES

Mr. Robert Palmer & Ms Fiona Banks (instructed by BT Legal) appeared on behalf of the Applicant.

Mr. Josh Holmes & Mr. Tristan Jones (instructed by Ofcom Legal) appeared on behalf of the Respondent.

Mr. Tim Johnston & Sarah Love (instructed by Charles Russell Speechlys) appeared on behalf of Gamma Telcom Holdings Limited.

Mr. Alan Bates (instructed by Towerhouse LLP) appeared on behalf of CP Group.

1 **Tuesday, 24th May 2016**

2 **(10.30 am)**

3
4 **Housekeeping**

5 **MR BATES:** Before we start on the economic experts, I wonder if I might raise two
6 short matters.

7 **THE CHAIRMAN:** Yes.

8 **MR BATES:** The first arises out of Ms Kennedy's evidence yesterday and in particular
9 the table that was handed up that states that it relates to some DLE traffic and
10 an issue was raised yesterday about whether that table in fact shows traffic handed
11 over to TalkTalk at tandems, given that TalkTalk is connected to BT both at the DLE
12 and at the tandem layer.

13 I have caused enquiries to be made about that overnight. I can confirm that
14 Mr Palmer is correct that these are tandem connections rather than DLE connections.
15 The error arose essentially because the person who was asked to take a sample
16 looked at the list from which they were asked to take a sample which had all the BT
17 switches to which TalkTalk was connected and simply took the first page which
18 actually had tandems rather than DLEs so that's how it has arisen. Of course I offer
19 my sincere apologies to the Tribunal for a mistake that shouldn't have happened.
20 I have considered what ought to be done about it. I am not going to ask to recall
21 Ms Kennedy partly because she is not able to be here today but I think I can make the
22 same points in closing as I would have made anyway by reference to the information
23 relating to tandem. Again, I completely apologise to the Tribunal for the error.

1 There was no intention of course to mislead the Tribunal in any way.

2 The second matter is the provision by the CPs of revised versions of witness
3 statements with less material redacted. That has now been done. Revised
4 non-confidential versions, so with less redaction in them, have been provided
5 electronically already this morning. Colour copies of confidential versions with
6 different highlighting are being copied at the moment and will be provided in the
7 course of the day so that they will be available for closings.

8 **THE CHAIRMAN:** Thank you, Mr Bates. There are a couple of procedural matters
9 that might be convenient for the Tribunal to raise now. The first is that parties
10 requested that we either sit early or sit late tomorrow. Our preference would be to
11 start at 9.30 rather than to sit after 4.30 if that would suit parties. So that is what we
12 will do.

13 The other matter is related to the transcript. We have noticed a few, very few,
14 points in which the transcript might not be entirely accurate and we wondered if
15 parties could liaise to agree any corrections that they thought were appropriate.

16 **MR HOLMES:** That sounds entirely sensible.

17 **THE CHAIRMAN:** Thank you. So we can proceed with the evidence then unless
18 somebody else has anything else?

19

20 **DR DANIEL MALDOOM (sworn)**

21 **Examination-in-chief by MR PALMER**

22 **MR PALMER:** Dr Maldoom, you have produced two expert reports to the Tribunal, the
23 first is in bundle BT1 at tab 5 and we can see from page 1 of that report that you are
24 a founding partner of DotEcon Limited, an economic consultancy with particular

1 focus on telecommunications and networked industries.

2 **A.** Yes, that is correct.

3 **Q.** And we have your CV appended at appendix 3 which is page 76 of that report. We
4 can see from that that in your role you have revised a range of parties including the
5 CMA, Vodafone, Virgin Media, the Competition Commission, the OFT, BT, O2,
6 and many different industry players in connection with a wide range of different
7 matters?

8 **A.** Yes, indeed, yes.

9 **Q.** Do you adopt this report as your evidence?

10 **A.** I do, yes.

11 **Q.** Insofar as it contains matters of fact, is it true to the best of your knowledge and belief?

12 **A.** It is, yes.

13 **Q.** And so far as it contains matters of opinion, is that your opinion that you hold as an
14 independent expert witness?

15 **A.** Yes.

16 **Q.** Thank you. And the same questions, please, in respect of your second expert report
17 which is at bundle BT6 at tab 3. Do you also adopt that report as your evidence
18 before this Tribunal?

19 **A.** I do, yes.

20 **Q.** Just some matters arising. First of all, I think you had a point of clarification that you
21 wanted to make in respect of one of your paragraphs I think concerning symmetries,
22 is that right?

23 **A.** Yes. I think on re-reading, I thought there was a paragraph which wasn't entirely
24 clear. I will just find it. I think it was in the first report. Yes, it's paragraph 149.

1 This is talking about the issue of traffic asymmetry as it might arise in terms of call
2 termination, and also porting asymmetry in terms of ported traffic. I think in the
3 middle that of paragraph there's a sentence which says:

4 "Under this assumption, entrants may have a net outbound traffic
5 position so are... "

6 Then it goes on to talk about termination. I think it might be better to replace the
7 word "so" with "and". I think it's a little dense, this paragraph. So I apologise for
8 the shorthand here.

9 **Q.** Other matters which have arisen since you made your report. In Ofcom's skeleton
10 argument, and indeed in the CP group skeleton argument, it's suggested that BT in
11 effect has nothing to worry about in terms of the effect of this decision requiring it to
12 continue to maintain TDM network assets to provide a number portability service for
13 onward routing because they say the LRIC measure, the measure of incremental
14 costs, and so insofar as those costs are incremental to BT's network, they will be
15 covered. Can I just invite your response to that point?

16 **A.** Yes. Okay. I noticed on the first day there was some discussion about these
17 different categories of cost so it might just be good to start with some basic
18 definitions first of all before we get into any complexity.
19 So when we talk about the incremental cost of a service, we are looking at essentially
20 those costs which could be avoided if the activity was ceased. So the classic
21 textbook example is always, you know, shoes and beef where you have farming
22 activities and you have a cow which you can eat and you can make shoes out of it.
23 So the shoes, the incremental cost of the shoes are essentially the tanning and
24 stitching, so if you do not bother with shoes you can avoid all those costs. Similarly

1 for the beef, there's the slaughtering and the butchering, so those are the incremental
2 costs of the beef. There are then some common costs, the farming, the land
3 et cetera, which then have to in some way be recovered across those various
4 activities. So just to be clear that those common costs are not within the definition
5 of incremental costs. I think everybody's agreed on that.

6 The complication with all of this is the term "long run", because that obviously
7 means there is a timeframe over which you are looking at what people can do to
8 avoid costs. So in the short run, very, very few costs are avoidable. There's not
9 much you can do to change your modes of operation and so on. So particularly in
10 telecoms, the short run marginal costs of doing anything are very close to zero in
11 many cases. If I pick up the phone and phone somebody, that doesn't really cause
12 any cost at that instant. Similarly, were I not to do it then there's no cost that my
13 telecoms provider can avoid from the fact that I haven't made this phonecall in the
14 next 5 minutes. Over a longer period, clearly operations can be changed and costs
15 can be avoided.

16 I think what's a little bit tricky is that the distinction between incremental costs and
17 common costs does have a timeframe element to it because there are certain costs
18 which you might say are common in the short run which become potentially
19 incremental in the longer run and so on.

20 I think here we have a particular complication which is to do with the fact that we
21 have essentially a legacy network and I think there has been a lot of discussion about
22 that over the last couple of days and this comment is really in reaction to those kind
23 of points.

24 So we have a situation where essentially we have a TDM network that's providing

1 some porting services and then some other services which are largely termination of
2 traffic, origination of traffic, and a little bit of other porting activities. So there's
3 a bunch of services that are provided over that TDM network. And we have
4 a situation in which these various services are declining and there's the possibility
5 that at some point, as we have heard, we do not know when that is, that that network
6 would be turned off and services would be shifted onto another network.

7 Once we are into a scenario where we are looking at a possible future date for turning
8 something off, then obviously there's a question mark now over whether common
9 costs should be treated as really a fixed cost that is not avoidable in any sense, or
10 whether it actually becomes, in a very long run look at this, it becomes an avoidable
11 cost.

12 We would have to think for example about how the timing -- if there's a timing issue,
13 if it takes longer to turn a network off, if traffic stays on it for longer, then we would
14 be incurring certain common costs for longer. To take a concrete example, if we get
15 rid of the TDM network those switches are old, large and take a lot of space. They
16 are often in buildings that can be got rid of entirely. So if you could turn off that
17 network there's a common cost which would go, which would be say the building.
18 So BT's chairman's salary is a common cost, that still has to be paid. But there are
19 other common costs, such as these buildings and so on, which would be avoided by
20 this migration.

21 So I think this creates a particular complication because we might then need to start
22 to think about the common costs as being potentially an opportunity cost of doing
23 something. To take a particular example again, if we had a scenario where we had
24 lots of one type of traffic which meant that the network had to stay on, but then other

1 types of traffic had declined to a low level, then if we were to charge only on the
2 incremental cost basis for the large amount of traffic, we would then have a large
3 base of common costs that would have to be recovered potentially from a small
4 volume of traffic somewhere else. That kind of pricing structure may be
5 inconsistent with being able to turn off the network because essentially you are
6 keeping the common costs there, because you have a lot of activity on one side, but
7 there again you have to try and recover those common costs somewhere else.
8 So this has arisen in other contexts in telecoms, and I probably shouldn't go on too
9 much longer about this, but this has been an issue in other contexts where there has
10 been legacy network assets that there has to be a migration path from.

11 **Q.** Do you want to name an example?

12 **A.** ISDN30 is a case that attracted quite a lot of scrutiny and I think this is an interesting
13 example where the principles were fairly well established. The issue here is, again
14 this is a legacy service to do with providing services over a bundle of cables, and that
15 has been in decline for a long time. Other types of business services, IP
16 connectivity and so on, are replacing that. The actual equipment for
17 providing -- network equipment for providing that service isn't really available, and
18 when it came to looking at regulating that service, it has been regulated, Ofcom
19 moved over to a position where there had to be essentially a safeguard cap on this
20 service, but there was no intention to bring it down to LRIC or even LRIC+ because
21 there was an acknowledgement that there had to be a migration incentive maintained.
22 What that meant was there wasn't a risk of, say, lowering the price and then causing
23 either an increase in demand or indeed slowing down the process of demand
24 decreasing. Were that the case, then there would be costs that might be incurred.

1 So for example you might have to try and replace equipment that broke and so on.
2 Under this pricing scenario, the migration could be handled in a relatively low cost
3 manner because essentially as demand declined, equipment could be pulled out of
4 the network, put on the shelf, when something breaks it comes back, and new
5 investment was avoided by doing that.

6 **Q.** I'm grateful for that. Secondly, there was some discussion yesterday and I think on
7 Friday last week about whether Ofcom's WBA market review could provide helpful
8 information to allow a CP to derive a proxy for DLE traffic information. So even
9 assuming that BT did not provide any traffic information at all to a CP about the
10 volume of ported traffic to that CP going through one of their specific DLEs, there
11 was some discussion about whether nonetheless helpful information could be
12 derived, and Mr Holmes yesterday made some points about why, in his view,
13 Ofcom's view, that was not so. Can I just ask you to comment on that?

14 **A.** Yes, sure. Mr Holmes is quite correct to say that the WBA review looked at the
15 locations where local loop unbundling was occurring primarily and whether other
16 CPs would be present to provide broadband services, in many cases over unbundled
17 local loops. So in that sense, there are many more buildings involved in that
18 question than there are in terms of DLEs and tandem exchanges.
19 However, I think it's useful to look at this from the perspective of a CP who's
20 thinking about going down to the DLE to pick up ported traffic and what they would
21 need to know, and I think that got flushed out fairly clearly yesterday. The real
22 issue is knowing about what other CPs might be connected there for the delivery of
23 their traffic down at the DLE level. So that's really a question primarily about what
24 infrastructure that CP has and whether it goes to the DLE.

1 We have also heard that CPs tend to use far end handover, so I think it's not
2 an unreasonable assumption that if someone has a fibre running to a DLE they will
3 actually use it and dump traffic at that point if they can, rather than take service from
4 BT. So this really turns into a question about where CPs are in terms of the reach of
5 their interconnection.

6 In this regard, obviously people build fibres, they dig holes in the road not purely to
7 provide voice services, they provide a whole range of different services. These are
8 big bundles of fibres which are going in to connect places.

9 So it is relevant to think about what market shares providers might have in
10 a geography around a DLE and now we are in a situation where there's a lot of
11 bundling of services, I think the last market review from Ofcom showed something
12 like around three quarters of people are actually buying bundled services with
13 broadband and voice. So there are ways of trying to understand what sort of
14 presence other CPs might have in certain areas.

15 It's clearly not precise but there is information on that. There are also ways of
16 interlinking some of the information around the WBA back to DLE because for all
17 the network assets of BT, there are maps available to see how those things fit
18 together. There are also websites that tell you, as a customer, if I want to get
19 service, what providers are available to serve my house in a particular location.

20 You can also see what technologies would be used, whether it's local loop
21 unbundling and so on.

22 So there's plenty of information around to try and assess the extent to which a CP
23 might be present in a DLE, and I use the word "might" carefully here. You do not
24 know for certain but you have a feel for relative priorities.

1 If we just return to the question of a CP who is trying to decide whether or not to
2 build out to a DLE, I could certainly as a manager construct a model which looked at
3 where I thought CPs might be present and probably come up with a hitlist order of
4 those DLEs. Obviously size would be important as well as the number of CPs
5 interconnected. Then what I could do is I do not actually need the traffic volumes at
6 that point because I have a priority order.

7 So a simple managerial solution to this would be to say we'll take top view, we'll try
8 those, we'll see how much traffic we pick up and what the cost-benefit analysis is
9 there. Then we could just work down that list, and at some point we would find that
10 we were incurring costs to connect to that DLE which were not compensated for by
11 the traffic picked up and the APCCs avoided at which point we could simply stop.

12 It's not a perfect solution but I think that would certainly allow you to pick up some
13 exchanges where there were clear benefit.

14 **Q.** Lastly, Mr Holmes handed up a document yesterday to the Tribunal which he made
15 clear was not an agreed document but an Ofcom document setting out what was
16 intended to be a factual account of the way in which calls might be routed. I think
17 you have some comment on that?

18 **A.** Yes, I have seen the draft of this. I think there's two questions. The first one is
19 simply about enumeration, working out all the different ways that the traffic can take.
20 But clearly what is important here is the second one, which is comparison, which is
21 thinking about what would happen to traffic where it ported versus it not being
22 ported, okay? And the reason that's a relevant question is because I think we are all
23 concerned about what the effects might be on retail competition and we are interested
24 in the extent to which there might be cost penalties that were incurred by certain

1 types of CP as a result of them having to use ported numbers to acquire customers.
2 I think everybody's agreed on that being a relevant question.
3 So then in terms of the table we would then have to ask, well, for a notional CP who
4 is acquiring a customer what is the difference and how does that traffic move?
5 I think we are primarily here interested in asymmetric effects and impacts on small
6 CPs, that's also relevant. And I think the problem is once you have a small CP then
7 you have the issue that they are not going to be directly connected to a large number
8 of other CPs, and in many cases it might be that if you're a new entrant you might
9 come in interconnected to, say, only one provider, such as BT. If it's a transit
10 provider it might be BT, it might be someone else, but you're probably only
11 connected in that way, and then rely on your transit provider to take your traffic
12 through to other CPs.
13 So if we take that scenario, the problem then is that there is really not that much
14 difference between the ported and the non-ported scenarios. So I am here, I am
15 sitting here, I am the small CP. How does my non-ported call come in? That
16 comes in through a transit provider to me. How does a ported call come in? That
17 comes in -- if it's to a BT number that comes in through BT. But essentially the
18 switching that has occurred has been essentially the same in the two cases and the
19 only real difference here is to do with the payment structure.
20 So for porting we have the RCP pays rule, which means that our notional small
21 entrant would be paying for the step that happened beyond the donor, whereas for
22 non-ported traffic it would just be the terminating operator, and then it would be the
23 originator who would have been paying for the transit step that would happen as
24 a result of our notional small CP not being densely interconnected with lots of other

1 CPs.

2 So the real question is not so much about the routing, it's more around the question of
3 who pays, which is obviously -- that is then a regulatory issue and that is a function
4 of the rules that are in place around ported traffic, not so much an engineering
5 question.

6 **MR PALMER:** Dr Maldoom, thank you very much. If you remain there, there will be
7 some questions from Mr Holmes.

8 **Cross-examination by MR HOLMES**

9 **MR HOLMES:** Good morning, Dr Maldoom. It's nice to see you again in this parish.
10 Your expertise is in the field of economics?

11 **A.** That is correct.

12 **Q.** And the evidence you have given is expert opinion evidence in relation to matters of
13 economics?

14 **A.** Correct, yes.

15 **Q.** You are not here giving evidence of fact either about the actual propensities of CPs in
16 relation to interconnection or porting or the ways in which ported traffic is carried?

17 **A.** I think where I have used facts, they are all referenced out to either witness statements
18 or to other documents, yes.

19 **Q.** And the source for the factual evidence that you rely upon is partly BT's witnesses?

20 **A.** Where that's the case that's indicated, yes.

21 **Q.** And partly the interveners' witnesses?

22 **A.** Yes, that's true. There were some points which Gamma made which I thought were
23 interesting which I have referenced.

24 **Q.** You reviewed those before you made your second report?

1 A. Yes.

2 Q. You have given expert evidence for BT in a number of previous appeals in the CAT?

3 A. I have, yes.

4 Q. Some of them have involved dispute determinations like Ethernet?

5 A. That's correct.

6 Q. And some have involved challenges to ex ante obligations imposed following a

7 finding of significant market power such as in Colt and the mobile call termination

8 cases.

9 A. Yes, that's right.

10 Q. In Colt, I remember we had the good fortune of having you on our side as the

11 regulator.

12 A. You did, yes.

13 Q. With Ofcom. Did you do any work for BT on average porting conveyance charges at

14 any point prior to preparing your report in this appeal?

15 A. That is a good question. I think prior to the appeal -- I am just trying to think. Yes,

16 I think they had asked me some questions around what did I think about the issue,

17 yes, but nothing substantial.

18 Q. At the time of the consultation on the guidance?

19 A. No, this wasn't at the time of the guidance. This was subsequently. It was briefly

20 before being instructed, that's all.

21 Q. But during the period of dispute?

22 A. Yes, during the period of the dispute, not around the time of the guidance.

23 Q. So I will focus primarily today on the ground 3 issues, about the choice of cost

24 standard?

1 A. Right.

2 Q. But I'll also touch briefly on the ground 1 question of contestability on which you also
3 give some evidence.

4 So I would like to begin at paragraph 140 of your first report, if I may. Have you
5 got this in front of you?

6 A. I do, yes.

7 Q. And you helpfully there identify the question which you see as being the nub of the
8 dispute which begins halfway through the paragraph. You pose a simple question:

9 "What are the economic effects of charging for the conveyance activities
10 additional to switch conveyance on a pure LRIC basis compared with a
11 LRIC+ basis or competitively determined basis?"

12 Just to clear out some side issues in that question, in the way you frame it you
13 exclude the switch conveyance element because BT agrees this should be regulated
14 at LRIC?

15 A. That's right, I have not looked at that in detail. I think there are some questions that
16 might come up around it in the context of asking hypothetical questions, but I didn't
17 look at it in detail because it doesn't seem to be a matter of any great dispute here.

18 Q. Indeed. And I think we will come onto this, but you accept it's probably not
19 a contestable service given the DCP's control of the numbers?

20 A. I think I can be fairly precise about this. I think if you maintain an assumption of
21 indirect routing, it is not contestable. I think that's clear. However obviously then
22 in a broader sense there's the question of direct routing in which case that switch
23 conveyance would go away. So therefore it's more a matter of which assumptions
24 you wish to adopt, about whether you're considering direct routing in the mix or not.

1 Q. We will come both to direct routing and to contestability of the switch.
2 You equate the LRIC+ price with BT's actual prices for inter-switch conveyance
3 ported calls. That's right, isn't it?

4 A. Yes. That's not something I looked at in any great detail but I will try and explain my
5 understanding and tell me if that's not right. My understanding is essentially the
6 elements within those are priced in a manner similar to the LTC and the ITC
7 products, so include in there an element of common costs recovery, yes.

8 Q. So the assumption rests on the pricing being the same as for competitively determined
9 LTC and ITC?

10 A. My understanding is there is a broad agreement, shall we say. I'm not saying -- I do
11 not think it's exact, but I think those are broadly similar.

12 Q. Do you understand that to be by reason of regulation?

13 A. Sorry, what's the question?

14 Q. The equation between the level of LTC and ITC charges and the level of --

15 A. Okay. I do not know, I think you would have to ask BT that question, but --

16 Q. Understood.

17 A. -- if we assume that BT takes the obligations which are in GC18 and thinks about
18 how am I meeting that?

19 Q. Yes.

20 A. I would have thought that if they take deregulated conveyance services and say what's
21 the price of that, and then look at a pricing aspect which is regulated because
22 obviously porting -- we are in the special world of porting where they have specific
23 regulations for this, then I would have thought that they could take the fact that they
24 have looked at a competitive market as at least some comfort that they were meeting

- 1 those obligations in terms of cost orientation.
- 2 **Q.** That's very helpful. So in summary, you haven't specifically investigated the extent
3 to which the price of APCCs, inter-switch APCCs are competitively determined.
4 But insofar as the price is set at a level of a market that is subject to competitive
5 constraints by reason of GC18, then that can give one some comfort?
- 6 **A.** Okay, so my thought was that that was sufficient to demonstrate that. It may be that
7 there are additional competitive constraints as well which would obviously go
8 potentially to establishing a price that might have been set that satisfies those
9 constraints, but that wasn't necessary.
- 10 **Q.** And you haven't looked at that?
- 11 **A.** No.
- 12 **Q.** So subject to those two side issues, the central economic issue you identify as the
13 simple question for Ofcom is whether APCCs should be regulated at LRIC or
14 LRIC+? That's the core of the case?
- 15 **A.** Yes. I think the way I have come at this is to look at that as the central question.
16 That has a few implications for some of the other questions. So it's a little bit, as
17 you say, to do with contestability, but I very much focused on that as the central
18 question.
- 19 **Q.** Yes. And this is an unavoidable question for both CPs and Ofcom to consider given
20 the general latitude of general condition GC18?
- 21 **A.** The very fact that Ofcom has to issue the guidance tells us that this is not a question
22 resolved by the wording of GC18.
- 23 **Q.** No, indeed.
- 24 **A.** My thought on this. So therefore it was essentially a question of --

1 Q. It was an open question?

2 A. **An open question, a matter of I suppose regulatory discretion to work out how**
3 **GC18 would be implemented. You could rewrite GC18 but then that would**
4 **require another regulatory decision and the same issue would come up.**

5 Q. But working within general condition 18 you have this cost orientation requirement
6 based on incremental cost but that leaves the question open as to whether it should be
7 LRIC or LRIC+?

8 A. Yes.

9 Q. In paragraph 140 you say that the simple question is one that Ofcom should have
10 considered. I know that you have views as to the sufficiency of Ofcom's analysis,
11 but you are not intending here to suggest that Ofcom did not in fact consider the
12 choice between LRIC and LRIC+ in the guidance?

13 A. No.

14 Q. Staying for a moment within your first report and turning to paragraph 146 just over
15 the page, you identify there three broad issues which you see as most relevant to the
16 issue. The first concerns the effects of regulation on competition between CPs and
17 customers, that's the impacts on retail competition. The second concerns incentives
18 of CPs to move to direct routing. And the third is your point about potential
19 wholesale distortions?

20 A. Yes, that's right.

21 Q. I would like to address those in turn with you, if I may. So dealing with retail
22 competitive impacts, you accept that Ofcom was right to consider these effects as
23 part of its assessment?

24 A. Absolutely, yes, that's right.

- 1 **Q.** And we can agree this was a factor of particular importance to Ofcom's overall
2 conclusion if one looks at how they set out their reasons in the guidance?
- 3 **A.** That I am not so clear on. There is -- I have discussed this at various points. There
4 is wording there that suggests that Ofcom doesn't think that retail competitive effects
5 are particularly important, but then equally it doesn't think quite a lot of other effects
6 are that important. So we are left with the position where there is no particularly
7 strong costs or benefits.
- 8 **Q.** I may have been insufficiently clear. So not looking necessarily at the magnitude of
9 competitive effects, having regard to the different criteria that Ofcom was
10 considering, I think you would accept that Ofcom attached particular weight to retail
11 competitive effects?
- 12 **A.** That's -- okay, I think that should be the starting point and it needs to be weighed up
13 against other issues. We will go through this in detail so let me not be expansive,
14 yes.
- 15 **Q.** Yes, we are just setting out the framework at the moment.
16 So you deal with the issue in five paragraphs of your first written report beginning on
17 page 57. At paragraph 148 you set out your view which I think you were touching
18 on: While the level of porting conveyance charges could have some effect on retail
19 competition, there are good reasons to expect the effect to be weak.
20 Do you have that?
- 21 **A.** Sorry, which paragraph number?
- 22 **Q.** This is paragraph 148.
- 23 **A.** Yes, right.
- 24 **Q.** You see the sentence:

1 "However, whilst the level of porting charge might conceivably have
2 some effects on the intensity of competition, under current market
3 conditions, we must expect this to be weak...."

4 So let's first consider why higher porting charges may reduce the intensity of retail
5 competition. You accept that the APCCs, which a recipient communications
6 provider has to pay on a ported call, give rise to a differential between margins
7 earned on a ported and a non-ported call?

8 **A.** Yes. So this is in terms of, just to be absolutely clear, so in terms of terminated traffic
9 for that CP then, yes, we are talking about the margins on terminated traffic for that
10 CP.

11 **Q.** Well, just to explore that with you for a moment.

12 **A.** Yes.

13 **Q.** We are looking here at the economics of serving a customer?

14 **A.** Indeed.

15 **Q.** And there will be different sources of revenues associated with serving that customer?

16 **A.** That's right.

17 **Q.** There will be termination revenues and there will be revenues on the retail side and
18 various services supplied to the customer. Isn't the relevant comparison therefore
19 between the margins earned on a ported and a non-ported call rather than the impact of
20 APCCs on termination revenues specifically?

21 **A.** So you are right, there's -- okay, so let's go through. There are different sources of
22 revenue, okay? So if we just start on the termination side for a minute, clearly there
23 is a cost differential for an operator which would arise as a result of the porting. So
24 if I am terminating a call, I am now the RCP and I potentially have to pay the

1 APCCs. And I think this has been the main bone of contention and the proximate
2 cause of the dispute in that clearly there has been this debate about porting
3 differentials which is --

4 **Q.** It's what got the CPs onto this in the first place. They were annoyed because their
5 termination rates were going down?

6 **A.** Yes. So you get so much money in from termination. Some of that essentially goes
7 out in an APCC. So the question is then what's left? And I think, well, we do not
8 need to go through the history.

9 **Q.** But Ofcom and you I think agree, I do not think this is contentious. If we turn to
10 paragraph 95 of your first report?

11 **A.** Yes.

12 **Q.** We can agree there's no direct link between termination revenues and the APCCs.
13 Termination revenues are just one source. You go on in the paragraph to identify
14 what is the relevant factor in terms of any -- do you see in the final sentence,
15 beginning at the top of page 38:

16 "Clearly, this [being the balance between termination rates and APCCs]
17 does not affect the differential between revenues earned on a ported and
18 a non-ported incoming call (which is determined by APCCs and
19 unaffected by the FTR which, as I have explained above, will be the
20 same whether the call is ported or not for a geographic call)."

21 And it's this differential, you say, which is the relevant factor in terms of any impact
22 on incentives to win customers from rival operators by porting?

23 **A.** Correct. Exactly.

24 **Q.** So it's the differential between margins earned on a ported and non-ported call, can we

1 agree on that?

2 **A.** Yes, these incoming calls.

3 **Q.** And that doesn't just depend upon termination revenues, does it?

4 **A.** No, it's to do with the differential, that's right. The termination revenue -- the

5 termination cost is the same in the two cases.

6 **Q.** The termination cost to the terminating provider.

7 **A.** That's right. So we are essentially thinking about the terminating provider. In one

8 case they receive that call and it's not ported, in the other case they receive that call

9 and it's ported, and I think we can agree we are looking at the --

10 **Q.** It's the level of the APCCs.

11 **A.** Exactly. The difference between those two cases.

12 **Q.** Which affects the incentive to acquire ported customers?

13 **A.** That's right, yes.

14 **Q.** So if there are additional costs associated with serving a ported customer, just to be

15 clear, there will be less of an incentive to compete for such a customer's business, all

16 else equal?

17 **A.** All else equal, that's right. So we would have to -- that is one of various sources of

18 revenue. So the incentive is related to the total revenue but that is one component.

19 **Q.** Yes. And we do not need to discuss the magnitude for the moment, it is just the case

20 that if APCCs are higher, there will be less incentive to acquire a ported customer?

21 **A.** I think magnitude's quite important in this case because we are talking about some

22 very large revenues in terms of other services relative to some rather small cost

23 differences.

24 **Q.** I understand.

- 1 A. I think we can't ignore magnitude, yes.
- 2 Q. Porting conveyance charges give rise to additional costs that are specific to ported
3 customers in that they raise the cost of receiving inbound calls relative to a CP on
4 an unported number. That's why there's an effect on incentives, isn't it?
- 5 A. That's right. So just to be clear, the costs are specific to the ported customer, however
6 in terms of competing for customers, it is quite difficult for me to discriminate
7 between ported and non-ported customers. So if I go and put an advert out in the
8 street saying you can get this deal then I can't really differentiate between people
9 who turn up who are supporting from BT versus --
- 10 Q. What about targeted marketing? Our rates are less than BT, for example. A big
11 billboard targeting BT's customers?
- 12 A. Okay.
- 13 Q. What about mailshots or emails to customers who switch first to you and then to
14 another provider? I have had one.
- 15 A. Okay.
- 16 Q. Mailing lists of known switchers?
- 17 A. Yes, you can try. There is going to be -- you will always try and target customer
18 groups who you think are going to be more profitable.
- 19 Q. Better rates for customers taking new numbers?
- 20 A. Yes. You are essentially having to offer a price which is -- okay, you are offering
21 prices and services which have to be offered to the mass market, so you will
22 always -- in terms of broad effects on competition, we have to be thinking about
23 essentially what's the incentive attracting a customer who might or might not be
24 a ported customer.

1 Q. But you'd agree there are different customer segments?

2 A. Yes.

3 Q. And they might be targeted specifically by various means in terms of advertising?

4 A. That's clearly the case, yes.

5 Q. Porting conveyance charges then give rise to additional costs that are specific to

6 ported customers. We have covered that. And at paragraph 149, I was glad of

7 your clarification, I was grateful for that, because I stumbled over it and I would be

8 grateful if we could just walk through it so I can understand the point that is being

9 made because it's a subtle point I think.

10 So you are describing a situation in which there are partially captured calling circles

11 leading to imbalanced termination traffic. Is that right? A calling circle is a circle

12 of family and friends who call one another more frequently than other parties?

13 A. Yes, that's right.

14 Q. And if you haven't managed to capture calling circles of that nature you might end up

15 with customers who call friends and families on other networks?

16 A. That's right. So the balance between on-net and off-net traffic may be affected by

17 issues such as this.

18 Q. So you end up with a CP who has failed to capture a calling circle, who has

19 a particular weakness in that respect, who is a net traffic exporter?

20 A. That's right. So this is relevant in -- this has been relevant in the debate about call

21 termination regulation.

22 Q. Indeed, yes. That will incentivise the CP to win customers by the termination

23 revenues which it will produce?

24 A. Yes.

1 Q. So the imbalance of traffic you are discussing here is in the origination and
2 termination of calls generally?

3 A. Yes. I think the paragraph starts with discussing termination and then I was just
4 trying to draw an analogy across to the porting situation which I think is possibly less
5 than clear from the way it's been drafted.

6 Q. And you say that porting charges may eat into the termination revenues?

7 A. Yes.

8 Q. Softening the incentive to win a customer?

9 A. Yes.

10 Q. But we have discussed, and you have agreed, that the appropriate comparison is
11 between the margins on the ported and the non-porting call, that's right, isn't it?

12 A. If you are asking the question of what's the relative incentive to win a ported or
13 a non-porting customer, yes. But there's also the question of what's the incentive to
14 get a customer in general? In which case then we are looking at potentially some
15 average position of what do I expect the margin to be on a customer of which APCCs
16 is an element? There is an additional cost if I'm a new operator who is using
17 porting.

18 Q. I think I now understand the point you are making. But it's a narrower and a more
19 specific incentive that you are discussing here than the general incentive that we
20 were debating before which relates simply to the costs associated with serving
21 a porting customer, that would be fair, wouldn't it?

22 A. Yes. I am not sure I'm entirely capturing your distinction. I think you might have to
23 try this one on me again because --

24 Q. We have been discussing the incentive effects of APCCs for the purposes of

1 understanding the effect of higher APCCs on retail competition?

2 **A.** Yes.

3 **Q.** And we have agreed that, all else equal, higher APCCs will increase the cost of
4 serving a ported customer and will therefore reduce the incentives to acquire such
5 a customer?

6 **A.** Such a customer in particular and customers in general which is also the broader
7 question for retail competition. Some customers will be ported.

8 **Q.** Ported charges, the level of the APCC won't affect the desirability, the profitability of
9 attracting a non-ported customer?

10 **A.** Not a non-ported customer. I said a customer in general.

11 **Q.** So this is going back to your question about whether one can discriminate -- sorry,
12 I didn't mean to interrupt you.

13 **A.** We are okay. Do continue.

14 **Q.** Are we going back to your point that there may be difficulties in discriminating
15 between ported and non-ported calls?

16 **A.** Yes, indeed. So we are broadly in agreement here. You are absolutely right, there's
17 not an effect on a non-ported customer for the APCC, there is an effect on a ported
18 customer. I am just making the point as well if you think about competition of
19 customers in general, which is a more appropriate way to think about this, then
20 there's obviously an effect but it's blended out.

21 **Q.** Blended out?

22 **A.** Between ported and non-ported customers depending on what sort of ratios you expect
23 them to have.

24 **Q.** Because of the impossibility of discriminating?

- 1 A. Not impossibility.
- 2 Q. The challenges of discriminating between different groups. But you can offer
3 different terms -- in principle, you could offer different terms for a ported or
4 a non-ported customer?
- 5 A. I think probably the more selective your approach then obviously -- the cost of trying
6 to market and target these things are not insignificant and there are also general
7 marketing campaigns aimed at attracting customers in general, so --
- 8 Q. The effect we were discussing doesn't have to do with partially captured calling circles
9 or the balance of originating and terminating minutes on a network, does it, for
10 general traffic? In fact it has nothing to do with those things. You were offering
11 those as an analogy?
- 12 A. It is to do with incoming calls, let's just be clear. So if the APCCs -- if we are looking
13 at what's the incentive to attract a customer, the APCC question arises in regard of
14 these incoming calls which are off-net.
- 15 Q. We have agreed termination revenues are only one source of income?
- 16 A. That's right. I do not think there's any disagreement between us on this.
- 17 Q. Okay. Perhaps we should move on to paragraph 150 where you identify three
18 reasons why you expect the effects of the level of porting conveyance charges on
19 retail competition to be of limited practical relevance. The first is that you say the
20 consideration is only relevant to the extent that ported traffic is imbalanced?
- 21 A. Yes.
- 22 Q. By "imbalanced", do you mean a situation in which an operator, perhaps a later
23 entrant operator, has to pay relatively more porting charges because it has more
24 ported customers than a more established rival?

- 1 **A.** Yes. So I think in particular if you think about what's the incentive of getting -- sorry
2 to go back to the customers in general, but if I get my average customer, if that's
3 tending to be a ported-in customer that's obviously going to have a certain cost
4 associated with it, and if we look at the net porting positions that tells us a little bit
5 about what the average customer looks like for that kind of CP.
- 6 **Q.** And to be clear, I do not mean to flog a dead horse here, but the porting traffic
7 imbalance that you are referring to here is different from the traffic imbalance you
8 refer to in the preceeding paragraph?
- 9 **A.** Yes, that's right.
- 10 **Q.** Okay. Considering the simple incentive effects of APCCs increasing the cost of
11 serving a ported customer, those effects would apply regardless of any imbalance in
12 ported traffic, wouldn't they?
- 13 **A.** Well, there's a number of questions there. Yes, that's right, you could look at a single
14 customer and you could say, right, is there a cost penalty associated with that
15 customer that arises from the porting?
- 16 **Q.** Yes.
- 17 **A.** Or obviously you can ask another question which is what does the average customer
18 look like? In which case they might sometimes be ported in and sometimes might
19 not be. Then it would be relevant to look at the differential porting position.
- 20 **Q.** And insofar as you can differentiate between those customers in your acquisition
21 efforts, you have an incentive to acquire one rather than the other?
- 22 **A.** Sorry, to go back a couple of steps. Absolutely. So if the question you ask is: what
23 is the incentive for acquiring a ported-in customer? Then, absolutely.
- 24 **Q.** Yes. So imbalance isn't necessary for the retail competition effect that we have been

1 considering?

2 **A.** Okay, I think the problem is we have got essentially a number of different effects here
3 and I think we are conflating them, that's the trouble. There's a specific question
4 about trying to attract specifically ported-in customers and there is another question
5 about trying to attract customers in general. I think the position is that the traffic
6 imbalance point is relevant to the second but it is not relevant to the first.

7 **Q.** That's a very helpful clarification. So the imbalance in ported traffic is relevant
8 insofar as it will exacerbate the effect of the higher porting charges by increasing of
9 costs of some operators disproportionately?

10 **A.** There's another question: what's the overall financial impact on an operator? Which
11 is different again from the question of what's the marginal incentive to attract
12 a customer. I think what we are interested in here is retail competitive intensity, so
13 we are primarily interested in those acquisition incentives. I think we are less
14 interested in that other question about overall financial impact.

15 **Q.** Understood. But if some operators did face systemically higher costs than others,
16 that might affect retail competition?

17 **A.** I think again it's worth being really careful here. I think we want to focus on the
18 incentives at the margin for customer acquisition because that is the driver of
19 competition.

20 **Q.** Absolutely. We discussed those.

21 **A.** There's also the broad question of what resources an operator has and whether there's
22 money coming in or going out as a result of these various forms of payments going
23 back and forth between CPs. I do not think any of that is material here because
24 I think we know from Mr Godfrey's evidence, there's a confidential section there

1 which just discusses some of the net financial flows. Those are small in aggregate
2 terms, they are very small numbers in telecoms terms. So we are really focusing on
3 these marginal incentives for customer acquisition. I think that is the relevant
4 question.

5 **Q.** Two points. Can you just forgive me if I am being slow here. But in paragraph 150,
6 when you say that the retail effects are relevant to the extent that ported traffic is
7 imbalanced.

8 **A.** Yes.

9 **Q.** Which effects did you have in mind?

10 **A.** What I had in mind was the question about what happens when we get an average
11 customer, they might be ported, they might not be ported, okay? So we have to
12 think about what the overall position of an operator might be.

13 **Q.** And how does the traffic imbalance in relation to customers already acquired affect
14 the acquisition of that customer, an average customer at the margin?

15 **A.** Because presumably the ones I have acquired are the ones I might tend to get. That
16 may not be the case but --

17 **Q.** I see --

18 **A.** -- that tells you something about them.

19 **Q.** So it's the assumption that that imbalance will reflect the proportion of customers
20 being acquired now that are ported or non-ported?

21 **A.** If I said: right, today I am only going after ported customers. I am ignoring
22 everybody else, I am going on a massive campaign to attract ported-in customers.
23 Then obviously it's not relevant, okay, what the net position is, because I am only
24 getting ported customers and I am paying the APCC on every one that I acquire.

1 That's clearly the case.

2 If I am trying to get customers in general, then presumably they will be somewhat
3 similar to the ones I have got previously, in which case some will be ported, some
4 will not.

5 **Q.** I understand. And the imbalance then reflects -- potentially the existing imbalance of
6 ported traffic reflects the likely proportion of customers that are ported, that are
7 likely to be ported or non-ported to that operator?

8 **A.** I think that's likely.

9 **Q.** Yes. And that's why you identified it as a relevant consideration at paragraph 150?

10 **A.** Yes.

11 **Q.** And you have seen the figures about traffic imbalance?

12 **A.** Yes.

13 **Q.** Shall we just take a look at them. As you say, they are in a confidential table.

14 **A.** Yes.

15 **Q.** They are in DF1, tab 4. If you could turn within that report to page 53, figures 57 and
16 58.

17 **A.** Yes.

18 **Q.** I think we can accept that they do show a substantial traffic imbalance?

19 **A.** Yes. I am not sure if we can say substantial, I do not really know the answer. To put
20 this in context, unfortunately not everybody sees these numbers, but there's roughly,
21 I think it's something like on the last quarterly review from Ofcom, the UK market is
22 around something like 100 billion minutes.

23 **Q.** Yes.

24 **A.** So I think one needs to have some relativities in mind here. And I am not really sure

1 what those mean in relation to the traffic of those operators because these are
2 absolute amounts.

3 **Q.** These are absolute amounts. But in relation to ported traffic --

4 **A.** I do not think I can comment on the significance of those although clearly there are
5 imbalances.

6 **Q.** But again, as I think you helpfully clarified, we need to separate out different
7 questions about the significance of the imbalance?

8 **A.** Yes.

9 **Q.** And I thought the point you were making about the imbalance was that this shed light
10 on the proportion of ported and non-ported customers?

11 **A.** That's true, yes, absolutely.

12 **Q.** And one can see that there is a substantial imbalance?

13 **A.** Yes, it's exactly what you would expect because BT has to give up numbers to allow
14 other people to compete for its former customers and that pattern is clearly there.

15 **Q.** BT gives up, and they have to win those customers from BT?

16 **A.** Yes. That has been the dynamic of the market. That won't necessarily always be the
17 case but there has been a lot of that going on in the past.

18 **Q.** On that point, I might just pick up something in your second report which is at
19 paragraph 96. I think you sensibly kept open Godfrey which we will return to so
20 that's helpful. Thank you. So at paragraph 96, I think you make the point that you
21 were just making to me?

22 **A.** Yes.

23 **Q.** "Such a cost differential may have been a significant issue in the early days of market
24 liberalisation when new entrants may have had a high proportion of ported numbers.

1 However, over time as competition develops customers swap back and forth between
2 providers and these asymmetries will tend to equalise. Therefore it's odd for Ofcom
3 to point to this issue as a justification for changing the basis of regulation for APCCs
4 now, as even if the issue has been significant, its importance should diminish over
5 time."

6 **A.** Yes.

7 **Q.** You were here I think for the evidence of Mr Morden?

8 **A.** Yes.

9 **Q.** You recall that when a number which has been won from BT ports back to BT, it
10 ceases to be a ported number.

11 **A.** That's true.

12 **Q.** Do you recall that?

13 **A.** Yes.

14 **Q.** Whereas when a number ports from BT and then ports to another operator?

15 **A.** Yes.

16 **Q.** It remains a BT number and therefore remains ported. That will substantially
17 undermine the tendency of these asymmetries to equalise over time?

18 **A.** You are right. I didn't have that in mind when I wrote that paragraph. We have
19 a cat's cradle effect over time as we go back and forth and that obviously becomes
20 an increasing problem under indirect routing. Sorry, I keep saying -- I always call it
21 indirect. Sorry.

22 **Q.** Indirect. So in light of that, would you maintain your suggestion that it was odd for
23 Ofcom to point to the imbalance?

24 **A.** Okay, so we will get onto direct routing later, but clearly there is a solution to this

1 issue which is if we have a world of direct routing these kind of issues really do go
2 away. I would have thought that, let's put it the other way round, if there is
3 a problem now there would have been a problem in the past when competition would
4 really have been focused on getting customers across from BT, yes? We now have a
5 situation where I mean BT's roughly, I do not know, about a third of the market and
6 the other big players are roughly the other two thirds, and we have a lot of
7 competition going on involving customers going back and forth between the other
8 large players.

9 We heard a bit about plans about direct routing possibilities between some of these
10 people. I can't say too much about this because quite a lot of that material has been
11 marked confidential. But if we compare where we are now as compared to the
12 earlier days of market liberalisation, then if there is an argument now around this
13 then there would have been even more so an argument about being concerned about
14 what the impact was of customers coming across from BT in the early days when that
15 was the only competition. Now potentially you have competition between other
16 non-BT carriers who may, some of them, actually have direct routing.

17 **Q.** Yes, I understand. So you are saying that this would have been even more of
18 a concern in the past?

19 **A.** Exactly. I think that's the -- I think that point remains.

20 **Q.** You heard the evidence of Mr Young that APCCs only began being charged for in
21 November 2008?

22 **A.** Yes.

23 **Q.** Sorry, inter-switch conveyance, the element that is the subject, as we discussed
24 earlier, of your inquiry. Inter-switch conveyance began being charged, so not in the

1 early days of liberalisation?

2 **A.** I am just offering here a general observation. Clearly there's a question of data here
3 and exactly what is going on. But I think my problem with all of this is to really
4 understand what the retail competitive impacts would be you'd have to really look at
5 this and lift the hood on this, but we do not really have that information available.
6 I think Ofcom's the only person who could do that because you need to know quite
7 a lot about flows between different operators and so on.

8 **Q.** We know the flows associated with ported traffic, the revenue flows, we know the
9 imbalance of customers, and we know, as we have been discussing, the incentives,
10 all else equal, to acquire ported customers. We know those three things, do not we?

11 **A.** We know those, yes. But I am just saying I do not think that is sufficient to give you
12 a full view of how retail competition is operating and how that's affected by porting.

13 **Q.** Let me turn now to your other reasons for thinking that the retail competition effects of
14 higher porting conveyance charges are of limited practical significance. So one
15 sees these at paragraph 150.

16 You state there that:

17 "...voice services are now of fairly minor importance in driving
18 customers' choices of telecoms provider" and that customers "are likely
19 to be influenced by choices over broadband and other bundled services."

20 You also say that the retail market is now competitive which limits the extent for any
21 future gains. So those are the other two reasons?

22 **A.** Yes.

23 **Q.** This isn't at all to criticise you, these are obviously factual positions for which you
24 don't cite a source. Is this based on your general knowledge of the industry?

1 A. I think they are more logical propositions. Obviously the fact that bundles are now
2 being bought is a factual statement but I think that's fairly, that's just general
3 knowledge. If we look at Ofcom's market reviews I think that is very evident,
4 I think the information can be found there. The comments about retail competition
5 is obviously -- that's through my knowledge of what Ofcom has done over time in
6 terms of deregulation of the market at the retail level and reading what Ofcom has
7 written about the retail market.

8 But I am offering these as general propositions. I think they could be used, on the
9 basis of further analysis, to come to a more informed view of what retail competition
10 was -- retail competitive effects might be, but I was just trying to make these as
11 general points which I think hadn't really been considered in my view sufficiently by
12 Ofcom.

13 Q. If you could turn to Mr Godfrey's evidence, he comments on these.

14 A. Yes.

15 Q. It's page 46. You see at paragraph 154 the indication that 30 per cent of homes with
16 a landline purchased that on an unbundled basis, that is to say without other services
17 like broadband or television. So quite a substantial proportion of the population are
18 still voice only customers?

19 A. That's right, yes.

20 Q. You address this evidence in paragraph 29 of your second report. So you have some
21 quotations here from Ofcom's 2015 communications market report that:

22 "Voice only customers are less attractive to providers ..."

23 That's halfway down the paragraph there?

24 A. Yes.

1 Q. ... and are not being prioritised. "Many operators appear to be prioritising winning
2 new dual play ..."

3 In the next paragraph you note that these voice only customers have a comparatively
4 low awareness of alternative telecommunications providers. So those points go to
5 show that the competition in this segment is relatively weak?

6 A. Yes, that's not the focus of competition, I think that's right.

7 Q. But wouldn't that be a reason to be more and not less concerned about any
8 disincentives to compete for the business of those voice only customers?

9 A. We have two issues. Again it comes down to this targeting question, doesn't it, that
10 we were discussing earlier.

11 Q. Yes.

12 A. First of all, it's: what's the general impact on the market in terms of competition? And
13 there we have to look at what's the dominant mode of competition, and therefore
14 roughly about three quarters of customers, for higher value customers, we see
15 bundling going on. It's clearly the case that APCCs on incoming traffic are
16 an element of assessing the profitability of that customer in general but that's a tiny
17 proportion of the picture in terms of the revenue.

18 Q. We are on the --

19 A. For the 75 per cent.

20 Q. -- voice only at the moment, 70 per cent.

21 A. 70 per cent.

22 Q. So on the 30 per cent?

23 A. If we go down to the 30 per cent, then out of that then clearly there is a larger -- the
24 APCC element is now larger within the revenues for those customers. It's a larger

1 proportion.

2 **Q.** And proportionately larger?

3 **A.** It would have a proportionately larger effect. There's still the materiality question
4 around how big that proportion is but it's a different proportion.

5 **Q.** I understand, yes. So lower porting charges, all else equal, will increase the
6 incentives to compete for ported customers in the low value segment?

7 **A.** Yes, that's right.

8 **Q.** And that effect will be greater than the incentive effect in relation to bundled
9 customers?

10 **A.** Yes. We can even -- if you imagined a notional customer who only receives
11 incoming calls, for example, then it would be even more important for that particular
12 type of customer. So I think we can always find customer segments for whom the
13 APCCs will have a larger effect on the incentives to compete for that customer by
14 taking away other sources of revenue other than the incoming calls.

15 **Q.** Yes.

16 **A.** So I think that's clear.

17 **Q.** Okay, very good. And you are not suggesting that there aren't incentive effects in
18 relation to the bundled customers, you are simply suggesting that they are likely to be
19 smaller, the magnitude will be less because of the overall --

20 **A.** Small is probably -- even small is probably overstating it. I had a quick look this
21 morning at the latest Ofcom communications and I think the average expenditure per
22 person was something in excess of £100 a month now. So if you really believe that
23 there are increasingly large bundles that might be playing for the whole of that £100,
24 then APCCs become absolutely tiny, insignificant and negligible components of that

1 profitability for that kind of customer.

2 **Q.** For a proportion of the 70 per cent, given there are different bundles. There are dual
3 play, economy dual play bundles?

4 **A.** I think to do it properly what you need to do is really just fragment the market into
5 different -- I do not know if "segments" is quite the right word. But you would have
6 to look at those different parts of the market and say, well, how important is APCCs
7 within competing for that segment? And then you would have to think about what's
8 the impact of that in retail competition overall?

9 The problem is we do not have anything like that from Ofcom to make that kind of
10 assessment really.

11 **Q.** If you could pick up your first report and turn to paragraph 82 there's another point on
12 retail effects. Let's make sure I have understood.

13 **THE CHAIRMAN:** Mr Holmes, could you choose a moment that's suitable.

14 **MR HOLMES:** This would be as good as any.

15 **THE CHAIRMAN:** Let's do that.

16 **(11.42 am)**

17 (A short break)

18 **(11.56 am)**

19 **MR HOLMES:** Dr Maldoom, I have one more point of clarification in relation to your
20 evidence on retail effects.

21 **A.** Yes.

22 **Q.** That concerns at paragraph 82 of your first report, it begins at 82. You set out there
23 a statement by Ofcom that LRIC has been used in other cases where wholesale
24 charges have a direct impact on switching costs. You draw a distinction at

1 paragraph 83 between one-off migration charges ongoing charges such as the
2 APCCs. You accept I think that a CP's incentives to acquire a customer will depend
3 on the expected lifetime profitability of a customer?

4 **A.** Yes.

5 **Q.** Your point about one-off migration charges is that they may have particular and
6 additional effects because of the risk of further switching by the customer?

7 **A.** I am not sure what you mean by "additional", but I think one should be particularly
8 concerned about switching costs because they are obviously a direct impediment to
9 competition and they occur potentially in all cases when people move back and forth,
10 so it may be something that is particularly concerning.

11 **Q.** Can I paraphrase the point that I took from your statement and you can tell me if it's
12 right. The reason why an upfront charge might have a particular disincentive effect
13 is because there will be a risk of a customer moving subsequently before that upfront
14 charge has been fully amortised and recovered, is that right?

15 **A.** That's right, yes. Sorry, I could have probably explained in a little more clarity here
16 as to what was going on. But I think this is a fairly well understood economic
17 principle that once you have a situation of risk, then where you have these costs of
18 switching they can have a disproportionately large effect.

19 I think the example you give actual illustrates the point. So if there's a risk of losing
20 the customer again, essentially if you think of it as a payback period, you have to
21 have held onto them for a certain period to pay for that migration charge.

22 **Q.** Yes.

23 **A.** So therefore in a situation of risk, or even if you imagine a very dynamic competitive
24 market, even small switching costs can have a disproportionately large impact.

1 Q. So subject to contractual protections like upfront retail payments or minimum
2 subscription, there's an added risk?

3 A. Exactly. Exactly.

4 Q. But laying aside that, which we can agree about, can we also agree that ongoing
5 charges like APCCs will nonetheless affect incentives to win customers?

6 A. Yes, I think it's all to do with these differentials and the fact that you might have
7 to -- because obviously if I win a customer, I have to pay something to serve that
8 customer. So we are not concerned about the fact that a provider has to pay for
9 wholesale services. I think what we are concerned about is to what extent attracting
10 a customer in and acquiring that customer over a porting route is subject to a cost
11 disadvantage.

12 Q. Exactly. A specific differential as a result of porting charges which are payable on
13 ported customers but not on non-ported customers.

14 Let me try this out on you. You could see ongoing charges as carrying their own
15 specific disincentive effects by comparison with upfront charges. Because unlike
16 an upfront charge, one cannot know for sure at the outset what their value will be
17 over the lifetime of a customer. I say "lifetime", I use that rather macabre phrase, I
18 mean the period for which the customer will remain with the provider.

19 A. I do not think that quite works because obviously these ongoing charges, they
20 contribute to determining what the margin is on that customer, okay? When I cease
21 to have a relationship with that customer, the costs stop as well as the revenues, so
22 it's really a margins question. It's a different issue to the switching costs issue.

23 Q. Just to explore that. You accepted that a CP's incentives to acquire a customer will
24 depend on the expected lifetime profitability of the customer. So they will do a kind

- 1 of NPV analysis, what they can expect to get in and what they can expect to pay out
2 over the lifetime of the customer?
- 3 **A.** Yes.
- 4 **Q.** And that will decide how much they are prepared to spend in getting the customer,
5 what terms they are prepared to offer?
- 6 **A.** Yes.
- 7 **Q.** If you don't know for sure how long the customer will stay with you, and you therefore
8 face ongoing charges of an indeterminate amount, that adds an element of risk,
9 doesn't it?
- 10 **A.** No, I do not think it does add any risk. The argument applies perfectly well to
11 costs -- if I have to incur an upfront cost to acquire the customer, clearly I do need to
12 care about how long I will then get a margin from that customer to then pay back
13 that. I do not see that the fact that there is a cost within that margin, the margin is
14 obviously the difference between revenue and cost, the fact that there is a cost
15 component in it doesn't in itself create any uncertainty.
- 16 **Q.** So for each additional month that they remain they will be incurring the costs and they
17 will be earning the revenues and the determining factor will be --
- 18 **A.** They go hand-in-hand. If I lose one, I lose the other.
- 19 **Q.** Very well. But we can at least agree that the differential will have incentive effects,
20 albeit not the additional incentive effects associated with an upfront charge?
- 21 **A.** Okay, the differential, yes, I think that's right. The fact that there is an impact for
22 that, yes, on --
- 23 **Q.** The specific cost?
- 24 **A.** In the case of porting, that's right.

1 **Q.** Very good. That's all I want to ask you about the effect on retail competition.

2 I want now, before turning to distortions on direct routing, which I will come to, can

3 I just talk first about the comparative efficiency of LRIC versus LRIC+ pricing.

4 I think there's some considerable common ground but I wanted to just --

5 **A.** There's a lot of common ground and some fairly fundamental disagreements is how

6 I would characterise it.

7 **Q.** In the second report, paragraph 64, you set out a passage from Mr Godfrey's statement

8 with which you say that you largely agree?

9 **A.** Yes, that's right.

10 **Q.** And as a general proposition, I take it that you would agree that pricing at marginal

11 cost is typically considered first best in the sense of maximising allocative

12 efficiency?

13 **A.** Yes. Again, I think one can't completely take timeframe out of this unfortunately.

14 So you could say once the network's there, people should use it, and the short run

15 marginal cost is zero, so let's let everybody on there for free. So in that sense that is

16 efficient in a very short run sense, but nobody's going to build a network on that

17 basis.

18 **Q.** Looking at allocative efficiency for a moment?

19 **A.** It is allocatively efficient, arguably.

20 **Q.** Indeed. But marginal cost is typically first best?

21 **A.** Yes. There's this timeframe issue which needs to be looked at, so usually the idea is

22 to take a long period when you look at investments as being essentially flexible.

23 But that's right, a marginal cost pricing is generally seen as first best. But one has to

24 define what one means as first best.

1 **PROFESSOR REID:** Thank you. If I could just pitch a question at that point.

2 Arguably where we are dealing with small numbers competition, where they may be
3 remaining distortions for example through innovation, the pure LRIC may not be the
4 best welfare reference point, so we're really in a second best type of world, and there
5 may be an argument for a plus component, even without a common cost type of
6 argument of being shared. I just wanted to give that idea a little bit of discussion.

7 **A.** Yes.

8 **PROFESSOR REID:** Because I feel there may be a variety of reasons for one wanting
9 to have a LRIC+ type of formulation. Is that line of argument something that has
10 traction with you as a regulatory economist?

11 **A.** It does. There has obviously been a lot of debate about this. The whole question of
12 innovation markets and how you provide correct dynamic investments -- correct
13 dynamic incentives is quite a complex issue.

14 In the telecoms regulatory context those issues are not really explored in any great
15 significance. The primary issue is usually around common cost recovery and
16 ensuring that the regulated party actually gets its common costs back somewhere.
17 The debate, one might say unfortunately, I think if one's interested in the economics
18 of this the debate tends to be limited to that. But I would agree there are much
19 broader issues around dynamic efficiency and encouraging innovation, as you say,
20 bringing in market developments which are also relevant.

21 There is actually strangely a flavour of that here in the opening remarks I made
22 around the fact that this is a declining technology, that TDM now has potentially
23 quite a short shelf life and will be replaced. So in this context there is also this
24 question of migration incentives. It's not as broad as the question about innovation

1 in market structure, progress in market structure and so on, but I think there's
2 an element of that, of those questions coming in through this migration question.

3 **PROFESSOR REID:** I think that's right. You map out quite clearly if you go to BT1,
4 tab 5, paragraph 142, where there you say that LRIC+ is often considered to be
5 a regulatory surrogate for competitive pricing. That obviously would tie in with
6 contestable market theory in paragraph 143 and following.

7 My concern about that I would guess is entirely this issue of innovation and whether
8 the equilibrium model captures what, for example, Gamma and Vodafone have led in
9 evidence, which are concerns about innovation and going to new technologies.

10 So the technical basis of standard LRIC+ is often considered to be a regulatory
11 surrogate for competitive pricing. Is that indeed the ideal yardstick for competitive
12 pricing given the rate of technological change that is now going on in the telecoms
13 market?

14 **A.** Okay, I very much agree with your sentiment here. When I wrote this I actually had a
15 much more limited view of very much taking the conventional regulatory structure
16 as a given. And to be honest, these issues, as I said earlier, they have not really had
17 that much traction apart from specific cases where there has been an identified
18 migration possibility, okay?

19 Obviously if you are concerned about innovation you might say there are all kind of
20 unknown migration possibilities out there which we should also be thinking about
21 and why are we foreclosing those potentially by regulating at a point where there
22 aren't incentives to develop into other unknown ways?

23 I think that hasn't had that much traction because obviously it's a bit difficult to then
24 query that and see whether that argument is substantial or not. In the case where

1 there is an identified migration option, clearly it's very much the same issues, but
2 there you have an identified possibility of migration and you have the question about
3 ensuring an efficient timescale for migration to that new possibility.

4 In terms of this question about LRIC+ and the kind of standard regulatory dogma,
5 that doesn't enter that regulatory dogma; that is very much based on contestable
6 market theory. So contestable market theory obviously deals with these issues
7 about common costs and when they get allocated. Potentially that gives you
8 a system of what you might say are floors and ceilings on competitive prices, it gives
9 you a set of constraints that a reasonable set of equilibrium competitive prices should
10 satisfy.

11 In practice that's very difficult to use as a regulatory construct, although there have
12 been attempts to try and do that directly through various combinatorial cost test. So
13 we end up with LRIC+ as a kind of distillation of all that economic theory down to
14 something that might actually be practicable.

15 But it starts from a basis, a theoretical basis that is static in nature and it does not
16 have innovation or dynamic development possibilities within it, whether those are to
17 do with technology or market development even. Then you have to sort of add
18 something on extra.

19 So I think you could even say if I am very concerned about making sure that we get
20 rid of all of this indirect routing and move over to direct routing and IP based
21 networks, even LRIC+ might not be the right answer, it might be higher than that
22 potentially.

23 **PROFESSOR REID:** So the justification of it really is just a functional one about
24 decision-making of the models of this sort at this point in time --

1 A. Yes. I think -- I mentioned this ISDN30 case which is quite interesting in terms of
2 being similar in a way. It's a broadly similar kind of switching basis for the
3 technology, so it's going out for very similar reasons to the TDM switches here. But
4 again that was something where even LRIC+ is not necessarily enough to create
5 migration incentives that are efficient because there are obviously benefits
6 associated with that innovation and there are cost-saving benefits, but also there are
7 big consumer surplus benefits. Because if there's a timing question about when new
8 technology's adopted, those are associated potentially with a large amount of benefit
9 that may not be captured by suppliers, so therefore a regulator may well need to take
10 that into account.

11 The ISDN30 debate was not that broad, it was more just limited to the question of
12 making sure we do not get people using something that has no future, and certainly
13 not incurring costs from doing that. But the principle, the more general principle of
14 taking account of dynamic effects is there.

15 **PROFESSOR REID:** Good. Thank you. I think that's a helpful and illuminating set
16 of comments. Considering therefore that the static framework does have relevance
17 to a specific task to be performed in a regulatory setting, when we come to EPMU,
18 the equi-proportionate mark-up, one thing that I noticed in your exposition on that,
19 that's in paragraph 144, is that you refer specifically to the information structure.
20 I wondered whether or not, because there has been a lot of discussion about the
21 supply of information, the quality of information, and indeed confusion about
22 information, I wonder what your take is on the importance of timely and relevant
23 information being available to all players if one does want to go down the LRIC+
24 type of route.

1 A. Okay.

2 **PROFESSOR REID:** Just to quote the sentence from that paragraph 144:

3 "Whilst this might not lead to a fully efficient structure of mark-ups
4 [I think we agree on that], regulators typically lack sufficient information
5 to structure regulated prices more finely than this."

6 So that's talking a little bit about information failure. What I am asking,
7 interrogating on, is: is there scope for the provision of more timely, more accurate
8 and more relevant information in that fine-tuning that you refer to?

9 A. Right. I think there are two different issues, first of all. The point -- I am very happy
10 to answer your question, but it's not really connected with what I am saying in
11 paragraph 144.

12 In 144 I am concerned particularly with what you might call asymmetry of
13 information particularly, and the fact that the regulator doesn't know very much
14 about the demand for the services that the regulated firm is providing. So that
15 means that there are lots of theoretically attractive concepts for trying to recover
16 common costs in an efficient manner which are not practical to implement because
17 the regulator does not have the information available to structure the recovery of
18 common costs in a fully efficient manner. And for that reason we have a real world
19 solution which is basically chop it up and put in an equal bit everywhere, which is
20 EPMU.

21 The second part of your question was about the fact that it does seem that
22 information has been important here, there has been a lot of discussion around who
23 knows what and so on. I think that's a slightly different question which is if we
24 think about other CPs, about how they are trying to organise their network, then

1 obviously information is relevant in terms of efficiency, and also it's relevant to
2 competition here at the wholesale level. We have heard a few -- this is more of
3 a factual point, but in terms of the principles then information is potentially relevant
4 to the degree to which people could self supply wholesale services rather than buy
5 things from BT, for example, we've heard that.

6 So I think it would be a fair point to say that information is relevant to the assessment
7 of what degree of competition there might be here. So I think if there were more
8 information, you might well say wholesale competition has the possibility of being
9 more effective than it currently is. I think that might not be an unreasonable
10 theoretical position. There's still -- I can imagine lots of people probably who have
11 views here about what the kind actual real world situation might be and how relevant
12 that is, but I think as a proposition that's not an unreasonable one.

13 But I think it then opens the question of, well, that this LRIC versus LRIC+ choice
14 was rather narrow. From what we have heard there are possibly some informational
15 remedies that might have been relevant.

16 **PROFESSOR REID:** Yes.

17 **A.** The point which I consider important as well is that also there's this whole RCP versus
18 OCP pays question, which again the way Ofcom's analysis is conducted is very much
19 on an RCP pays basis. But then again, although this is jumping over to retail
20 competitive effect, there's a question there about whether an OCP pays regime would
21 be a way of dealing with any problem that you thought was there rather than
22 necessarily moving to LRIC rather than LRIC+.

23 Once you open this box and say: are there other things here which could be done?

24 We try and maintain incentives at the wholesale level for people to organise things

1 efficiently, which would mean APCCs would have to be sufficient -- they can't be
2 pulled down too much -- or you could then look at what problems might there be? If
3 there's a retail problem --

4 **PROFESSOR REID:** That I think may be moving us into new territory.

5 **A.** Exactly. And there are other things that you could do to take those away, and then the
6 information question may well be one of those.

7 **PROFESSOR REID:** Yes. Thank you for that clarification. My apologies for
8 intervening.

9 **MR HOLMES:** Not at all.

10 **PROFESSOR REID:** We looked at paragraphs surrounding these but not these ones in
11 particular. This is why we have nailed these ones at this point.

12 **MR HOLMES:** That was very helpful. I will keep I think within a static framework, if
13 I may. These questions are probably disappointingly basic to philosopher kings.
14 But I want to make sure that I understand the move to LRIC as you describe it in
15 paragraph 65 of your second report.

16 **A.** Sorry, I am looking in the wrong report.

17 **Q.** Page 27 of the second one, BT6.

18 **A.** Yes.

19 **Q.** You made the point that the notion of first best needs further expansion and you make
20 there the point you touched upon about timescales and you suggest that efficient,
21 absolutely efficient consumption decisions would depend upon a short run measure
22 on the basis that -- in terms of allocative efficiency, because it could mean that
23 people consumed up to the point at which it was no longer profitable to make
24 an additional unit?

- 1 A. Absolutely, yes, that's right.
- 2 Q. It's a statement of the obvious. You are not yourself suggesting that short run
3 marginal costs would be an appropriate measure to --
- 4 A. All I am saying is one shouldn't take LRIC as a dogma. One should think about what
5 it does, and think that efficiency is to do with certain defined circumstances, and if
6 we take a broader view, if we change some of the assumptions, like many economic
7 theories it goes horribly wrong. So it's for a defined set of circumstances which we
8 might call the first best and we might say it's static in view as well.
- 9 Q. Yes.
- 10 A. Yes.
- 11 Q. And by extending the length of time that you consider, you will affect short run costs,
12 if I understand rightly, in two ways. Firstly, there will be costs that become variable
13 over time but which are fixed in the short run?
- 14 A. Correct, yes.
- 15 Q. And secondly, you will take account of the costs of removing the increment that
16 reflects an economy of scale but which wouldn't be captured in a smaller unit of
17 output?
- 18 A. That's not a timing issue, that's an increment definition issue.
- 19 Q. Yes.
- 20 A. It might have a timing element. You might not be able to -- the notion of turning off
21 a service in a very short run doesn't make any sense, so one would tend to think about
22 what's the cost saving from turning up an entire cost service over the long run.
- 23 Q. And the LRIC expands both the timescale and the scale of the --
- 24 A. That's right, so we're always talking about whole service increments in the regulatory

1 notion of LRIC.

2 **Q.** You are aware of course that Ofcom rejected TalkTalk's suggestion that short run
3 marginal costs would be appropriate in this case?

4 **A.** Yes.

5 **Q.** At paragraph 67 you make the point that lowering the price of a particular service to
6 LRIC will have an implicit cost because it will mean that more common costs need
7 to be recovered from another service. This is just a standard dead-weight loss?

8 **A.** Yes, that's right. It goes a little bit to this discussion that we were having earlier about
9 why LRIC+ is used. The costs need to be recovered, and again this goes back to
10 fairly basic economic theory that if you stick all of those costs just on one service,
11 let's take an extreme example, nobody will buy that service, okay? So in general to
12 minimise those dead-weight losses, you want to spread evenly. If you had lots of
13 information about the relative demand characteristics of different services you might
14 try and tweak it. However, we do not have that information so we can't tweak it, so
15 we end up with an EPMU style of LRIC which then implies equal spreading.

16 **Q.** So it's because of this dead-weight loss, if I understand you rightly, a particular reason
17 is needed beyond the increase in the consumption of the service that you are reducing
18 the price of?

19 **A.** That's right. And I think this is a kind of -- I have put some quotes in from Ofcom.
20 I think Ofcom thinks broadly the same about this, that actually we should be looking
21 at trying to spread common cost recovery as far as possible. There may be specific
22 reasons for them not wanting cost recovery on a particular product. It has to be
23 a specific reason.

24 **Q.** I think you describe it as a sufficient countervailing benefit?

1 A. A sufficient countervailing benefit, yes.

2 Q. As to the benefits, we discussed your view of whether there would be any material
3 increase in competitiveness from pricing conveyance charges at LRIC. We debated
4 magnitude. But you would accept in principle that increased retail competition
5 might justify setting a wholesale price at LRIC?

6 A. It might. If you have got strong effects on retail competition, why set it at LRIC?
7 Why not at zero or even negative or --

8 Q. One of the reasons for LRIC is to ensure that more of the costs, the longer run costs are
9 caught?

10 A. Well, I mean it is a balance. I think this is my ultimate conclusion. You have these
11 retail effects on one hand, and you have got various wholesale effects, of which
12 there's a large rag bag of them, and we in some sense try to balance that. The
13 reason -- lots of Ofcom's logic you could re-read and say why doesn't that suggest the
14 TalkTalk position of short run margin costs or even zero? I think the reason is
15 because we are worried about these other potential wholesale impacts.

16 Q. For example, the Tribunal saw, we can go there if you like, in Ofcom's decision not to
17 go all the way to short run, so they had specific reasons for going to LRIC,
18 competition effects, but they didn't go further because they were aware of incentives
19 to invest.

20 As to the disadvantages, the dead-weight loss. Ofcom did attempt to assess, at least
21 in broad terms, the likely magnitude of the concern, didn't they?

22 A. Yes, as a number which I think is confidential.

23 Q. It is confidential so we need to be absolutely cautious. Let's turn it up so we all know
24 it even if we can't speak it. BT1, tab 8. Paragraph 4.76. And in fact the number is

1 redacted from the version I have but I remember it.

2 You will note at the end of paragraph you have got the figure specified towards the
3 end of the paragraph, an explanatory footnote. As we discussed, the figure relates
4 to the entire value of the APCC so we need to take a proportionately smaller impact
5 to understand the move to LRIC from a higher than LRIC level.

6 You will note Ofcom's judgment that costs at the end of the paragraph of that
7 magnitude would not have a material impact on BT's competitive position.

8 **A.** On BT's competitive position? Yes, okay.

9 **Q.** You have not taken issue, I think, with that figure but with Ofcom's judgment that it
10 would be unlikely to affect BT's position?

11 **A.** I do not think we were just talking about BT's competitive position. I think the
12 point's slightly different which is it is to do with the structure of common costs
13 recovery across the different products that BT operates. That's not necessarily a
14 competitive issue, that's an efficiency issue, an allocative efficiency issue.

15 **Q.** But it could, if it were to spread it at the retail level, result in a very modest increase by
16 comparison with the annual line rental that --

17 **A.** Sure, absolutely.

18 **Q.** Could I also ask you to consider what would happen in a world of direct routing which
19 is something that BT would like to see. In that world, I am right that none of the
20 costs which are currently recovered through porting conveyance charges would be
21 levied?

22 **A.** If everybody goes through direct routing that's right I think there wouldn't be any
23 costs. The originator would pay for whatever routing was required to get to the
24 terminator --

1 Q. So the common cost element of BT's operations that are recovered through the APCCs
2 would have to be recovered elsewhere?

3 A. Yes, I suppose that's correct. There would presumably still be transit services that
4 might be required, but BT might be doing less of that. BT might be providing more
5 transit so that might be recovering common costs instead.

6 Q. That's on the basis of your assumption that small operators might effectively follow
7 a similar kind of route?

8 A. No, no, there's no particular assumption. I am just -- all I am saying is that BT
9 provides quite a lot, and other transit providers -- so there would be a shifting away
10 from these porting conveyance products, there would be more transit for people who
11 are not fully interconnected.

12 Q. The scale of that --

13 A. That would be --

14 Q. -- would depend on the extent to which non-ported traffic generally requires transit?

15 A. Well, that depends on what the patterns of interconnection are. We know that not
16 everybody's fully interconnected.

17 Q. We do. We know there's deep interconnection amongst the big operators because
18 that's what the evidence tells us. But you do not attach any weight to this inability to
19 recover those common costs as a drawback of moving to direct routing?

20 A. I think this effect -- in the case -- just to be absolutely clear, I think in the case of
21 APCCs this issue is relatively small. I think the point is more to do with the
22 principle of it, because why have we singled out this particular service for not
23 recovering common costs? Because there has to be -- what I am suggesting is
24 there's a burden to be overcome in terms of showing that there is a benefit.

1 Otherwise if one were to establish a principle here and then apply this to other
2 services, we very rapidly end up with a situation where you have things going down
3 to LRIC and the whole edifice of trying to spread common costs thinly has been
4 taken down brick by brick.

5 **Q.** And we can agree that Ofcom considered there was a specific benefit which you
6 accept is a relevant benefit --

7 **A.** I think it's relevant but --

8 **Q.** The debate between us is as to the magnitude of the benefit --

9 **A.** And the other countervailing factors.

10 **Q.** Let's turn to one of those countervailing factors or one set of countervailing factors
11 which are alleged distortions in wholesale markets and we should see how you put
12 that in your first report at paragraph 146. The three broad issues are: we discussed
13 retail competition. The remaining ones are incentives to switch to direct routing and
14 the potential of pricing of porting conveyance at particular levels to give rise to
15 perverse incentives or distortions?

16 **A.** Yes, that's right.

17 **Q.** So beginning with the latter, the perverse incentives or distortions, if you could turn
18 forward to paragraph 159 you set out a list of potential distorted behaviours?

19 **A.** Yes.

20 **Q.** The first is point (a) and the suggestion is that CPs might try to arbitrage lower prices
21 for conveyance of ported traffic. And again at the risk of stating the obvious, you do
22 not mean to suggest a CP could somehow send non-ported traffic through BT's
23 network at porting conveyance rates?

24 **A.** No, I do not. No, no.

- 1 Q. It flows from BT to the CP site?
- 2 A. Yes. So the scenario would be I have got general network capacity that can be ported
3 and non-ported traffic. That starts to fill up. I can get a cheap deal by pushing the
4 ported traffic off on this route and that avoids me having to make an incremental
5 investment on that link, yes.
- 6 Q. You say that there's evidence that this is already happening. You make that point by
7 reference to 5.39, the second bullet of the determination.
- 8 A. Yes.
- 9 Q. It's at tab 2 in the same bundle at page 53. I hope that the second bullet contains some
10 yellow text in your version indicating a confidential matter?
- 11 A. Yes.
- 12 Q. Good. I think it's that yellow text which you say is the evidence of arbitrage, is that
13 right?
- 14 A. I think it suggests that that could be happening. We clearly can't know for certain but
15 that is maybe a concern, I would say. All I am suggesting is there may be other
16 reasons. But I think we can see there's some consistency with that behaviour and
17 there being an incentive for arbitrage.
- 18 Q. Just to test the possible explanations for that behaviour, you heard the evidence of
19 Mr Morden that BT requires CPs to segregate ported traffic using a separate link?
- 20 A. From the -- yes.
- 21 Q. So they couldn't use their existing links for other traffic for that purpose, for the
22 purpose of collecting the ported traffic?
- 23 A. Yes, that's right, from the links of the local exchange-- that's right.
- 24 Q. So the fact that they have an existing link doesn't show necessarily that they are

1 avoiding picking up ported traffic which they could pick up. The commercial
2 viability will depend on whether a separate link would stand on its own feet?

3 **A.** I think I had more in mind inter-tandem traffic when making this comment. The
4 argument does still potentially apply to local exchange but I think it's clearer in the
5 case of traffic which is in the core network level.

6 **Q.** I understand. We can come to tandem in a moment. I was just dealing with the
7 conclusions that you have drawn from this text and you will note the references to
8 interconnection at DLEs, that's the local layer, not the tandem layer?

9 **A.** Indeed, yes.

10 **Q.** So we can discuss tandems, but this evidence isn't evidence of arbitrage at the tandem
11 layer?

12 **A.** Not at the tandem layer, no, that's right.

13 **Q.** And in any event, this evidence relates to a period when APCCs had not been capped
14 at LRIC?

15 **A.** Yes, that's right, isn't it?

16 **Q.** So at that time arbitrage wouldn't have been possible?

17 **A.** That's correct. That's right. What it doesn't do is inform you about the LRIC versus
18 LRIC+ question at that time, that is true, yes.

19 **Q.** Were you in court for the evidence of Mr Rosbotham, the Vodafone witness?

20 **A.** Yes.

21 **Q.** He said that he would have incentives to use his existing links at the tandem layer
22 rather than pay BT's APCCs even capped at LRIC?

23 **A.** Yes. I think the issue I have with this is really I do not think you can take any
24 particular example of behaviour as being very informative here. Just because

1 somebody wouldn't respond to an incentive that's put before them doesn't really
2 address the question of whether the regulator should have created that incentive in
3 the first place because --

4 **Q.** I understand the distinction between behaviour and incentives. But I think his
5 evidence went rather to the incentives that he faced and the comparison in the level
6 of costs that he would be weighing up between, on the one hand, the LRIC of
7 purchasing from BT the APCCs, and on the other hand self supply in relation to
8 existing fibre links to the tandem where the marginal -- he would face basically the
9 marginal cost of self supply given that the fibre is already in the ground and that the
10 costs are sunk. There's no economic reason to doubt that evidence?

11 **A.** No, but what I have taken from that evidence, and also I mean there are comments
12 from Gamma, in Mr Farmer's statement as well. There are -- it seems to me there's
13 a comparison being struck between either using APCCs or self supply in this case, so
14 there is a trade off being struck.

15 **Q.** Yes.

16 **A.** For some people it may be that that's not close to balancing at this point in time. But
17 I just think that that's not the relevant question. The relevant question is about how
18 the incentives are modified, not actually whether the behaviour changes because we
19 do not know what might happen in the future. We do not know what other CPs
20 might do.

21 **Q.** But arbitrage depends on a balance of incentives?

22 **A.** Yes.

23 **Q.** And the evidence of Mr Rosbotham was that on the other side of the balance from the
24 LRIC price that he faces for APCCs is a lower measure of cost than marginal cost

1 which he described I think as essentially zero for the reason you gave about how
2 telecoms networks work.

3 **A.** I think in the short run that may well be the case. If he has got capacity that he can
4 just use, why would he use BT?

5 **Q.** So it turns on capacity?

6 **A.** In that example there would be a capacity issue. That doesn't tell us about whether
7 there would be spare capacity in that scenario and you would be very happy to fill
8 that up rather than pay any money to BT regardless of what price, however cheap
9 APCCs would be.

10 **Q.** Indeed.

11 **A.** So the broader case would be to look at the long term and say what happens when we
12 still have a lot of TDM traffic floating around, people are not wanting to invest
13 particularly in any new capacity in that regard, so I have an option between making
14 an expensive investment in capacity versus just bumping off ported traffic onto BT.
15 That is a relevant consideration and it is relevant particularly because we have this
16 migration path issue to consider as well. Because otherwise what we are essentially
17 doing is if we create an incentive to shift traffic onto BT for these reasons, then that
18 obviously has impacts on migration possibilities.

19 **Q.** I will come to that if I may under a separate head.

20 Your third alleged distortion, sorry, I do not know if I picked up -- I do not think
21 I picked up your second, I am sorry.

22 Your second alleged distortion is at paragraph 159(b) and that is the potential of
23 splitting ported and non-ported traffic to erode economies of scale by fragmenting
24 traffic over different links when it could be aggregated.

1 A. Mm-hm.

2 Q. But leaving the ported calls on BT's network for longer would allow BT to exploit
3 economies of scale?

4 A. Yes, that's right.

5 Q. It's for the RCP to decide which is more cost effective, leaving on BT's network or
6 moving to it's own --

7 A. Again the perspective here is a regulatory one. Why would we want to create
8 a situation that led to additional costs? It doesn't really matter who incurs them. If
9 we had a system as a whole which is splitting out traffic just to arbitrage it, which
10 then leads to we haven't got traffic being aggregated on routes that could be, that's an
11 inefficiency regardless of who the cost impact falls on.

12 Q. But the RCP, when deciding whether to split the traffic, will internalise any loss of
13 economies on scale on its links when deciding whether to split traffic?

14 A. Yes, it will do. It doesn't mean it has an efficiency incentive to do that. It will
15 internalise the cost, that's right.

16 Q. And BT's contractual arrangements require at the local layer for traffic to be split,
17 ported and non-ported?

18 A. I think segregated. We need to be a little bit careful here. They are still carried on a
19 common fibre but there has to be a separation of capacity as we heard earlier.

20 Q. On separate circuits?

21 A. When we say "circuit", we need to be clear. Physically we have many circuits on one
22 fibre so there is still aggregation -- you have a number of issues going on here.
23 There are trunking efficiencies where we push traffic together and then because
24 peaks do not coincide then we are making better use of what would otherwise be

1 spare capacity on two links. That is an issue at the DLE level which is what we have
2 heard a lot about. Then the other issue is to do with just putting many links on one
3 physical infrastructure which then is a scale economy issue. So even though this
4 porting traffic at the local exchange level might be segregated, it's still on a fibre, and
5 that provides all other kinds of services to --

6 **Q.** Indeed. But one of the costs of conveyance of carrying the traffic is the circuit, the
7 establishment of separate circuit capacity on the fibre?

8 **A.** That's the cost to the segregation.

9 **Q.** Yes, indeed.

10 **A.** There is a cost element.

11 **Q.** And that segregation removes potential economies of scale?

12 **A.** Okay, so some economies of scale will already occur because we put -- you know,
13 a two megabit channel can go on the fibre and is used with other circuits which could
14 be used for traffic that the carrier could be bringing into the exchange. That's in
15 principle possible. So there are scale economies here: we have not got separate
16 fibres going into each of these things, we have not got separate trenches being dug
17 for them all. They're all going down a common infrastructure.

18 **Q.** I understand that.

19 **A.** What has happened is obviously the trunking efficiency that could happen by pushing
20 traffic together, this ported traffic, is lost because of this whole issue of ownership
21 and who is responsible for it. So it's kept in a silo --

22 **Q.** Leaving aside the evidence about the reasons for this practice which I think can be
23 addressed in submissions based on the factual evidence.

24 **A.** Sure.

- 1 **Q.** You accept that there is a loss of economy?
- 2 **A.** Yes. So you get some scale economies but not the last tiny little bit which is to do
3 with trunking efficiency, and that would be really an issue on low traffic routes
4 because it's to do with better utilisation of the capacity that's there for statistical
5 reasons. So on thick routes it's not really going to be an issue, but when there's low
6 traffic you do not get that last bit of efficiency.
- 7 **Q.** You would have to invest in a separate circuit to be clear. Whether that is a big
8 economy or a little economy for the proportion of ported traffic at a given switch
9 would obviously vary from switch to switch, won't it?
- 10 **A.** No, I think that's all fine and I think there's no disagreement. My point is purely that,
11 yes, we get some scale economies but not all of them because of the segregation
12 issue.
- 13 **Q.** But the scale economies you're talking about would be realised whether the traffic
14 went on BT's network or whether it went on the RCP's network. Either of them
15 would aggregate on the same fibre?
- 16 **A.** No, okay. We need to be careful here. I haven't distinguished between this DLE
17 issue, where there is an issue about the traffic being kept separate, and what is
18 happening at the tandem layer. Clearly, at the tandem layer, if this arbitrage were to
19 occur we have being carried on different networks that could have been carried on
20 the same network. So who benefits and who loses from that obviously depends on
21 detail but the principle is that traffic is not being carried on the common
22 infrastructure when it could've been.
- 23 **Q.** It's being carried on one common infrastructure rather than another, isn't it?
- 24 **A.** Well the BT TDM network wouldn't be a common infrastructure if there's not very

1 much else using it, would there?

2 **Q.** Well, we can come to that subsequently. The third alleged distortion at
3 paragraph 159(c) is your suggestion that an RCP could have an incentive to port
4 numbers rather than issue a new number?

5 **A.** Yes.

6 **Q.** Just to be clear, that's accepting that charges at LRIC will incentivise porting as
7 compared with charges at LRIC+?

8 **A.** Yes, there is a difference between the two situations. I think, the reason I put it down
9 as an example, I don't think there's that much practical significance, but if you create
10 situation where you've got differences in the incentives to acquire a customer
11 according to simply what number you give them, that's an oddity which is again the
12 result of the fact that there is distortion going on somewhere.

13 **Q.** But the distortion, to be clear, is the APCCs imposing costs on the acquisition of a
14 ported customer?

15 **A.** Well, they may be another reason why there may be differences between getting
16 ported and non-porting -- these different routes in getting customers in according to
17 what their number might be. But I'm just pointing to the fact that there may be other
18 reasons for that, as well.

19 **Q.** I had taken your point to be that if you reduce the costs of acquiring a ported customer
20 that will incentivise the acquisition of a ported customer; is there a different point
21 being made here?

22 **A.** No, I don't think there is, no.

23 **Q.** That's of course what the retail competition concern in this case is all about, the
24 incentives to acquire a ported customer.

1 A. Yes, there's a difference between incentives for porting, we agreed on that earlier,
2 there's a difference in incentives between ported and non-ported customers.

3 Q. We know that there are wider benefits associated with porting?

4 A. That's absolutely right, yes.

5 Q. Callers will be able to reach the right person and won't need to update contact
6 lists -- external benefit of the number being ported?

7 A. Yes, there are external benefits from porting, yes.

8 Q. And also telephone numbers are a scarce resource in many parts of the country and
9 porting avoids the need for a new number?

10 A. Absolutely.

11 Q. So on your view as to the potential impact on the incentives to port numbers, charging
12 at LRIC could be expected to promote these benefits?

13 A. That's a rather large step, I think.

14 Q. Shall we break it into stages?

15 A. No, I think I see your point. Yes, I think if you take my point C then I guess that
16 would be the logical consequence of that, yes. The point was intended more as
17 probe just to show that decision-making, you know, strange decisions result.

18 Q. At paragraph 159(d) you say that the incentives for other CPs to interconnect deeper
19 into BT's network could be reduced. In relation to this, the evidence that the
20 Tribunal has heard is that there is already extensive interconnection at the tandem
21 layer?

22 A. Yes.

23 Q. Those investments are sunk, we've got the fibres in place?

24 A. Yes.

1 Q. And at the local layer there has also been evidence that further interconnection is
2 unlikely for various reasons: the TDM network, declining voice traffic. Moreover,
3 you are working on the assumption here I think that the dedicated link for ported
4 traffic would be priced at LRIC+, is that right?

5 A. Yes, I think that's correct.

6 Q. Could we look now at paragraph 160. You say there that the possibility of a CP
7 splitting out ported traffic might be even more likely in the context of a migration
8 from TDM to IP?

9 A. Yes.

10 Q. As I understand it, the reason for that is that a CP might face a capacity constraint on
11 its TDM network, so it might choose to split out ported traffic and have that carried
12 on BT's network to free up some of the TDM's capacity on its own network?

13 A. Yes, who knows whether, how practical this is, but I mean, it's a theoretical possibility
14 and my concern was, why create even the theoretical possibility?

15 Q. I understand these are all theoretical. I think you describe them as hypothetical?

16 A. Yes, I think they are hypothetical.

17 Q. And you've seen Mr Godfrey's factual response on this point. He explains why he
18 thinks that capacity constraints are unlikely on existing TDM complaints given
19 declining volumes with past peak?

20 A. I think the problem with all of this is that if we have to make specific assumptions to
21 say that there's some kind of granularity, or some kind of grit in the system that stops
22 these things happening, that seems to me not a very good answer to the question,
23 should we actually create this incentive in the first place? To say that the response
24 to the incentive is prevented by some grit is not really an adequate answer to the

1 question of why is the incentive there in the first place.

2 **Q.** Isn't the debate about whether an incentive in fact arises in the real world given the
3 facts situation which confronts real world operators?

4 **A.** Yes.

5 **Q.** And Ofcom, as a real world regulator, has to consider what actual consequences of its
6 regulatory action would be?

7 **A.** Yes, but I think this is a not implausible situation to arise in a world where TDM
8 traffic is declining. Voice traffic in general is declining. I think this is not
9 an implausible situation to potentially arise.

10 **Q.** Sorry, the TDM networks would be insufficiently provisioned -- ?

11 **A.** No, the easiest way to see this is, you can see there's issue. If you just take the
12 hypothetical case, if you set APCCs very low, I think we can probably agree on that
13 one, suppose we set them at 0. I might have situation where I have to make some
14 capacity increase on a link, which is going to cost me something, or I could just pull
15 off ported traffic that I can track over on to BT at 0, essentially, because we have
16 assumed that. Then that is clearly not a sensible thing to do. That's not resulting in
17 efficient provision. Obviously, you can say, at what point as we drop APCCs down,
18 do you have to start getting worried about this, but you know that there is some point
19 at which that might become a relevant incentive. I'm not providing any factual
20 evidence here to say, okay you're fine up to this point, you get a tiny little bit further
21 and there's a problem, because I think you'd just never know, there's no way to assess
22 that.

23 **Q.** We have heard the evidence here that you've got sunk costs, you've got sunk TDM
24 networks which are being utilised with links to every tandem, more or less, for the

- 1 big operators and a very large number of tandems?
- 2 **A.** What about the point when people want to turn off these TDM networks, for example?
- 3 We have to think ahead here and not be focused on specific assumptions and have an
- 4 approach which works in general.
- 5 **Q.** Taking first of all the incentives of other CPs to switch to NGN networks, we've heard
- 6 that a number of BT's competitors have already taken that step. We know that the
- 7 incentive which is driving that has got nothing to do with voice traffic, it has got to
- 8 do with the explosive growth in demand for data.
- 9 **A.** Yes.
- 10 **Q.** And that will continue, irrespective really, of these amounts of voice traffic, won't it?
- 11 **A.** Yes, I don't think that's a concern.
- 12 **Q.** We have got strong incentives -- looking in the real world as Ofcom must at the
- 13 situation that it faces -- you have got real world strong incentives to move to NGNs
- 14 already propelling the CPs towards NGN networks?
- 15 **A.** Yes you do, there are strong incentives to do with cost savings and providing
- 16 additional, you know, providing the very services they want to provide over those
- 17 networks, there are very strong incentives, yes.
- 18 **Q.** And insofar as there is a network, either an NGN network or a TDM network which is
- 19 installed, is sunk, an operator has every incentive to use that network where the
- 20 prices for APCCs are at LRIC or at LRIC+ for the reason that Mr Rosbotham gave?
- 21 **A.** Yes, if you are looking at in the short run, if there's spare capacity, why not use it?
- 22 I made the same point in response to you.
- 23 **Q.** We know capacity links are big?
- 24 **A.** Yes.

- 1 Q. My suggestion is that splitting ported from non-ported traffic is highly unlikely to
2 affect a CP's plans to migrate from CP to NGN.
- 3 A. That might be the case, yes.
- 4 Q. Could we pick this point up in your second report please, from paragraph 41. At
5 paragraph 42 you make the point that you were just making about the need to look at
6 incentives?
- 7 A. Yes.
- 8 Q. Rather than behaviour, in your view. And the point that I put to you is that, whether
9 one accepts that or not --
- 10 A. Yes.
- 11 Q. -- what incentives are will depend upon a number of factual considerations and those
12 are the types of considerations that Mr Godfrey was pointing to?
- 13 A. Yes.
- 14 Q. He wasn't talking about behaviour, was he, really?
- 15 A. I'm not sure I really agree with you on that point, really. Just as a starting point, I'm
16 not sure I agree with that. I do think that incentives should be the primary concern
17 for a regulator and I think if you can identify a situation where you are creating
18 an incorrect incentive then that obviously is concerning. I think, as I said before,
19 relying on there being some other impediment to actually stopping a reaction to that,
20 I think, you know, it may that be that's okay because you might be trying to achieve
21 some other larger benefit somewhere. I guess Ofcom's position would probably be
22 there's retail benefits to be had and therefore it's worth running a risk here. But it
23 isn't something that one would ideally want to create.
- 24 Q. I don't want to labour the point and I'm not sure there's actually much between us.

- 1 But my point is simply that the incentives that operators have will be informed by the
2 real world conditions?
- 3 **A.** They will but when deciding what to do we can't take just this particular point in time,
4 we have to think about other possibilities and what happens going forward, I think is
5 my point.
- 6 **Q.** An exercise of regulatory judgment, taking into account the way the world is and the
7 way we think it will develop?
- 8 **A.** Yes and that then determines, well, what's the risk of having an incorrect incentive?
- 9 **Q.** And at paragraphs 44 and 45, you consider this hypothetical that you just mentioned,
10 of APCCs set at 0. I would like to focus on what is said at paragraph 45 where you
11 list the possible consequences which are largely the same as we've just been
12 considering?
- 13 **A.** Yes.
- 14 **Q.** Towards the bottom of page you say that BT could be forced to maintain a legacy
15 TDM network dimensioned to carry ported traffic. Your clarification at the start of
16 today's examination --
- 17 **A.** Yes.
- 18 **Q.** -- shed some light on what I think you mean. You accept that Ofcom made clear in
19 its guidance that BT could recover the LRIC of carrying ported traffic on either
20 a TDM or an NGN network?
- 21 **A.** I think it says something like, it's a depreciated TDM network versus a NGN network,
22 whatever you are using, I think is the phrasing.
- 23 **Q.** So if there are lots of sunk costs already?
- 24 **A.** The fact that it says depreciated TDM network is kind of notable, I think, because

1 obviously the TDM network is largely depreciated. So I think there's a bit of an
2 issue there, but let's park that.

3 **Q.** Sir, I am conscious of the time and I am also conscious of the amount that needs to be
4 got through. I would say I have another 20 to 30 minutes of questioning, with the
5 Tribunal's indulgence. I appreciate that Mr Palmer will need time with my witness
6 and I suppose one issue is whether the Tribunal would be prepared to accommodate
7 that by sitting a little later today so that we can move to closings promptly in what
8 will already be a heavy day tomorrow, but I understand that the Tribunal may have
9 other commitments that may make that impossible?

10 **THE CHAIRMAN:** We will talk about this over lunch.

11 **MR HOLMES:** I'm grateful, thank you, sir.

12 **(1.00 pm)**

13 **(The short adjournment)**

14 **(2.00 pm)**

15 **THE CHAIRMAN:** Mr Holmes, we are happy to sit on for another half hour.

16 **MR HOLMES:** I am grateful.

17 **THE CHAIRMAN:** But I suspect after that the law of diminishing returns will set in.

18 So if we could leave it to counsel to agree on a fair allocation of the rest of the day,
19 that would be helpful.

20 **MR HOLMES:** I do not anticipate being more than another 15 minutes if that suits my
21 learned friend.

22 **THE CHAIRMAN:** Thank you.

23 **MR HOLMES:** Direct routing, Dr Maldoom, the third of your considerations.

24 **A.** Yes.

1 Q. You address this from paragraph 153 of your first report, if you would just turn that
2 up?

3 A. Yes.

4 Q. The point you make at paragraph 154 is that reduced porting conveyance charges
5 could mean that CPs have an incentive to maintain indirect routing even if total
6 industry costs could be reduced by moving to direct routing, that's correct, isn't it?

7 A. It reduces the incentives to switch, yes.

8 Q. If the industry were to move to direct routing then the common costs recovered for
9 APCCs set above LRIC would recovered elsewhere?

10 A. Yes, possibly with more transit as we discussed earlier.

11 Q. Those common costs would still be incurred by the other conveyance services that
12 share those costs?

13 A. Yes, by definition of them being common.

14 Q. So if you are concerned with identifying the relevant resource costs to industry of
15 indirect routing, the incremental costs are a better measure. Those are the costs that
16 would be avoided?

17 A. In a steady state world that would be correct. The additional consideration is the fact
18 here we have to think about exit from the TDM network and the incentives to turn
19 that off which I think that makes a more complex question, so then it becomes -- it
20 becomes debatable, the extent to which we might need to consider some of those
21 common costs essentially as part of the opportunity costs of keeping the TDM
22 network on longer than needed.

23 Q. But in terms of the incentives for BT to switch from TDM to NGN, we can agree that
24 ported traffic is only a proportion, I think it's around 20 per cent according to the

1 evidence, of BT's total traffic across its network?

2 **A.** Sorry, we are on BT's incentives to switch to NGN now?

3 **Q.** Yes, that was the point you --

4 **A.** No, I was making a point about direct routing in general, about switching to direct
5 routing and avoiding the --

6 **Q.** You were making that there. But I thought in the answer you just gave you switched
7 to BT's incentives to --

8 **A.** Sorry, not to switch over to NGNs, simply to turn off TDM at some point, which
9 obviously becomes difficult the more traffic it's carrying, especially to other CPs, the
10 more difficult that task becomes.

11 **Q.** So the switch is from TDM to NGN?

12 **A.** Yes, that's right.

13 **Q.** So one is considering whether they would have in any event an incentive to move
14 from TDM to NGN?

15 **A.** Yes, that's right, for their traffic.

16 **Q.** And they have a major -- it's a huge set of considerations that are moving them
17 towards NGN?

18 **A.** Yes, I think it would be fair to say it's a complex issue but there are many other factors.

19 **Q.** It's a multi-billion pound investment which will not be made having regard to the
20 sums which, as you pointed out, are comparatively small in the scale of the industry?

21 **A.** It is not going to affect turning on the NGN, these issues may well affect turning off
22 TDM and migrating.

23 **Q.** Let's suppose they have to keep some TDM switches open because of the increment of
24 ported traffic that they carry. In that case, that would be captured by the long run

- 1 incremental costs?
- 2 **A.** No, not necessarily, because there are common costs being incurred. Think of
- 3 it -- the easiest way to think of it is timing of migration. The point that you migrate,
- 4 the common costs get saved as well. The problem is all in the definition of
- 5 incremental. Under the normal conception of the term, then you wouldn't be
- 6 considering the cost of switches or switch buildings or anything like that as in any
- 7 way being incremental. However in the scenario where that network gets turned off
- 8 at some point and all the common costs go as well, clearly you have to ask yourself
- 9 what's keeping that network turned on?
- 10 **Q.** So first, the incremental costs of carrying ported traffic will include any additional
- 11 element of the TDM network that is required in addition to the requirements to carry
- 12 BT's other traffic, that's the increments?
- 13 **A.** That's the definition, the increments. So if our increment is purely ported traffic then
- 14 that is right by the definition of what you mean by LRIC.
- 15 **Q.** So providing that the LRIC calculations that you do, were done in the right way, and
- 16 I know the LRIC calculation can be very complex, but of course there's no appeal
- 17 about any particular feature of Ofcom's LRIC calculation in this case, if they are
- 18 done right they should capture the additional costs to BT of keeping its network
- 19 provisioned to carry the increments of ported traffic?
- 20 **A.** I think as you phrased it that's correct, but that's a different point to keeping the
- 21 network open. You said provisioning that specific traffic. That is clearly in the
- 22 definition of incremental costs. I think the broader issue is: is the network still there
- 23 because it's serving a volume of ported traffic?
- 24 **Q.** But whether the traffic is carried under NGN or TDM, they will get an incremental

1 cost measure for that service?

2 **A.** The incremental cost is recovered -- I think that has been clearly laid out in the
3 guidance. It talks about the incremental cost of the specific network that you are
4 using, whether that is depreciated TDM or NGN.

5 **Q.** We can agree that BT doesn't face any risk of element of cost?

6 **A.** My point is purely that that may be too narrow a conception of what the opportunity
7 cost is in this migration scenario which I think I have made fairly clear, and I agree
8 with you --

9 **Q.** We also agree the incentives to move to NGN are really, this is a --

10 **A.** My problem is the word "move to". I think the incentives to have NGN there and
11 move services to them are clearly strong. The question is about turning off TDM
12 and what happens to the ported traffic. So there's a -- we can have both together for
13 a while, yes, so there is a separate question about migration, okay, distinct from the
14 actual turn on and use of the NGN network.

15 **Q.** And whatever the costs that result to BT, they will be recoverable provided that they
16 are efficiently incurred and that Ofcom continues to conclude they are efficiently --

17 **A.** I hope that would be the case. I am not entirely certain to be honest because of this
18 issue about the common costs of the TDM network becoming in effect
19 an incremental cost under this migration scenario.

20 **Q.** But if it is an incremental cost it's recoverable?

21 **A.** I think you could stretch the interpretation of incremental cost in that manner. That
22 hasn't been what happened for example in the ISDN30 scenario. When Ofcom
23 looked at this situation they maintained very much a conventional conception of
24 incremental cost, then said you think about migration issues on top. That might well

1 get you to a similar result in the end and then --

2 **Q.** But you nonetheless accept that one could adopt an interpretation of LRIC which

3 would cover those incremental costs?

4 **A.** I am never aware of that having been done and I think that would be -- an imaginative

5 interpretation might be one way of putting it. It's a stretch, that's all I am saying.

6 **Q.** Very good.

7 **A.** To try and squeeze all of that into the concept of LRIC, it seems to me more logical to

8 maintain LRIC under the current understanding of it and then say maybe there are

9 some more issues on top of that.

10 **Q.** I am conscious of my time running out. I think we have taken that as far as we can.

11 **A.** Yes.

12 **Q.** On the question of whether Mr Godfrey is right to suggest that the correct incentives

13 will be determined by a LRIC standard, the correct incentives to migrate to direct

14 routing will be captured by a LRIC standard, I think you made two points. The first

15 is that you say that he must be assuming first best price of general transit and

16 conveyance services?

17 **A.** Yes.

18 **Q.** And you are referring here to the distortions we have already discussed?

19 **A.** Yes. Well, that's right.

20 **Q.** So you are saying that it would have knock on consequences --

21 **A.** Sorry, can you give me a reference?

22 **Q.** Of course, sorry. It's paragraph 56 of Maldoom 2, of your second statement. You

23 see there, you see the point that we have just been debating, whether LRIC provides

24 the correct migration incentive. You say "That would be correct in the first best

1 world"?

2 **A.** Yes, that that's right.

3 **Q.** You then identify two assumptions that you think must underlie Mr Godfrey's
4 argument in order to make it correct. The first is that first best pricing of general
5 conveyance and transit services will be needed?

6 **A.** Yes, I think these are four examples. I am not suggesting this is an exhaustive list but
7 here are some examples of ways in which there are deviations from the first best in
8 my view, yes.

9 **Q.** And this is because an RCP might face a cost advantage from continuing to pay
10 porting conveyance charges at LRIC rather than purchasing transit services at LRIC+
11 after agreeing to direct routing, is that right?

12 **A.** Yes, that's right.

13 **Q.** So this opinion is based on the factual assumption that a ported call under onward
14 routing would in the generality of cases take the same route as a call under direct
15 routing?

16 **A.** Gosh. It's complicated question. I am not sure it is based on that assumption.
17 I would need to think about that.

18 **Q.** It's based on the assumption that transit would be consumed in place of porting
19 conveyance, to put it more simply?

20 **A.** Yes.

21 **Q.** Very good. And the evidence of Mr Rosbotham is that carriers who do not
22 interconnect directly would not be discussing direct routes, and you heard him?

23 **A.** Carriers who do not interconnect directly would --

24 **Q.** Yes. As a commercial matter he thought it was implausible that you would contact

- 1 someone with whom you don't interconnect directly to discuss direct routing.
- 2 **A.** Well, yes, that's what he thought.
- 3 **Q.** The second assumption is that there would be no quality of service impact of moving
4 to direct routing, a point that you develop at paragraph 58. Your point I think is that
5 direct routing would improve quality of service by removing interworking of this
6 codecs problem, and the supplier won't be able to differentiate pricing significantly
7 to capture that benefit?
- 8 **A.** Yes, I think the usual, the usual assumption is that there are benefits from quality
9 improvements or service innovations which are not entirely captured by the supplier.
10 Some of those are externalities.
- 11 **Q.** If that were correct, it would be true under either a LRIC or a LRIC+ pricing of
12 APCCs?
- 13 **A.** Sorry, what exactly?
- 14 **Q.** That they were uncaptured benefits.
- 15 **A.** Yes.
- 16 **Q.** And your suggestion is simply to keep porting prices high as a makeweight for a
17 benefit not captured by pricing incentives?
- 18 **A.** Yes. That's what we mean by second best, that there are other external effects which
19 you may take into account.
- 20 **Q.** And your argument rests on its own factual assumption about the extent to which
21 consumers generally value the relevant quality improvements and whether this
22 would be reflected in CPs' incentives?
- 23 **A.** No, it's a general point. I do not think it requires any particular factual basis.
- 24 **Q.** But if all of a CP's customers valued quality, or if customers generally value quality,

1 they would move to a CP with higher quality?

2 **A.** Yes. It's different from capturing the entire benefit. I can construct you some
3 textbook examples which I can -- we can have competition capturing all of the
4 benefit but that is not going to happen under any situation where customers are
5 differentiated.

6 **Q.** You've seen the evidence of the interveners' witnesses of fact. They say quality is
7 a consideration which weighs in favour of direct routing and indeed is one of
8 sufficient importance that they would be moving to direct routing in any event?

9 **A.** Yes.

10 **Q.** You reviewed that evidence when preparing your first your second report but you
11 didn't mention it?

12 **A.** I didn't, no.

13 **Q.** As regards the move to NGNs more generally, we have discussed Ofcom's conclusion
14 that this big decision is unlikely to be materially affected by APCCs and I think you
15 agreed with that. Indeed keeping porting conveyance charges high might, if
16 anything, reduce BT's incentives to move to upgrade its network and move to direct
17 routing?

18 **A.** It would get a margin from -- it's obviously getting a margin which is contributing to
19 its common costs from doing that.

20 **Q.** From TDM assets which are largely already depreciated and substantially recovered?

21 **A.** Yes. Whether that creates an incentive, that's a question about what the relative costs
22 are of serving that traffic under a different network structure, so it could be that those
23 costs are lower, in which case it would still have an incentive.

24 **MR HOLMES:** I am grateful. I have no further questions, Dr Maldoom.

1 **Cross-examination by MR BATES**

2 **MR BATES:** Dr Maldoom, I just wanted to clarify with you a point of terminology.

3 **A.** Yes.

4 **Q.** If I can ask you to look at paragraph 85 of your first statement, it's on page 34.

5 Starting at the beginning of page 34 you say:

6 "However, the relevant questions for the choice of cost standard, i.e.
7 moving from LRIC+ to pure LRIC is a rather different one: whether
8 reducing the level of porting charges might enhance retail competition."

9 Can I just check there, when you use the term "retail competition" you are talking
10 about both domestic customers and business customers?

11 **A.** Yes, I think that's right, yes. When you say business customers, I mean a retail
12 business customer, yes, as opposed to a somebody who is taking wholesale telecom
13 services.

14 **Q.** And then reading a little bit onwards then beyond the (i), where you say:

15 "Voice services are a minor ...(Reading to the words)... services."

16 There you are talking about domestic customers; is that right?

17 **A.** That's a comment about domestic customers, yes. There is still bundling in the
18 business world but it would be in a different form potentially, but you'll still buy
19 bundles of services.

20 **Q.** Obviously it's possible to buy bundles of services, but your evidence regarding
21 bundles worth up to £100 a month of television, that is --

22 **A.** The discussion earlier was all about the household consumer, yes.

23 **Q.** Would you accept that business customers are an important segment of competition
24 between CPs given that some of those business customers will obviously have

1 significant volumes of outgoing and incoming calls?

2 **A.** Yes.

3 **Q.** Greater than your average householders?

4 **A.** I would agree with that statement, yes.

5 **Q.** And while residential voice calling may be declining in importance, because once
6 teenagers are no longer sitting on the step at home using the fixed line phone, instead
7 they're in their room talking on a mobile or texting, voice calls remain important in
8 relation to business customers, both incoming and outgoing?

9 **A.** I mean to be honest I do not know what the data says about the -- whether there is a
10 similar decline in business traffic, voice traffic, but certainly there are going to be
11 business customers for whom the voice service is very important.

12 **Q.** And business customers may also attach particular importance to porting their number
13 with them when they change provider because they have letterheads, business cards
14 et cetera printed already?

15 **A.** That's the reason businesses may use non-geographic numbers whereas here we are
16 talking about geographic numbers which takes us into somewhat different territory.

17 **Q.** But not all businesses use non-geographic numbers, do they?

18 **A.** A geographic number would only be useful for a business which might move within
19 an area. If it moves outside and requires different exchange prefixes and so on then
20 that would be a reason it would use a non-geographic number. So the question of
21 business porting probably cannot be separated from the question of non-geographic
22 numbers.

23 **Q.** And in relation to a CP such as Vodafone which specialises in competing for business
24 customers in relation to fixed line services, given the discussion we have had, the

1 competitive disadvantage that a company like Vodafone suffers as a result of APCCs
2 by comparison with, say, BT, will be greater than would be suffered by a CP
3 competing principally in relation to residential customers for the reasons we have
4 discussed?

5 **A.** I really can't answer that question because I do not really know about what the typical
6 Vodafone business customer is like. But if they were using non-geographic
7 numbers, that statement would be false.

8 **Q.** But if they were using geographic numbers then it would be true?

9 **A.** But that's a factual question; I have no idea.

10 **Q.** What you are saying is you simply do not have the data in order to see the importance
11 of --

12 **A.** We do not need detailed data but we need to establish a few facts about the nature of
13 Vodafone's business customers before I could give a sensible answer to that
14 question.

15 **MR BATES:** Thank you. I do not have any further questions.

16 **MS LOVE:** No questions.

17 **Re-examination by MR PALMER**

18 **MR PALMER:** Dr Maldoom, can I just ask you a few questions in re-examination.

19 In answer to Mr Holmes' questions, you were asked in particular in your second
20 witness statement, with reference to paragraph 96 and following, some questions
21 related to the -- I am not sure I have given you the right reference. That's why I am
22 pausing. It's not the right reference, I apologise. I do not think you will need the
23 reference. Let me approach it this way. The hazards of re-examination.

24 You were being asked about the impact on retail competition of the move from

1 LRIC+ to LRIC. What you said in answer to Mr Holmes' questions is you would
2 have to look at this by lifting the bonnet. Only Ofcom can look at flows between
3 different operators. Do you remember giving that answer?

4 **A.** Yes, I do. I remember that discussion, yes.

5 **Q.** You indicated that the analysis undertaken by Ofcom so far in its guidance was not
6 sufficient in fact to identify how retail competition is affected by porting?

7 **A.** Yes. I mean I think the discussion with Mr Holmes -- I think we agreed on lots of
8 points about how competition might work. I think the trouble is that we do not have
9 analysis along those lines to actually see what the effect is. There are also broad
10 issues to think that those effects are probably quite limited which is why it would be
11 particularly useful to see some more fulsome analysis, I think.

12 **Q.** My question is what kind of analysis would be necessary in order to establish that?

13 **A.** Right, okay. I think one would want to look, as we discussed earlier, at the question
14 of the incentives to attract customers from other CPs and what effect APCCs might
15 have on that. In this regard, everything is not symmetric. So yes, there's obviously
16 a question about taking a customer over from BT, but there are also questions about
17 customers who might be moving amongst the other large CPs who are around two
18 thirds of the market, something like that, who might be porting within those number
19 ranges which might then in future be dealt with possibly under direct routing
20 arrangements. So those are all things which need to be looked at separately.

21 We had this question about what are the effects on the incentives to acquire
22 a customer, and I think as we heard earlier, then in a world in which a customer is
23 buying a bundle of services, if we have a cost penalty which is associated with their
24 incoming calls, we have to then think about materiality, about what other services

1 they are buying and whether having a small cost penalty associated with their
2 incoming calls, whether that can have any conceivable effect.

3 It may be that there are certain customers for whom that is significant, but then we
4 have to ask, how many are there? How important are those to competition? We
5 have to also ask about pricing and the extent to which prices generally, versus the
6 segmentation of the market, if we think that there are particular groups that are
7 particularly affected by porting charges.

8 So there's a whole raft of questions to actually address that properly.

9 **Q.** Thank you. Can I ask you to turn in your first witness statement to paragraph 159D,
10 please. First of all, at the top of paragraph 159, before I go to D, you say:

11 "Pushing porting conveyance below...(Reading to the words)... distorted
12 behaviours."

13 **A.** Yes.

14 **Q.** When you say "pushing ported conveyance below the price for corresponding services
15 for non-ported traffic", are you referring there to LRIC and LRIC+?

16 **A.** No, what I have in mind is that we have a parallel market for transit and conveyance
17 services which are not related to ported traffic. We have obviously some parallels
18 between those because there are essentially products over in this non-ported space
19 which are broadly similar to the products which are used for carrying ported traffic.
20 There are obviously some differences as we've heard as well but there are some
21 broad equivalences. Obviously the non-ported traffic, so standard transit and
22 conveyance services, have not been subject to regulation for quite some time so have
23 essentially competitively established prices.

24 So we have to then say what happens if I am shifting some traffic here, it's ported

1 traffic and it gets dealt with under regulations, and the price is set to this level, versus
2 corresponding non-ported traffic which is essentially you've got a competitively
3 determined price.

4 **Q.** Yes. So it's against that background that we come to D, where you are addressing
5 incentives for other CPs to interconnect deeper into BT's network to pull off traffic
6 sooner and carry it on their own or third party networks could be reduced. You
7 heard evidence about the cost-benefit analysis that can be undertaken in respect of
8 any one interconnection choice. I just want to understand your evidence within that
9 context as how the differences in the prices that you have identified will in fact affect
10 those decisions about deeper interconnection?

11 **A.** Mm-hm.

12 **Q.** So what's the relationship between the cost-benefit analysis and the dynamics that you
13 are speaking of?

14 **A.** The reason that it's useful to see that everybody -- the evidence we have had heard
15 about people using this kind of cost-benefit approach. It does indicate that rational
16 choices are being made about where traffic is put according to prices. So I think we
17 then have to say from that observation that therefore the incentives that are set are
18 important. It may well be that in particular cases the cost-benefit analysis of doing
19 something is very far from the break even point, and I think we have heard examples
20 of that. But the very fact that such a trade off is being struck, the fact that there are
21 examples which are maybe not that close from the trade off being made, doesn't
22 then -- I don't think we can rely on that to then say that incentives are unimportant.

23 **Q.** What reason is there, if any, to conclude that given the correct incentives, further
24 interconnection at the DLE level specifically is unlikely?

1 A. We have heard reasons for that. It seems to me that what we have heard are various
2 issues and problems partly to do with information. We have heard this issue about
3 segregation of traffic at DLE level. So there are certainly -- there's certainly some
4 grit in the machinery.

5 Q. Does that affect your view on --

6 A. No, I do not think it does, because I still think that it's clearly possible that somebody
7 might choose to go down to the DLE level and that decision is affected by APCCs,
8 and nothing we have heard fundamentally affects that proposition, the possibility of
9 it. So therefore I think it follows from that that it is relevant to consider that issue in
10 determining the level of APCCs, to think about what the incentive effects might be.
11 The wholesale space margins are all very thin, and you have to remember that people
12 will potentially respond at some point depending on what the prices are.

13 Q. It was suggested to you at the close of Mr Holmes' questions that keeping APCCs
14 high, ie at LRIC+ level as opposed to LRIC, might disincentivise BT from moving to
15 an NGN; is that something which you recognise as being a realistic proposition?

16 A. No, I do not think that that's relevant. I think the issue is not so much about BT's
17 timing on turning on NGN. I think I was hopefully reasonably clear that what
18 I think is the issue is essentially shutting off TDM and removing costs which are
19 associated with that which certainly from my understanding are not inconsiderable,
20 but actually there are quite a lot of costs associated with this technology which may
21 be common across a number of services but which can be potentially turned off at the
22 point at which that service is no longer required.

23 That's what I have called migration and it does need to be kept distinct from the
24 question of BT turning on its own NGN network.

1 **MR PALMER:** I am very grateful, Dr Maldoom. That completes your evidence.

2 **MR HOLMES:** May I call the final witness, Mr Godfrey, Ofcom's economist.

3

4 **MR WILLIAM GODFREY (sworn)**

5 **Examination-in-chief by MR HOLMES**

6 **MR HOLMES:** Mr Godfrey, do you have to hand a file marked DF1?

7 **A.** I do.

8 **Q.** If you turn to tab 4 within that file, do you see there an expert report which bears your
9 name?

10 **A.** Yes.

11 **Q.** If you turn to the final page of that report, do you see there your signature?

12 **A.** Yes.

13 **Q.** And is this the report the evidence that you give in these proceedings?

14 **A.** It is indeed.

15 **Q.** Are the factual statements true to the best of your knowledge and belief?

16 **A.** They are.

17 **Q.** Insofar you express opinions, do they represent your opinion in relation to the matters
18 being commented on?

19 **A.** Yes.

20 **Q.** I am grateful. I have a few points by way of examination-in-chief emerging
21 primarily from this morning's discussions. The first point concerns the letter sent in
22 relation to Mr Morden's calculations shortly in advance of the hearing in which he
23 updated his calculations to reflect a measure of the cost of debt of 1.5 per cent based
24 I think on a Vodafone Eurobond. Do you recall that letter?

1 A. I do.

2 Q. Can I ask you if you have any comment you want to give on the 1.5 per cent figure
3 used, drawing on your experience of doing cost of capital work as a regulator of
4 telecoms networks?

5 A. Yes. So in the last couple of years I have looked at a number of financing issues in
6 relation to cost of capital, both in relation to setting price controls for BT and the
7 mobile operators. It struck me that the 1.5 per cent seemed particularly low for
8 a bond yield and on closer examination I think it's because it's the yield to maturity
9 on a euro denominated bond. If you were to convert the yield to maturity from that
10 bond into pounds sterling you would get a rate closer to 3 per cent. And a helpful
11 crosscheck on that was to look at the yield to maturity on Vodafone bonds with
12 a 10 year maturity denominated in sterling which is also around 3 per cent, and
13 a further crosscheck on a benchmark of BBB bonds which is also at a similar sort of
14 level.

15 I think the other remark I would make is in relation to the cost of financing which is,
16 certainly when looking at network investment, we have tended not to look at just
17 debt financed investments. I think the main reason for that is certainly on any sort
18 of scale investment, once you start issuing more debt it starts to have implications for
19 the cost of equity. In particular, as a firm issues more debt, if you like, the riskiness
20 of the equity increases. So we would more typically look at the weighted average
21 cost of capital. That is calculated across equity and debt weighted by their relative
22 proportions.

23 The most recent such determination was the leased line charge control earlier this
24 year where we set a cost of capital, pre-tax nominal, at 9.8 per cent for BT's leased

1 line services and a similar rate would be appropriate for BT's essentially narrowband
2 voice services including interconnection.

3 **Q.** A second question. You heard Dr Maldoom's reply to the question of Professor Reid
4 when he asked about the implications for the appropriate costs measure of dynamic
5 efficiency considerations and I wondered whether you would like to comment on
6 that.

7 **A.** Yes, I was struck by some of the discussion around, for example, the pricing of the
8 ISDN services. I think one of the key issues there in relation to dynamic efficiency
9 is that it's the end customer who determines the service that they use. So in some
10 sense, because the customers are investing in some of the equipment, the technology
11 that the CP uses to support it is kind of related. So the decision to switch to some
12 alternative, for example, IP based voice services substitution, would be at the
13 customer's decision.

14 In relation to porting conveyance, I think we are concerned with technology choice
15 where the decision of technology to use is one made by the CP and not the end
16 customer.

17 I think the other aspect of dynamic efficiency I think it's important to consider is of
18 course it's not just BT that invests and innovates, it's also competing CPs. So
19 wholesale charges between CPs can also have implications for their own incentives
20 to invest and innovate.

21 **Q.** And a third and final question. You heard Dr Maldoom's comments during the initial
22 examination-in-chief by Mr Palmer about the implications for the choice of cost
23 standard of the fact that BT's TDM network assets are approaching the end of their
24 life. Is that an issue on which you have any comment to make?

1 A. So the end of life issues in relation to the TDM network were very carefully
2 scrutinised in the narrowband market review from 2013 which looked at technology
3 choice between the TDM network and the next generation network that BT's rivals
4 were using. The critical question there was in setting price cost controls for
5 termination, origination and so on is whether -- and also interconnection, is whether
6 we should use a TDM or an NGN network. Those trade offs and the framework,
7 including the static, specifically allocative, but also the dynamic efficiency issues
8 were addressed in annex 5 of that market review statement.
9 They were then largely leveraged into the guidance in relation to porting charges in
10 relation to the technology choice. So for the trade offs that were considered I would
11 refer you to those.

12 **MR HOLMES:** I am grateful, Mr Godfrey. If you stay where you are, I think that
13 Mr Palmer will have some questions for you.

14 **Cross-examination by MR PALMER**

15 **MR PALMER:** Good afternoon, Mr Godfrey. If we look at your witness statement,
16 expert report, at tab 4 of bundle DF1, paragraph 3, we can see you have
17 responsibility for overseeing Ofcom's economic analysis of price regulation and
18 interconnection remedies for the 2013 narrowband market review and the review of
19 porting charges culminating in the guidance and consultation.

20 A. That's correct.

21 Q. Just one ambiguity in that. Are you saying you had responsibility for overseeing
22 Ofcom's economic analysis in the review, or did you have responsibility for
23 overseeing the whole review in the guidance and consultation?

24 A. Can I clarify, do you mean for the market review or do you mean for the guidance on

1 porting charges?

2 **Q.** I mean the review of porting charges culminating in the guidance and consultation.

3 Were you limited to economic input on that or did you have ownership of the whole
4 document?

5 **A.** My role was in relation to the economic analysis and overseeing the key economic
6 sections of that document, both the consultation and the statement, so those would be
7 sections 4, 5 and 6, so a choice of cost standards, technology choice, and who should
8 pay for the porting charges, or the porting charges conveyance and non-conveyance.

9 **Q.** That's very helpful. The evidence that you give on behalf of Ofcom today is to
10 explain the reasons given in that guidance, sections 4, 5 and 6, and in particular the
11 reasons for preferring LRIC over LRIC+?

12 **A.** That's correct.

13 **Q.** I take it although you had responsibility for those sections of the document, you
14 weren't Ofcom's sole decision maker?

15 **A.** I certainly wasn't the sole decision maker.

16 **Q.** There's an internal process no doubt of where you report and I do not know what the
17 process is. Is there some sort of board level decision?

18 **A.** There is an internal governance process. A project such as this would be led up
19 a suitably experienced policy director with significant economic analysis supported
20 by an economics director. The decisions would typically be made at an executive
21 level policy decision making board and the most significant decisions would go all
22 the way to the main Ofcom board. This is not such a review that went all the way to
23 the Ofcom board.

24 **Q.** Your personal views are not decisive of Ofcom's position at the time a decision is

1 made?

2 **A.** So my role would be to guide the decision makers in relation to the economic analysis.

3 Where there's an issue with very significant economic content then hopefully my

4 views are persuasive. But there is a degree of authorisation and sign off at

5 a relevant senior executive level in relation to a final policy document such as this.

6 **Q.** We are slightly short of time so if you can keep your answers concise to the question

7 I'm asking. Your answer is: no, your personal views are not decisive for Ofcom?

8 **A.** I think that's fair, they wouldn't be decisive.

9 **Q.** In terms of the process which is followed to produce the guidance, as you made clear

10 in paragraph 3, we have seen the document, there's a consultation first. The

11 responses to that consultation are then analysed by Ofcom. And in the final

12 document, the guidance document itself, you publish your reasons responding to

13 consultees' views, and in so doing you often refer back to what was said in the

14 consultation rather than repeating everything; that's right, isn't it?

15 **A.** That's correct.

16 **Q.** Could we turn to the guidance, please, which you will find below in bundle BT1 at

17 tab 8. I am going to ask you first please to turn to section 6 which starts at page 54.

18 It's one of the sections I think you said earlier you had responsibility for?

19 **A.** For overseeing the economic analysis of, yes.

20 **Q.** And we can see at 6.2 that what you were primarily concerned with here was

21 considering four options for a charging rule. That is OCP pays, DCP pays, RCP

22 pays, or an equal split of costs between the DCP and the RCP; those were the four

23 main options that were considered?

24 **A.** That's correct.

1 Q. And the ultimate answer we know is that RCP pays, that's what Ofcom settled on.
2 In that context we can see at 6.3 the system of onward routing was taken as a given,
3 that's right, isn't it?

4 A. That's correct.

5 Q. But you also went on in the light of consultees' responses to consider whether
6 proposals would provide -- your proposals for the charging rule would provide the
7 right incentives to achieve the benefits of direct routing, that's also at 6.3, isn't it?

8 A. Yes.

9 Q. Your conclusions are summarised the 6.4:

10 "We conclude that allowing the DCP to charge the RCP for all porting
11 costs that are recoverable is appropriate. Whilst our assessment is based
12 on the ...(Reading to the words)... of direct routing where this is
13 efficient."

14 That's a broad summary of your material conclusions?

15 A. That's fair.

16 Q. Turning to the consideration of those charging rule options, they were assessed against
17 the now familiar six principles of pricing and cost recovery, weren't they?

18 A. They were indeed.

19 Q. So let's just consider what function those six rules, six principles of cost recovery and
20 pricing is. They are effectively used in a number of contexts for cost recovery and
21 pricing. They can be used to discriminate between options, to choose between
22 options. First of all as to whether a certain category of costs should be recovered at
23 all?

24 A. Yes.

1 Q. They can be applied in that context. They can be applied, as in this context, section
2 six, to determine who should pay the costs?

3 A. Correct.

4 Q. They can be used to determine how costs should be recovered?

5 A. Yes.

6 Q. And indeed what costs standard applies when it's a cost orientated principle being
7 applied?

8 A. Yes, correct.

9 Q. And the six principles are, if you like, benchmarks. They are tools of analysis rather
10 than pass/fail tests?

11 A. Yes.

12 Q. They are designed to guide the exercise of discretion?

13 A. Well, deciding between alternative options, yes.

14 Q. They are designed to help Ofcom ensure it reaches decisions on a consistent basis,
15 a principled basis?

16 A. Yes, I think that's fair.

17 Q. What Ofcom did in this context, and in particular in the context of choosing between
18 LRIC and LRIC+, was to determine how it should exercise its discretion to choose
19 a costs standard having regard to what light each principle shed on that issue?

20 A. Sorry, are we talking about the choice of cost rather than who pays now?

21 Q. Yes.

22 A. So yes, the six principles we used.

23 Q. And in that context we know from Ofcom's skeleton, paragraph 99, Ofcom did not
24 consider the merits of one dramatically to outweigh the merits of the other. That's

- 1 LRIC and LRIC+ we are talking about?
- 2 **A.** Correct.
- 3 **Q.** It was on balance, in Ofcom's view, the more appropriate standard.
- 4 **A.** Yes.
- 5 **Q.** In its discretion, Ofcom already treats different aspects of porting charges differently,
6 doesn't it?
- 7 **A.** I wonder if you could clarify, please.
- 8 **Q.** Following this guidance, there is a general choice of pure LRIC as applicable to costs
9 standard, but for system set-up costs and additional conveyance costs Ofcom has
10 long held, and before it Oftel, that costs recovery should be zero?
- 11 **A.** That's correct and reflected in GC18.
- 12 **Q.** So there's no genuine principle that all costs to the DCP must be treated in the same
13 way, all porting related costs?
- 14 **A.** Consistent with GC18, that's correct.
- 15 **Q.** You no doubt accept in principle that it would have been possible for Ofcom to
16 conclude that LRIC was appropriate for some aspects of the service but LRIC+
17 appropriate for others?
- 18 **A.** I think that's a possible distinction.
- 19 **Q.** So you could have for example decided that LRIC was appropriate for line set up and
20 switch conveyance but that LRIC+ was appropriate for inter-switch conveyance?
- 21 **A.** A fragmentation of the different activities and the costs associated would have been
22 possible, but this was not identified by the parties at the time, beyond conveyance
23 and non-conveyance.
- 24 **Q.** Not identified at the time, there's questions about what was in the scope at the time,

1 but that distinction is possible to make?

2 A. I think that distinction could be made.

3 Q. Similarly, when APCCs were first regulated in 2002 that was done on a LRIC+ basis
4 given the similarity of BT's costs as DCP to its costs incurred if it was acting as
5 a transit operator for a non-ported call?

6 A. So the decision looked at the six principles, looked at cost causation, pointed towards
7 LRIC, and ultimately concluded on the basis of LRIC+, I agree, on the grounds of the
8 MMC's decision prior to that.

9 Q. It was a little bit more than that. Let's have a look at it. It's in file BT 2 at tab 29.
10 This is the relevant decision of Oftel in 2002, isn't it?

11 A. Tab 29, yes.

12 Q. And if you turn within it on page 15 to paragraph 8.1, we see under the heading
13 "APCCs for Geographic Portability", which is what we are concerned with:

14 "BT hasn't previously recovered its APCCs for ported geographic calls
15 ...(Reading to the words)... and wishes to recover them ..."

16 Pausing there, that's in view of the growth, no doubt, of the ported traffic by that
17 time?

18 A. I would imagine so.

19 Q. "The Director General believes it's reasonable for BT to recover these costs because
20 these costs are similar to those that BT would incur if acting as a transiting operator
21 for a non-ported call."

22 A. That is what the Director General said.

23 Q. That's an explicit reason given. And we see that picked up again at 9.5, referring to it
24 as a transit charge. It therefore would be made for the call, whether it's to a ported

1 or a non-ported number, so may recover these costs in the normal manner, yes?

2 **A.** That is what it says.

3 **Q.** And the normal manner within this context was, as we see when we read on, LRIC+.

4 **A.** Correct.

5 **Q.** And at 11.4 we can see that the mark up for the plus is made on an EPMU basis, and
6 at the time the appropriate mark up was thought to be 9.5 per cent as things stood at
7 that time, yes?

8 **A.** Yes.

9 **Q.** At 11.7 just over the page we see that decision being made. Again, the consistency:

10 "In light of the MMC's view that the basis for charges should be the same
11 as for other interconnection services..."

12 That is settled on. That was the view taken then. It was because the basis of charges
13 should be the same as that used for conveyance at LRIC+; that's right, isn't it?

14 **A.** I agree, but I think there's another dimension to it which is consistency with the charge
15 controls on other regulated services. So the reference here to LLU and other
16 network charge controls. I think the relevance of that, if I may clarify, is I think
17 at the time because the majority of BT's network services were price controlled, the
18 implicit assumption would be the contribution to common costs across all of their
19 services.

20 So if the price controls on LLU and network charge controls had implicitly assumed
21 that, for example, ported conveyance could contribute on a LRIC+ basis, then I can
22 see why that would be an additional reason why the Director General would have
23 looked at consistency.

24 **Q.** That's an additional reason that was present. But the main reason, if we go back to

1 8.1, is that simply these costs are similar to those that BT would incur if acting as a
2 transiting operator for a non-ported call.

3 **A.** That is certainly what the Director General said.

4 **Q.** A range of prices can be said to be cost orientated as you have explained in your
5 report. They include LRIC and LRIC+.

6 **A.** I agree, and in principle all the way up to stand alone costs.

7 **Q.** But GC18.5 effectively excludes 'stand-alone' costs because it refers to the fact that
8 costs must be based on incremental costs. So again that leaves us with LRIC and
9 LRIC+, doesn't it?

10 **A.** I think that's fair, yes.

11 **Q.** GC18.5 also provides that charges must be reasonable?

12 **A.** Yes.

13 **Q.** And again that's consistent in principle with either LRIC or LRIC+?

14 **A.** I think that's fair.

15 **Q.** GC18.5 itself doesn't specify any particular cost standard, just that it must be cost
16 oriented based on the incremental costs and reasonable. And in that overall context,
17 either LRIC or LRIC+ would be consistent with that requirement?

18 **A.** I think on the wording of GC18 I agree.

19 **Q.** There are two riders or exceptions, if you like, built into the wording of 18.5. It might
20 be helpful for the Tribunal to have it to hand. It's in BT1 at tab 10. Just over the
21 page at 18.5. If we look at 18.5(a), it ends in the words "unless", and then there's
22 two exceptions laid out in the alternative. The second one, is that Ofcom has
23 directed that another basis for charges should be used. Of course in the present case
24 Ofcom made no direction, did it?

1 A. In the present case, no, Ofcom issued the guidance and then resolved the dispute.

2 Q. Yes. And in fact Ofcom explicitly decided not to issue a direction in that context,
3 didn't it?

4 A. That's correct.

5 Q. The other option is the first one, that's the DCP and the RCP have agreed another basis
6 for the charges. You are not giving evidence on that point as to whether anything
7 was in fact agreed. But the existence of that exception is consistent, isn't it, with the
8 fact that in a competitive market, parties can in the first instance agree a price
9 between themselves?

10 A. Well, I have not given evidence on this. Even in a monopoly market, the supplier and
11 the buyer may agree a price between themselves. The same is true in the
12 competitive market.

13 Q. But where parties do not agree they can raise a dispute?

14 A. Correct.

15 Q. For example, a DCP might take the view that its proposed charges at, I do not know, X
16 pence per minute, were cost orientated based on incremental costs and reasonable
17 since they reflected a reasonable LRIC+ rate. But an RCP might consider that a rate
18 of, a LRIC rate of Y pence per minute is cost oriented based on incremental costs and
19 reasonable, and that could only be resolved in those circumstances by a dispute.
20 The purpose of your guidance was to indicate how Ofcom would resolve that dispute
21 in the future?

22 A. That was the role of the guidance, yes.

23 Q. Yes. We can see that in the guidance if we turn back to tab 8 in bundle 1. 8.12
24 which is on page 85. This is in the conclusions. I appreciate you weren't expressly

1 responsible for chapter 8 but these conclusions no doubt informed your approach in
2 the earlier chapters.

3 8.12, it's a reference back to that earlier consultation explaining that they had
4 considered whether to issue a direction, we know the answer was no.

5 And then, 13:

6 "We propose to provide guidance in respect of APCCs and
7 non-conveyance porting charges. We explained we would take this
8 guidance as our starting point if we were asked to resolve a complaint or
9 dispute about whether ...(Reading to the words)... providing portability."

10 If I have understood your evidence correctly, that is precisely the function that you
11 have just explained to the Tribunal, is that right?

12 **A.** Yes, I think paragraphs 8.12 and 13 are what I was referring to.

13 **Q.** That is a reference back to what was in the consultation proposals. So just for
14 completeness, if we turn onto 8.34 and 8.35 together, where we get to Ofcom's final
15 conclusions on this matter, we can see at the end of 34 they considered:

16 "... the publication of guidance as set out in this document is the least
17 intrusive measure ...(Reading to the words)... whether porting charges
18 are reasonable incremental costs."

19 So that seems to be the same approach as trailed in the consultation document?

20 **A.** That's correct.

21 **Q.** Let's come to the question of the choice for LRIC pricing to meet Ofcom's regulatory
22 objectives. First of all, we will identify some common ground about what the
23 regulatory objectives are in this context. In short, the answer to that is to facilitate
24 consumer choice and effective competition?

- 1 **A.** I think that's a fair characterisation.
- 2 **Q.** Under either LRIC or LRIC+, under either choice, it would be true that there would be
3 no direct charges to subscribers to act as a disincentive for changing service
4 provider?
- 5 **A.** I think the critical question in answering that to my mind is: would the CP pass it on as
6 a retail charge which will go to the level of the charge? So if the charge were high
7 enough, possibly, subject to the restriction that it didn't act as a deterrent at the retail
8 level. That is my reading of the provisions in the overriding legislation.
- 9 **Q.** So Ofcom didn't identify, as I understand, there was a real risk that there would be a
10 direct charge to subscribers high enough to act as a disincentive for changing service
11 provider?
- 12 **A.** We noted in fact the possible bill impact at the retail level. I think they were judged
13 to be relatively limited. I think the more critical attention was on the margins CPs
14 would be expected to capture or seek to capture porting customers.
- 15 **Q.** Let's try again. Just to be clear, at the moment it's my understanding, perhaps you can
16 confirm, that CPs do not levy a charge on their subscribers for opting to use number
17 portability?
- 18 **A.** My understanding is that at a residential retail level that's broadly correct. I do not
19 have the knowledge in relation to business retail pricing.
- 20 **Q.** So if there are any, they weren't directly considered by you?
- 21 **A.** No, they weren't brought to our attention in this project.
- 22 **Q.** You could have chosen either LRIC or LRIC+ without any risk to the provision of
23 number portability to those subscribers who do change and request to retain their
24 number; that's right, isn't it?

1 A. Sorry, I wonder if you could --

2 Q. There's no suggestion that your choice of cost standard would somehow affect the
3 ability of CPs to fulfil their requirement on them to provide number portability to
4 their subscribers?

5 A. So I do not think that was a question that we came to find in the guidance.

6 Q. No. Can you go to your witness statement at paragraph 27, please. This is where
7 you make the argument that:

8 "Prices at marginal cost, proxied by LRIC in regulatory practice, are
9 typically considered first best ... and that prices above LRIC involve
10 a loss of allocative efficiency."

11 Is that right?

12 A. That's correct.

13 Q. So the higher over LRIC that a service is priced, the greater the loss of allocative
14 efficiency, is that right?

15 A. In theory and in a narrow sense, that's correct.

16 Q. We are looking here I think in a narrow sense because we are dealing what we call the
17 first best world?

18 A. Correct.

19 Q. And there's also detriment to consumer welfare, isn't there, as prices go higher over
20 LRIC on this approach?

21 A. In this first best (inaudible), yes.

22 Q. You go on to explain at your 28 that it is necessary of course for certain services to be
23 priced above LRIC to ensure costs recovery when there are fixed and common costs?

24 A. That's correct.

- 1 Q. That is why, in commercial terms, it's exceptional to price at LRIC?
- 2 A. I think that's right. Typically firms would be pricing above LRIC. It would depend
3 on the competitive intensity. Some would be priced closer to, some further above.
- 4 Q. But all would be pricing so that somehow they can recover their fixed and common
5 costs?
- 6 A. Correct.
- 7 Q. And in regulatory terms as well it's a fundamental principle that CPs, like BT, should
8 have a reasonable opportunity to recover their common costs?
- 9 A. That is fair, yes.
- 10 Q. Even in SMP markets?
- 11 A. Correct.
- 12 Q. If we depart from allowing a particular service to recover any proportion of common
13 costs, there needs to be sufficient benefit, doesn't there, from the lower prices for that
14 specific service, to outweigh the general presumption that common costs recovery
15 should be broadly spread?
- 16 A. I think it really does critically come to that trade off between the expected benefits of
17 pricing one service at LRIC with the common costs being recovered elsewhere, and
18 that benefits analysis should not just be framed within a narrow allocative efficiency
19 perspective particularly when we are talking about wholesale charges that would
20 affect competition between CPs.
- 21 Q. So we are looking then for sufficient benefit from the exclusion of common costs to
22 justify that exceptional approach?
- 23 A. I think that's fair, yes.
- 24 Q. One of the reasons is, and we heard this from Dr Maldoom earlier, if you do not

1 include an allocation to the common costs for a specific service, let's take APCCs,
2 those common costs must be recovered elsewhere, so other charges must be raised
3 further above LRIC and so, by definition, that must in turn involve a loss of
4 allocative efficiency and a detriment to consumer welfare in respect of those
5 services?

6 **A.** Insofar as the margins on the other services do not already recover those common
7 costs, that would be correct, that other prices would have to go up, but I think it
8 would require close examination as to whether those other prices would go up or
9 would need to go up.

10 **Q.** Inter-switch conveyance, BT contends, is competitive. I think if we look at your
11 paragraph 59 of your report, in effect, without accepting that proposition, you are
12 prepared to assume it to be correct for the purposes of your evidence?

13 **A.** Sorry, can you clarify the question?

14 **Q.** You record here in 59 that you do not propose to offer a firm conclusion on the
15 competitiveness of inter-switch conveyance for ported traffic. You say:

16 "Even if ISC for ported traffic were effectively competitive, as I argue
17 below, this is not at the core of why I disagree with BT."

18 **A.** Correct.

19 **Q.** So for the purposes of your evidence at least you are prepared to assume that ISC is
20 effectively competitive?

21 **A.** So if we assume ISC is effectively competitive for traffic in general, non-ported
22 traffic, then -- but I wasn't opining on that in the subsequent analysis set out
23 underneath, from paragraph 60 onwards.

24 **Q.** I think we can agree as well in light of the evidence that we have already heard that the

1 higher the costs of ISC, set as part of the APCC, the more CPs would be incentivised
2 to avoid consuming ISCs by identifying alternatives, identifying DLEs and tandem
3 switches at which they can interconnect directly to collect their ported traffic, for
4 example?

5 **A.** So the pricing of APCCs will have some bearing on that analysis, I think has been laid
6 out by the witnesses before me, as well as certain other factors.

7 **Q.** It is not just some bearing, is it? There's an equation, there's a cost-benefit analysis.
8 On one side of the equation you have the costs of ISC, whatever they are, they may
9 go up or down, and on the other side of the equation you have the cost savings which
10 you would realise by avoiding consuming that which would depend on the number of
11 ported minutes that you are actually connecting to collect?

12 **A.** Yes, broadly speaking, yes.

13 **Q.** So if ISC is cheaper than the alternative of augmenting an RCP network, a CP can be
14 expected to choose to continue to consume ISC and not to augment their network?

15 **A.** I agree that as price falls, one might expect a CP to continue sending traffic in that
16 direction, if everything's equal.

17 **Q.** It's not a surprising proposition in the context of a competitive market that whether
18 CPs will substitute for ISC depends on the price of ISC?

19 **A.** I think it depends on the price of ISC and the cost or price of the alternatives, yes.

20 **Q.** Of course ISC cannot be raised -- sorry, the price of ISC cannot be raised by BT above
21 LTC and ITC rates applicable for the conveyance of a non-ported call over the same
22 route, can they?

23 **A.** I must say I am not sure, because I wonder what you are taking as given in terms of
24 regulation, for example.

- 1 **Q.** You have excluded, Ofcom has long excluded from any cost recovery what is defined
2 as additional conveyance costs or ACC?
- 3 **A.** Correct.
- 4 **Q.** What that means in practice is that BT can't charge more for a ported call than it would
5 charge for a non-ported call over the same route?
- 6 **A.** I think that's correct on the point of the same route. So the key issue is the difference
7 of the dog-leg. But where, if you like, the pricing of the dog-leg sort of between
8 node points is priced the same as the other services were they not ported, then yes.
- 9 **Q.** It's not just the route of the dog-leg, it's that you can't apply a rate which is higher. If
10 you are applying a rate of ITC or LTC for the purposes of calculating APCC which is
11 higher than would be consumed by a call on the route, that would be disallowed.
12 That would be inconsistent with condition GC18.5, wouldn't it?
- 13 **A.** I think that's, well, that's why I say in relation to the earlier question, that it depends
14 upon the view of the regulation. So far as the regulation was seen as imposing that
15 limit then I couldn't disagree.
- 16 **Q.** I am not sure I follow your answer. That's just a straightforward black and white
17 term of GC18.5: no additional conveyance costs?
- 18 **A.** If we read GC18 as saying: read across the price that you would pay for inter-switch
19 conveyance into the APCC, with no deviation and no subsequent renegotiation or
20 change, then I think that would be correct.
- 21 **Q.** It doesn't say that. It says you can't charge more. You could certainly charge less
22 consistently with 18.5. You do not have to apply the same rate. But you can't
23 apply a higher rate, can you?
- 24 **A.** In relation to the point on the additional conveyance charge, my understanding was

1 that that was primarily concerned with what I think was described by Dr Maldoom as
2 the bounce leg.

3 **Q.** The tromboning costs, it excludes tromboning costs. That's not all it excludes, does
4 it? Do you want to look at it?

5 **A.** By all means, yes.

6 **Q.** Bundle BT1, tab 10. You need to look at 18.5(b) first of all:

7 "The donor provider shall make no charge in relation to additional
8 conveyance costs."

9 Do you see that?

10 **A.** Yes.

11 **Q.** No charge for that. And then we have to turn the page to see what additional
12 conveyance costs are and that's defined at 18.11(a). Additional conveyance costs
13 means:

14 "Any costs incurred by the donor provider associated with the resources
15 used in (i) effecting the switch processing required to set up each ported
16 call, and (ii) providing the switch and transmission capacity for any part
17 of the duration of each ported call additional to the costs of conveyance
18 of non-porting calls from the donor provider's network to the recipient
19 provider's network."

20 **A.** Yes.

21 **Q.** So does that mean, in your approach, that effectively LTC and ITC rates are capped
22 and can't be set higher for a ported call than they would be for a non-porting call
23 going between the DCP and the RCP's networks?

24 **A.** Yes, on GC18, yes.

1 Q. So the price is constrained, that is the APCC routes are constrained by the ITC and
2 LTC rates which are in turn constrained by a competitive market?

3 A. Through the mechanism of GC18 capping it, yes, but on the -- sorry, yes.

4 Q. If we turn to your 34B, please, that's your witness statement, 34(b). This is your
5 summary of Ofcom's decision. At (a) you say there are good reasons to minimise
6 costs faced by an RCP. We will come back to that in a bit.

7 At (b) you say:

8 "Porting charges below LRIC impose a loss on the DCP ...(Reading to
9 the words)... However it is not necessary for porting charges to be priced
10 above LRIC because common costs can be recovered on other services."

11 And you go on to make the point:

12 "In competitive markets, a losing provider would not expect to be able to
13 earn revenues, let alone contribute to common costs, when it loses
14 a customer."

15 Is it right that you have considered first of all whether it's necessary for porting
16 charges to be priced above LRIC? That has been your approach?

17 A. Yes.

18 Q. You expand on this same point. So that you have not just a summary version, you
19 can look at 52(a) as well. You say there:

20 "It's not clear to me why a mark up on LRIC is either necessary or
21 optimal ...(Reading to the words)... a customer it has lost."

22 That's right, isn't it?

23 A. Yes.

24 Q. It's equally true, isn't it, that in a competitive market a losing provider would not

1 expect to be compelled to continue to provide a service to a customer it has lost,
2 that's right, isn't it?

3 **A.** I think that would be typically correct. In an unregulated market CPs probably,
4 sorry -- suppliers in general I wouldn't expect to be compelled unless there was --

5 **Q.** If you lose a customer, not only do they stop paying you but you stop providing a
6 service to them?

7 **A.** By and large, I agree.

8 **Q.** Two sides of the same coin. But in the case of porting, the loss of a retail relationship
9 with a customer creates a new wholesale relationship with the RCP, doesn't it?

10 **A.** It does, yes.

11 **Q.** So the DCP has to continue to provide a service, it's just that it is provided at a
12 wholesale level rather than a retail level?

13 **A.** Yes, a new wholesale relationship is opened up.

14 **Q.** And one of the characteristics of that relationship is that the DCP has to provide that
15 service whenever traffic for a ported customer is delivered to it by an OCP?

16 **A.** Correct.

17 **Q.** But the DCP doesn't get to choose that, does it? There's no choice in the matter at all?

18 **A.** No, not at a call by call level.

19 **Q.** If an OCP and an RCP happen to arrange direct routing arrangements between
20 themselves then of course the DCP will drop out of the picture?

21 **A.** Precisely.

22 **Q.** But that is entirely a matter for the OCP and the RCP. It's not something that the
23 DCP has control over?

24 **A.** Correct.

- 1 **Q.** So the DCP cannot influence the choice of the OCP as to where to deliver the traffic?
- 2 **A.** Sorry, just to rephrase. The DCP can't influence the choice of the OCP?
- 3 **Q.** As to where it, the OCP, delivers the traffic, whether or not it delivers it to the OCP or
- 4 not?
- 5 **A.** Taken in the abstract that might be correct. But if I could illustrate with a broader,
- 6 specific example, the BT one. So where OCPs are delivering to the BT local
- 7 exchanges, that is by virtue of the incentives that arise in relation to what is
- 8 essentially the calling party pays arrangements and the incentive that gives to far end
- 9 handover, ie an originating CP will be incentivised to carry the call as far as possible
- 10 on its network and handover in this case to the BT terminating node --
- 11 **THE CHAIRMAN:** You are talking about a non-ported call?
- 12 **A.** For traffic in general, for a call to a BT number range, you will try to carry it as far as
- 13 possible on your own network and hand over to the last node --
- 14 **MR PALMER:** For a ported call as well, because of course the OCP doesn't know
- 15 whether it's ported or non-ported, it just delivers a call to where it believes it is hosted
- 16 or as close to that point as its network will take it.
- 17 **A.** That's why I qualify my answer, because the routing arrangements for a ported call
- 18 will be a function therefore of the location, distribution and number of terminating
- 19 nodes of what is now the DCP, but will be a terminating CP otherwise, and of course
- 20 its pricing for the associated termination and other legs to get to that point.
- 21 **Q.** So again, to repeat my point, the DCP does not influence the choice of the OCP as to
- 22 where it delivers the traffic?
- 23 **A.** Beyond that larger network architecture point and the pricing, in relation to traffic in
- 24 general, yes.

- 1 **Q.** And then the DCP obviously has to deliver that what becomes a ported call onto the
2 RCP, and the DCP has to charge specifically the RCP for that service. It's not open
3 to the DCP to decide to charge the OCP instead, is it?
- 4 **A.** Under current arrangements, that's correct.
- 5 **Q.** Even if BT would prefer to charge the OCP it must charge the RCP for that service?
- 6 **A.** Under current arrangements, that's correct.
- 7 **Q.** Under the current arrangements that Ofcom has made?
- 8 **A.** Correct.
- 9 **THE CHAIRMAN:** Mr Palmer, would this be a convenient moment for a break?
- 10 **MR PALMER:** Just a couple more and then yes, sir.
- 11 **THE CHAIRMAN:** Please do.
- 12 **MR PALMER:** We also know BT would have liked to have moved to direct routing so
13 no onward service would need to be provided by it even though no APCCs would
14 then be paid to it as a result?
- 15 **A.** My understanding is that BT would like to create the opportunity -- now would like to
16 create the opportunity or incentive for people to move to direct routing, whereas
17 I think previously BT was rather less keen on the centralised solution to achieve
18 direct routing.
- 19 **Q.** I won't go over that. But we know also that BT would have liked an OCP rule and
20 therefore not to charge the RCP at all in terms of APCCs?
- 21 **A.** That was BT's position in the guidance.
- 22 **Q.** And Ofcom said no to that.
- 23 **A.** Yes.
- 24 **Q.** So a service that BT doesn't want to have to provide but which it must provide at a cost

1 to itself, and which it doesn't want to charge RCPs for in any event. Bearing all that
2 mind, which I think we have agreed, is Ofcom's counsel correct in your view to seek
3 to characterise BT's APCCs as levying a tax on porting? Is that a fair
4 characterisation?

5 **A.** So I think the way I would characterise it is that the requirements to provide porting in
6 a system of onward routing effectively adds cost or risks to the system and I think
7 that's the characterisation within which, if you like, you can characterise it as being
8 a tax or an additional charge that would not be there if you were in the better world of
9 effectively starting with a clean sheet and having a direct routing arrangement. But
10 we do not start from the situation of having a clean sheet, we have onward routing.

11 **Q.** The tax. It's a tax imposed by Ofcom, is it not?

12 **A.** It is a requirement to provide porting, if you like, that is the requirement Ofcom
13 provides, and the charging rules which Ofcom provides. Then within that, CPs have
14 effectively priced based on their current network arrangements and routing.

15 **MR PALMER:** Sir, that's a convenient moment. I am very grateful.

16 **(3.30 pm)**

17 (A short break)

18 **(3.40 pm)**

19 **MR PALMER:** Now Mr Godfrey, we have been dealing with the framework within
20 which the choice of cost standard must be made. Let's now come to the choice that
21 Ofcom did make and the reasons it gave for it. Can I ask you to take out bundle BT1
22 and turn to tab 8. It is chapter 4 in which the choice of cost standard is evaluated?

23 **A.** Yes.

24 **Q.** You work your way through in that chapter the various principles of cost recovery, but

1 the ones which end up having a bearing on the final decision, and I think there are
2 three, are cost causation, cost minimisation and effective competition?

3 **A.** Those were the main factors.

4 **Q.** We are right to concentrate on those three, aren't we?

5 **A.** I think that's fair, the decision on the cost standard, yes.

6 **Q.** Yes. Let's start -- we will take them in the order in which they appear in the decision
7 and let's start with cost causation. It begins at 4.32 at page 28. We see that heading
8 just above 23, "Cost Causation", and we can skip straight to the end of that section,
9 4.48, to see where you ended up:

10 "Our conclusion is that both LRIC and LRIC+ could be consistent with
11 the cost causation criterion. Under a RCP pays charging rule, we have
12 a slight preference for LRIC as this more directly reflects the costs
13 caused by the decision to port."

14 And then a reference to termination rates, similar reasons, that:

15 "We prefer that common costs are recovered from the competitive side of
16 the market where possible."

17 Let's just concentrate on that main conclusion. First point, LRIC and LRIC+ could
18 point either way. What you describe as the slight preference for LRIC is specific to
19 the RCP pays charging rule?

20 **A.** That's what is said there, yes.

21 **Q.** We bear in mind within this framework that the RCP is going to pay. We bear in
22 mind that what you are doing is applying these cost principles of general application
23 to the specific question of how to choose between LRIC+ and LRIC. On choice of
24 cost standard, by definition, on that approach, the principle of cost causation will

1 always point to LRIC rather than LRIC+, won't it?

2 **A.** So cost causation would point more towards LRIC and perhaps if I could explain why.

3 The reason for looking at cost causation is it gets you straight into principles
4 particularly of static efficiency and allocative efficiency because it looks at what
5 causes cost to arise. As has been discussed before, economic efficiency and
6 allocative efficiency is about aligning prices with marginal costs and, in this context,
7 incremental costs, so it's the building block for it.

8 What I would like to do is just clarify whether the question is saying: under RCP
9 pays, you would always get to LRIC as being the correct answer under cost
10 causation.

11 **Q.** No, let me put it this way, let me rephrase it. When you are choosing specifically
12 between LRIC and LRIC+, you are making a binary choice between those two
13 options, you are applying the six principles of cost recovery which we know are
14 applicable in different contexts for different purposes. But in this specific context it
15 doesn't matter what service you are talking about. By definition, the principle of
16 cost causation, as you have interpreted it, will always point to LRIC rather than
17 LRIC+, ie it will always point to the exclusion of common costs?

18 **A.** I do not think it would unambiguously point to the exclusion of common costs. The
19 reason I say that is the reason why LRIC might be consistent with cost causation is
20 because the plus, if you like, is calculated on top of the LRIC. So if the LRIC is
21 following cost causation, and where you are recovering the common cost based on
22 the underlying incremental cost, so for example an equi-proportionate mark up,
23 rather than some broader vaguer sort of top down accounting cost, then I think that's
24 why LRIC+ could be consistent with cost causation.

1 I think the reason why you would not necessarily leap straight to saying it's always
2 going to be LRIC under cost causation is because, as I say, cost causation gets you
3 into considerations of economic efficiency. So from memory it's something like
4 4.24 of the same chapter which explains how, when looking at economic efficiency.
5 So 4.24.1, so economic efficiency is covered under cost causation, cost minimisation
6 and distribution of benefits, and at 4.25 we explain why.

7 So I wouldn't say it will always lead to it at the exclusion of LRIC+, it will depend
8 upon some of the considerations around common cost recovery.

9 **Q.** If you take a narrower approach to the principle of cost causation, what I am putting to
10 you is when you take a single service, by definition that single service will not have
11 caused the common costs?

12 **A.** Taken on its own but on the assumption that other services are also provided, then you
13 can't attribute the common cost to that.

14 **Q.** And you could say that of every single individual service within that group which
15 share those common costs?

16 **A.** That is correct.

17 **Q.** But of course common costs are also caused, it's just that they are caused by a number
18 of services taken together, rather than by any single service?

19 **A.** That's correct. They arise as a result of the suite of services sharing that common
20 cost.

21 **Q.** So as soon as at least one of those services within that group is provided, common
22 costs are caused?

23 **A.** Effectively. And if only that service was provided, the stand alone costs would be the
24 sum of the incremental costs in all of those common costs.

1 **Q.** So if you look at your paragraph 4.41, which explains your application of this test, if
2 you look at that last sentence in particular:

3 "Consistency with the cost causation principle suggests that common
4 costs should be recovered from the services within the group to which
5 they are common but they do not have to be recovered from any one
6 service."

7 That will always be true?

8 **A.** That's certainly what we envisaged.

9 **Q.** That is why, when you turn the page to 4.42, the next paragraph, you say after the
10 italicised quote:

11 "While number portability is not a service where we have found
12 individual CPs to hold SMP, it is clear that number portability is not
13 a contestable service since only the DCP can provide onward routing to
14 the RCP. This would point towards common costs being recovered
15 from services other than porting."

16 Just looking at that sentence there, "only the DCP can provide onward routing to the
17 RCP", what we are talking about there is only true of switch conveyance, not of
18 inter-switch conveyance?

19 **A.** So it is -- so as you say, here the guidance was concerned with conveyance in general.

20 It would be fairly unambiguously the case in relation to switch conveyance, mobile
21 or fixed which was under consideration here. In relation to the inter-switch
22 conveyance, as I say, that's not something that I have gone into depth on in my
23 evidence but obviously has been addressed by preceding witnesses.

24 **Q.** I should make clear that all my questions proceed on the basis that Ofcom is right to

1 consider inter-switch conveyance is covered at all by this condition. Obviously
2 there's a quicker answer to all of this if the answer to that is no. So I am assuming
3 that. And I am assuming, as you have just confirmed, that here you are talking
4 about all conveyance. But the point I am putting to you is that point simply isn't true
5 in respect to inter-switch conveyance rather than switch conveyance; it's wrong?

6 **A.** I have not have undertaken an assessment of the competitiveness of inter-switch
7 conveyance for ported traffic.

8 **Q.** But you are assuming for the purpose of your evidence that it is competitive, you have
9 told us?

10 **A.** Yes, because as I say, that piece of the analysis was not a piece of analysis that Ofcom
11 had undertaken a determination, for example, and it's not an analysis I have done.

12 **Q.** We know for example that TalkTalk doesn't consume inter-switch conveyance at all
13 from the DLE because it uses a DLE handover and collects its traffic there. It's not
14 true, is it, that only the DCP can provide onward routing when we are talking about
15 inter-switch conveyance?

16 **A.** For elements of inter-switch conveyance it is not only the DCP that could
17 provide -- because it's fair -- the TalkTalk example is an example, perhaps, of
18 self-supply in relation to the inter-switch.

19 **Q.** That is the point. CPs can self-supply instead of consuming inter-switch conveyance
20 at whatever level.

21 **A.** Sorry, when you say 'at whatever level' - of the charge or whatever node?

22 **Q.** Whatever node, yes.

23 **A.** I am not sure whatever node because questions have been raised in relation to the
24 commercial viability of doing so or technical viability.

1 Q. Different point; they can, they can provide it. Whether it would be viable for them to
2 choose to or vary from switch to switch, we know that, but they can provide it?

3 A. I think the idea of something being competitive depends on more than just the "they
4 could". It is: what are the market outcomes? I do observe that there are relatively
5 limited CPs purchasing on the basis of the pure switch conveyance at the exclusion
6 of any inter-switch conveyance.

7 Q. I will try one last time: this is wrong, isn't it, insofar it is intended to apply to
8 inter-switch conveyance?

9 A. When you say "this is wrong", which bit of paragraph 40?

10 Q. "Only the DCP can provide onward routing to the RCP"?

11 A. In relation to certain bits of inter-switch conveyance it appears that, yes, it is not only
12 the DCP providing that conveyance.

13 Q. Right. The rest will turn to the other evidence that the Tribunal has heard and I do not
14 need to take up time over it.

15 Let's pass to cost minimisation. We can see that begins on page 31. I think if we
16 go to paragraph 4.52:

17 "As explained in the consultation, porting charges reflect activities
18 ...(Reading to the words)..." The DCP's incentives to minimise such costs
19 are directly related to the proportion of these costs it has to bear. As a
20 general principle, the higher the proportion of costs that the DCP is
21 required to bear, the stronger its incentives to minimise the costs."

22 So if we approach it first at the level of general principle, it is fair to you to say it is
23 qualified when we get to 4.56 over the page:

24 "In both mobile and fixed sectors ...(Reading to the words)... may in any

1 case be less material."

2 In 4.57 you conclude:

3 "We note that LRIC would provide only slightly stronger incentives for
4 the DCP to minimise its porting costs than LRIC+."

5 It's because of those independent incentives to minimise costs is what you are
6 saying?

7 **A.** To minimise the common costs, yes.

8 **Q.** And indeed you say in your witness statement, just again to be sure I am being entirely
9 fair to your evidence. At paragraph 98 you set out that paragraph 4.56 I have just
10 read but you preface it by saying:

11 "In any case, in the Guidance, Ofcom did not pretend that the choice of
12 cost standard was a particularly important determinant of cost reduction
13 incentives."

14 **A.** So that's the conclusion there on the premise that the common costs are otherwise
15 exposed to competitive pressure which will act as the incentive to minimise them.
16 For, if you like, the active infrastructure insofar as the other conveyance services are
17 broadly competitive, that would be fair. For the switch conveyance, perhaps less so.
18 Another aspect is of course the passive infrastructure which would be common costs.
19 So property, vehicles, the duct network, where those assets are by and large also used
20 to support services where BT does still have significant market power, so fixed lines
21 and leased lines, for example.

22 **Q.** Just to unpack that slightly. First of all in paragraph 4.56, if you look back at that,
23 again, you are not focusing here on inter-switch conveyance in isolation. It's clear
24 that you are referring to all porting costs including switch conveyance and set-up

1 costs within this paragraph, aren't you?

2 **A.** This would be a general analysis.

3 **Q.** Yes.

4 **A.** Of porting related costs.

5 **Q.** If we extract from that, so it's in that context that you say there's already less material
6 difference and stronger incentives. But if we extract from that the specific position
7 of inter-switch conveyance and just apply the same logic just to inter-switch
8 conveyance, inter-switch conveyance we know shares the same use of the
9 infrastructure for LTC and ITC?

10 **A.** Ported inter-switch conveyance would share the same structure as LTC and ITC, yes.
11 And I was going to say so certainly for the, if you like, the active, shall we say, the
12 electronics, the ports and so on. In terms of the passive infrastructure, so property,
13 duct and so on, those will be more widely shared assets with other parts of the BT
14 network. So high bandwidth connectivity, for example, the leased lines products,
15 and similarly to an extent the lines to customers' premises.

16 **Q.** Even where there's SMP, typically Ofcom has for example price control measures in
17 place. They are designed to ensure that BT retains incentives to minimise its
18 common costs?

19 **A.** So that typically would be the aim of the incentive property, the price cap regulation.
20 In doing so you have got the asymmetry between the regulator and the regulated
21 company and questions of common cost allocation, if you like. The regulator to
22 an extent will play catch up with the firm's own cost allocation rules and that can be
23 quite a time consuming and intensive exercise to mimic the competitive pressure that
24 you would otherwise get if things were fully competitive.

- 1 **Q.** So in the context of inter-switch conveyance, given that shared use of infrastructure,
2 there is already overwhelming incentive on BT to minimise its common costs, isn't
3 there?
- 4 **A.** Up to a point, I would agree. I am not sure how overwhelming they are, I think that's
5 why it was a slight preference for LRIC, so I still think that there is a case for those
6 incentives. But to the extent that the common infrastructure is shared then the
7 concern around cost minimisation would be reduced.
- 8 **Q.** What proportion of the ported traffic is responsible for use of the shared assets related
9 to ITC and LTC?
- 10 **A.** I do not have to hand the -- sorry, is your question how much of LTC and ITC is used
11 in the APCC?
- 12 **Q.** Effectively, yes.
- 13 **A.** That is one question. There's then the question of how much does LTC and ITC use
14 assets that are not otherwise subject to competitive pressure apart from in the general
15 conveyance, and I do not have to hand the breakdown of the proportion of those
16 assets.
- 17 **Q.** There is no reason at all to think that recovery of the same common costs elsewhere
18 will lead to stronger or weaker incentives to reduce common costs, is there?
- 19 **A.** My general proposition would be competition rather than regulation is going to act as
20 a better discipline on cost minimisation, in this case common cost minimisation.
21 But the more that the common infrastructure is exposed to competition then the less
22 one might be concerned about cost minimisation incentives.
- 23 **Q.** Because these are effectively competitive services, LTC and ITC, there is all the
24 incentive that you could wish for already to minimise those common costs? You're

1 not going to add to those incentives to any material extent at all by adding ported
2 traffic into the mix, are you?

3 **A.** Yes. But as I say, LTC and ITC share infrastructure with other services which are not
4 necessarily used in competitive markets.

5 **Q.** Let's turn to effective competition, please, which is the next and final principle which
6 was applied in this context. We see that begins at page 32.

7 Before I go through your reasoning here, can we turn back to section 6 where you
8 were deciding between OCP pays, DCP pays, RCP pays, DCP and RCP 50/50 pays.

9 And can we look at 6.63, please, on page 64.

10 Here, to provide the context, you are applying the same principles, the same
11 principles of cost recovery to a different question, namely who should pay.

12 **A.** Yes.

13 **Q.** APCC, effectively. And at 6.63 you say:

14 "As we noted in the March consultation, we recognise that if the RCP
15 bore none or only a small proportion of the porting costs, it might be
16 encouraged to compete more vigorously for customers, resulting in
17 general benefits of enhanced competition."

18 So that would be a clear benefit in competition terms, in principle, to a rule other
19 than RCP pays, yes?

20 **A.** Yes.

21 **Q.** You go on to consider that. You also say:

22 "If the DCP has to...(Reading to the words)... compete more strongly and
23 not to lose customers."

24 But then at the final couple of sentences of that paragraph you say:

1 "However, we have already considered the external benefits from
2 competition arising from number portability, ie type 2 benefits, under the
3 'Distribution of Benefits' heading above. We do not consider it
4 appropriate to double count these benefits and therefore do not discuss
5 them further here."

6 And then your conclusion at 6.67, final sentence:

7 "We consider that DCP pays, and 50/50 DCP/RCP charging rules do not
8 perform as well as the RCP rule under the principle of effective
9 competition. On balance we consider that OCP pays and RCP pays
10 rules are equally likely to be consistent with effective competition."

11 That's the conclusion. It's a bit short on analysis but that's because effectively you
12 have done the relevant analysis under the distribution of benefits principle.

13 **A.** Yes.

14 **Q.** The upshot is OCP and RCP pays equally consistent, despite, one might say,
15 everything we said earlier about what we have referred to as the tax, which is the
16 result of an RCP pays rule. Despite that, not any more consistent or less consistent
17 with the effective competition rule to have an RCP pays rule rather than OCP pays?

18 **A.** So I think what I have identified here was effectively to eliminate the options in which
19 the DCP would bear all of the incremental costs or all of the costs itself. So, if you
20 like, RCP pays -- OCP pays and RCP pays. They were considered to be equally
21 likely to be consistent with effective competition on that consideration having
22 eliminated the alternative options.

23 **Q.** And to fully understand that conclusion we have to look back at the previous principle
24 which is the distribution of benefits principle, is that right?

1 A. Yes.

2 Q. On page 60?

3 A. Correct, which also considered one of the significant benefits being the broader
4 competitive effects that might arise from more porting and hence switches, what the
5 competition, MMC at the time, described as type 2 benefits.

6 Q. And the distribution of the benefits principle in a nutshell is that where we get to the
7 benefit, the server should pay for it, effectively?

8 A. Yes.

9 Q. So let's just look at the analysis there. At 6.40 we can see the benefits, three types of
10 benefit, and we saw the specific reference to type 2. Let's understand what type 1 is.
11 Type 1 is the benefit to customers who retain their telephone number when switching
12 suppliers, that includes savings from not having to change number and switching to
13 lower cost operator. So that's type 1, the benefits specific to those customers who
14 switch but retain their telephone number, that is right, isn't it?

15 A. That's correct.

16 Q. Type 2, the benefits which accrue to all UK telecoms customers:

17 "These arise from efficiency improvements and price reductions which
18 result from increased competitive pressure due to the availability of
19 number portability."

20 That is why you are referring back to it when we get to effective competition?

21 A. Yes, and that's the avoiding double counting point.

22 Q. Type 3, other resource savings, fewer number changes, misdialled calls, directory
23 enquiries, all of that, mainly described as call imported numbers as a result of there
24 being fewer number changes. Those are the three types of benefits. Types 2 and 3

1 accrue to all customers whereas type 1 is specific to the customers who switch.

2 **A.** Type 2 would be the benefits to all customers of, if you like, fixed lines.

3 **Q.** Yes.

4 **A.** Type 3 would be a benefit to most callers.

5 **Q.** Thank you. That's helpful.

6 **A.** Not just fixed customers.

7 **Q.** So a helpful clarification. And if we go to 6.48 we can see a summary of that:

8 >Type 1 benefits accrue directly to the porting customer and are therefore
9 >consistent with RCP pays. However, as noted above, type 2 and 3
10 >benefits can be thought of as 'externalities', meaning that benefits accrue
11 >to customers other than the customer that decided to port. And because
12 >of those, we have considered whether the distribution of benefits
13 >principle suggests we should deviate from RCP pays."

14 >So it's the type 1 benefits which strongly suggest RCP pays but the
15 >question is whether you depart from that.

16 The answer to that, the short answer was no. The reasons why we find that is those
17 benefits are mitigated, as you put it, at 6.51 to 6.52. 6.51:

18 >"We agree with BT that the presence of ...(Reading to the words)... the
19 >second reason is that currently the porting conveyance charges paid by
20 >RCPs are not passed through to only the porting customers but instead
21 >they are recovered from, and therefore shared across, all the RCPs'
22 >customers."

23 So it's not everyone who has to pay but it is the RCPs' customers who generally have
24 to pay, regardless of whether each one has in fact ported or not. Is that right?

1 A. Yes.

2 Q. At 6.54 we see Ofcom compares a 50/50 DCP/RCP charging rule to
3 an RCP charging rule. We find that if we compare that, the increase in
4 porting conveyance charges under RCP pays rules is at most
5 0.67 per cent relative to its total retail revenues.

6 That's right?

7 A. 6.54?

8 Q. Yes:

9 "If such costs were passed through to retail prices in full and distributed
10 across the whole subscriber base ...(Reading to the words)... £1.71 per
11 year for a fixed customer based on annual bills of £255."

12 A. That is an estimate of the customer bill impact, yes.

13 Q. Instead of sharing them 50/50, the RCP paying the whole lot.

14 A. Yes.

15 Q. Those figures we can see from the footnotes are derived from 2012 to 2013 prices.

16 That's footnote 140. So that figure of £1.71 was based on a change in porting
17 conveyance charges based on LRIC+; is that right?

18 A. It would have been, yes.

19 Q. So at LRIC+ that's the difference a 50/50 split makes. And those figures were
20 considered a reasonably accurate basis of comparison for the purposes of this
21 guidance?

22 A. They were relatively broadbrush figures, I think.

23 Q. Gave you an idea of the scale.

24 The effect of the dispute determination in this case between Vodafone and Gamma

1 on the one hand and BT on the other, the effect of it was broadly to reduce APCCs for
2 Vodafone and Gamma by just over a half, wasn't it?

3 **A.** In that order of magnitude, yes.

4 **Q.** Yes, the reference for that is 5.93 of the final determination. So the actual effect on
5 costs saved by each RCP as a result is broadly equivalent to a similar amount, ie
6 around £1.71 per year per customer whether or not those savings are passed onto the
7 RCP's customers, that's right, isn't it?

8 **A.** So I think this would be the effect when averaged over all customers. If you are
9 looking at just customers that have ported, obviously this would be higher, because
10 you would be dividing through by a smaller number of customers. So the £1.71 and
11 the £1.24 reported here are spread over all customers.

12 **Q.** So it is per year per customer, and your point is bearing in mind we are looking at all
13 the RCP's customers, not just the RCP's ported customers?

14 **A.** Yes.

15 **Q.** And we bear in mind that this is all I think consistent with your reasoning when you
16 consulted. But if you just turn back to the consultation document at tab 6 and turn
17 within that at tab 6 to page 46, we have a similar paragraph although slightly
18 different figures, it's an increase of £1.59, so 12p lower as the calculation stood
19 at that time. That was adjusted I take it subsequently, is that right?

20 **A.** That's correct.

21 **Q.** A similar order. You say at 6.34:

22 "For example, if a fixed customer expected to switch on the basis of an
23 annual bill of £256, an increase of £1.59 seems unlikely to deter the
24 customer from switching."

1 That's right, isn't it?

2 **A.** So that's the impact on the end customer.

3 **Q.** Yes.

4 **A.** Yes.

5 **Q.** If you join that network, the cost -- because the RCP wouldn't be discriminating in its
6 charges between its ported and non-ported customers, it would be applying any
7 increase generally, that's right, isn't it?

8 **A.** If they are spread across, this is the order of magnitude for the average line.

9 **Q.** If we turn back to the guidance, we can see some further indications of the scale. At
10 paragraph 7.12 you see there, second sentence, 7.12:
11 "For the five fixed CPs ...(Reading to the words)... and calls revenues."
12 It followed from that, this is 7.18, the final sentence:
13 "Given the sums involved, we do not expect the changes to the flow of
14 funds between CPs to be significant."
15 That's right, isn't it?

16 **A.** Sorry ... (Pause)

17 **Q.** Any change would be very small in the context of fixed CP retail revenues?

18 **A.** Yes, that's what it says.

19 **Q.** If we go, you can see that reflected at 7-point -- I do not need that. Let's go to 4.24
20 again. 4.24, we referred to this earlier. 4.24.3 on page 26, second paragraph. Do
21 you have it?

22 **A.** Not of the consultation.

23 **Q.** No, I am in the guidance now.

24 **A.** Page 26.

1 Q. 4.24.23, you can see in the second paragraph there:

2 "We expect the impact on retail prices ...(Reading to the words)... so
3 unlikely to adversely impact vulnerable customers."

4 That's consistent with what we have seen elsewhere, isn't it?

5 A. Yes.

6 Q. So if we go back to that discussion of distribution of benefits which is page 63 we
7 were on. Perhaps we can turn to 64 now. Sorry, I will go to the end of 63,
8 paragraph 6.56. You start going to the conclusions that you draw on this question of
9 who pays and you are saying:

10 "While customers of the OCP may gain to some extent from competition
11 benefits, we do not consider it efficient or...(Reading to the words)... it
12 might be appropriate under the distribution of benefits principle for the
13 OCP to bear some of the porting costs but other parties also benefit from
14 number portability. Indeed we consider that the customers of the RCP
15 are likely to be significant beneficiaries."

16 Do you see that?

17 A. That's what it says.

18 Q.

19 "In summary, under an RCP pays charging rule ...(Reading to the
20 words)... which is consistent with recognising the presence of the
21 external benefits created by a customer's decision to port."

22 So the upshot of all this is that the RCP is ultimately chosen under the costs
23 distribution principle -- sorry, distribution of benefits principle, and that feeds into
24 the effective competition analysis in the way that we saw at 6.63.

- 1 A. Yes.
- 2 Q. So put all that together, we add in the cost causation principle, which I haven't been to
3 but I think you will recall that that indicated RCPs pay, and we get the decision by
4 Ofcom to pass on porting costs to RCPs generally, yes?
- 5 A. The section 6 conclusion on who pays.
- 6 Q. Yes. The overall conclusion is RCP pays.
- 7 A. RCP pays.
- 8 Q. Yes. Part of the supporting reasoning for that is that the decision to pass on porting
9 costs to RCP's customers generally, ie indirectly, spreading across the RCP customer
10 base, is not material to consumer choices even at LRIC+ prices.
- 11 A. So in terms of the net effect on the retail customer base of the RCP, the purpose of that
12 analysis, the spreading across the entire customer base was this was relatively
13 modest within the typical customer bill.
- 14 Q. Even at LRIC+?
- 15 A. At LRIC+. That was an analysis of the impact on the retail customers, not obviously
16 an assessment of the impact on the margins of the RCP and their incentives.
- 17 Q. It is not material to consumer choices. We can see there was an effect on consumers
18 but the decision is not material to consumer choices. It follows there is no material
19 impediment to RCPs competing for those customers. That follows, doesn't it?
- 20 A. Sorry, can I clarify. You are saying the fact that the end customer bill might not
21 increase much means there's not an impediment to effective competition?
- 22 Q. You missed out a stage, Mr Godfrey. Your own reasoning was the fact it would
23 increase to that little extent was not material to consumer choices. That was your
24 conclusion. And it follows from that that there's no material impediment to RCPs

1 competing for those customers?

2 **A.** I think there's then the leap which is: as a proportion of the customer bill the changes
3 here look relatively modest. I think where it's perhaps less modest is in terms of the
4 margins of the RCP. The best way would be just a crude illustration. With
5 an average customer bill of £250-odd, if there was a return on sales margin of
6 10 per cent, we are looking at £25 per annum, then these kinds of small £1, £2, £3
7 amounts start to look more material in the margins of the RCP rather than necessarily
8 in the end customer bill impact where you're spreading obviously over all customers
9 and a large annual revenue from a typical customer.

10 **Q.** If these are profitable customers for an RCP to have, and it wants to attract them, that
11 difference in price is not going to amount to a material impediment to competing for
12 them, is it?

13 **A.** Insofar as a customer is profitable, I would say that the CP would always have
14 an incentive to try and compete for them. I think the key point is where the porting
15 charges add to the cost, reduce the margin, that that is a skew which will always be
16 faced by entrants. I think that is the point at which I become a little more concerned
17 about incentives to compete.

18 **Q.** If that were a material concern, we would expect to find it featuring in this analysis of
19 effective competition relating to the RCP pays rule. We would expect to see that
20 factored in to your choice of what the charging rule should be, wouldn't we?
21 Somewhere.

22 **A.** Sorry, can you refer me --

23 **Q.** It's not there. That is the thing. We would expect -- if the concern that you have just
24 expressed was material, we would expect to find that factored into your analysis

1 under section 6 as to whether or not RCP pays is the right rule.

2 **A.** Well, the choice of the cost standard was predicated on RCP pays to section 4. The
3 conclusion was there are indications for effective competition. And the choice of
4 who pays, you know that ended up with RCP pays. I'm just trying to understand the
5 leap you are making.

6 **Q.** The concerns you have just expressed, if they were material, would appear in section 6
7 of the Ofcom guidance as to whether an RCP pays rule is appropriate or not. That's
8 what I am putting to you.

9 **A.** Was there not a reference to the RCP paying nothing might be, in terms of effective
10 competition, a --

11 **Q.** 6.63.

12 **A.** 6.63, yes.

13 **Q.** "We recognise that if the RCP bore none or only a small proportion it might be
14 encouraged to compete more rigorously. But then that's rejected. That's
15 overwritten.

16 **A.** One characterisation one could put is the difference between trying to achieve a level
17 playing field or an entry assistance. If one were concerned with entry assistance,
18 you might say the RCP pays nothing whatsoever in any circumstances. Once you
19 get into a situation where I'm slightly more concerned with just effective competition
20 and a level playing field for all, on that basis it's perhaps not unreasonable that the CP
21 that acquires the customers contributes to the cost of providing porting, but not at
22 such a level that that then disproportionately erodes the margin of the CP that
23 acquires the customer that bought.

24 **Q.** This isn't about the level, it is about the principle here. You say it takes LRIC as

1 a given, but that's no answer, Mr Godfrey, because you are already, in considering
2 RCP pays only on the basis of a LRIC rule, you are already excluding the possibility
3 of a merit or otherwise of what amounts to an RCP/DCP split?

4 A. Sorry, you were asking me what specifically?

5 Q. Given that the status quo was LRIC+ APCCs?

6 A. Yes.

7 Q. The net effect of all this, as we know it was about a 50 per cent reduction that came out
8 as the answer. Effectively what you have done is split the APCCs on a roughly
9 50/50 basis between the RCP and the DCP, yes?

10 A. As it turns out the effects are not that different.

11 Q. But that's precisely the split that here is rejected in favour of an RCP pays rule, isn't it,
12 on the basis that there is no material effect on competition arising?

13 A. I think that is by chance of the virtue of the particular split and I am not sure that's
14 where the principles necessarily get you to.

15 Q. I see. Let's move on to this. Can we look at your paragraph 34(a) which is where
16 you are explaining --

17 A. Sorry, are we in Godfrey 1?

18 Q. Yes, your witness statement. You are explaining the choice of LRIC over LRIC+
19 where you are saying:

20 "There are good reasons to minimise the costs faced by a CP when
21 acquiring a customer who switches from, and ports their number to,
22 another CP."

23 Do you see that?

24 A. Yes.

1 **Q.** The emphasis is on minimising costs, not just ensuring that prices are cost orientated.
2 They are saying something more than that. When we look at your reasons there,
3 looking at that paragraph, you say:
4 "First, lower switching costs facilitate the competitive process which
5 benefits all customers."
6 Just pausing there. That is what you referred to when you were assessing type 2
7 benefits, isn't it?
8 **A.** Yes.
9 **Q.** And second:
10 "There are wider benefits to callers, not just those that port their
11 number."
12 That is a reference to type 3 benefits, isn't it?
13 **A.** That's correct.
14 **Q.** What falls out of account here entirely is type 1 benefits, the benefits to the RCP's
15 customers themselves. It has dropped out of your analysis, hasn't it?
16 **A.** I'm just seeing if it was referenced earlier. (Pause)
17 As you said, the type 1 benefits are not referenced at that point in my summary.
18 **Q.** No. So when you are saying there are good reasons to minimise the costs, we should
19 remember that you have found, in section 6, subject to the fact that the RCP's
20 customers are the ones getting the benefit and so should bear the costs?
21 **A.** So I wouldn't dispute that those type 1 benefits are present and that it's reasonable
22 for the RCP -- as I say, this is in a situation of trying to facilitate effective
23 competition -- that there should be a contribution to that from the CP serving the
24 customer that has ported.

1 Q. As you put it in your paragraph 50, same witness statement at paragraph 50, you say:

2 "In order to facilitate the competitive process, it is important that any
3 charges levied by the losing provider on its rival, the gaining provider,
4 are kept to a minimum."

5 A. That's what I say there.

6 Q. It's simply inconsistent, isn't it, with Ofcom's reasoning in section 6 of the guidance
7 where you decide that the RCP should pay a charge?

8 A. I am disinclined to go as far as to say it's utterly inconsistent. I think on the premise
9 of effective competition, is it reasonable for the RCP to make a contribution to the
10 cost providing the porting service? I would say, yes. If we are in a world of entry
11 assistance then one would go all the way, perhaps, and say the RCP pays nothing
12 whatsoever.

13 Q. Turn back to your 34(b) where you are summarising this.

14 **THE CHAIRMAN:** Mr Palmer, I think Professor Reid would like to ask a question
15 at this stage if that's all right.

16 **PROFESSOR REID:** If I may, because I think we are getting into quite a labyrinth of
17 costs and benefits, the possible missing categories like benefits to RCP customers.
18 What I wanted to know was: behind these various accounts of cost and benefits, at
19 any point were all potential customer benefits individually looked at and all potential
20 costs individually looked at, in a kind of explicit consumers'/producers' surplus type
21 of framework?

22 In other words, you have been talking about a full efficiency, if you like 'first-best,
23 type of competitive equilibrium, so that kind of calculation should be possible. But
24 actually one does search in vain for that form of calculation, and that sometimes

1 means there may be categories that are missing which are part of what the hunt is on
2 about at the moment.

3 So behind this is somebody who is an in-house researcher within Ofcom. Was that
4 kind of exercise undertaken, where you enumerate all potential customer types and
5 look at costs and benefits there in an explicit consumers' surplus/ producers' surplus
6 framework?

7 **A.** I think there was a qualitative assessment of, if you like, first the benefit to the
8 customer that switches, then the broader customer base of, if you like, customers on
9 the same network, so all the RCP's customers. And built up in a qualitative way we
10 looked at who might gain and who might -- who might benefit and where the costs
11 fell.

12 We didn't do a quantified cost-benefit analysis along the lines that you describe
13 looking at some sort of general equilibrium model of sort of switching in the fixed
14 telecoms sector.

15 Quite a sophisticated or a relatively sophisticated analysis was done by NERA for
16 the MMC and obviously that was admittedly in the mid 1990s, so there is a question
17 as to how much faith one would put on those numbers today.

18 What we didn't propose doing was anything to that degree of sophistication for these
19 purposes. What was felt was instructive was the relative ranking of how the
20 benefits might fall where, if I recall correctly, the type 1 benefits, which is the
21 benefits to the individual, were felt not to be as significant as the broader benefits of
22 competition engendered by more porting and switching, and the benefits to the
23 calling parties were felt to be relatively low compared to those first two.

24 **PROFESSOR REID:** I am familiar with the NERA study and those methodologies do

1 have their weaknesses as well. But one of the big advantages is it goes beyond
2 qualitative assessment and allows you to tot up benefits to different consumer types,
3 for example, and to tot up the dis-benefits, if you like, to get an aggregate sort of
4 score. Whereas what we are doing here is really fiddling around to look at small
5 categories of advantage and disadvantage without seeing how it adds up in the large.
6 So is there a reason why you didn't update, as it were, a NERA type study?

7 **A.** I think in the realms of having attempted these in the past, in fact ironically, I think
8 I was supporting my colleague at the time on mobile termination rates, just over
9 10 years ago, and I think Dr Maldoom was acting for one of the parties at that time,
10 where fairly sophisticated models of consumer/producer surplus, and the
11 distribution of how changes in termination rates affected the suite of services traded
12 off was undertaken.

13 Where that ended up shifting I think, well, ultimately in litigation, but firstly
14 engaging with the industry, was just around the difficult assumptions and the trade
15 offs within that model. I think ultimately it was felt probably not to deliver quite the
16 instructive results that we hoped. And because of the complexity of such
17 an exercise here, we didn't undertake such a sophisticated analysis of consumer and
18 producer surplus gains.

19 **PROFESSOR REID:** I think there are disadvantages to that type of exercise and also the
20 resource costs are rather high, and you have limited time horizons on getting that
21 result. I thought you might have said, and I picked up a phrase of yours earlier but
22 in the same part of the evidence today, where you said: "going beyond narrower
23 allocated efficiency considerations...", and then you considered rolling out some
24 other types of arguments.

1 You either do the equilibrium thing properly and put the results together and stack
2 them up to a set of net benefits, or you might be saying that there's an entirely
3 different reason why, for example, there is a plus on LRIC, and are there motivations
4 for such a plus being there. But it's quite difficult for you to say that plus is zero if
5 you do not have a general equilibrium calculation, in my view, if you are looking at it
6 in terms of analytical economics.

7 **A.** I think I agree with you if you are looking at a purely static model. Suppose we were
8 talking about setting retail prices by a monopoly telecoms network, then perhaps that
9 environment does lend itself to that kind of analysis where you would say: when
10 would I mark up a service? Not at all. Well, clearly if the demand is highly, highly
11 elastic and utterly price responsive, you would say that justifies no mark up for the
12 purposes of allocative efficiency.

13 In the present context, I think when we are talking about wholesale charges, and
14 wholesale charges that significantly affect the competitive dynamic between the
15 alternative networks, then that kind of Ramsey pricing general equilibrium analysis
16 becomes rather more difficult, and I think we encountered that when we were
17 looking at the termination rates situation.

18 **PROFESSOR REID:** I think that takes it as far as I want to at this moment. But it is
19 part of my general misgiving, I think, about the way the quantitative side of the
20 evidence has been led because, as you say, to a degree it is in fact qualitative.

21 Would that be true to say?

22 **A.** I think it's fair to say that the analysis was primarily qualitative looking at the trade
23 offs, and then ballpark orders of magnitude were then, if you like, quantified.

24 **MR PALMER:** I am very grateful because that anticipates my next questions which

1 I can shorten, so I am very grateful.

2 Mr Godfrey, obviously you heard Dr Maldoom's evidence earlier. First of all, just
3 looking at the retail competition specifically in this context, if you turn to your
4 paragraph 169, you have said there that the overall pricing effects are likely to be
5 limited and you explain why.

6 Looking at all the quantitative information such as we have at the moment, prima
7 facie it seems that Ofcom has identified that retail pricing effects were not material.
8 But if you considered, or if Ofcom considered it might be material, bearing in mind
9 margins and so forth, you would need to analyse the market in more detail for
10 reasons that Dr Maldoom gave, wouldn't you? You would have to look at the retail
11 impact by reference to different categories of customer, whether they were bundled
12 or non-bundled, voice only customers, whether the RCP was attracting ported in
13 customers or customers generally. That is precisely the kind of analysis you would
14 need to do in order to establish a material effect on retail competition, isn't it?

15 **A.** Sorry, so your suggestion is it would have been necessary to identify multiple
16 categories of residential and business customers and ascertain what the expected
17 billing impact was?

18 **Q.** The effect on margins for example.

19 **A.** The effect on -- so the effect on the CPs' margins for those?

20 **Q.** Yes.

21 **A.** If one were going to town on this, then of course one could go down to the level of for
22 every CP or each customer segment of each CP looking at the margins earned, maybe
23 gross and net margins. Then the proportion of that that was, if you like, taken away
24 by the porting conveyance charges. One could do that kind of analysis.

1 **Q.** Mr Godfrey, I want you to go to town. You have agreed me already that when
2 selecting LRIC over LRIC+ there has to be a specific benefit which justifies that
3 otherwise exceptional course.

4 **A.** I agree, we would want to achieve, if you like, more effective competition. That
5 would be the aim.

6 **Q.** We are looking for sufficient benefit, not just some notional airy fairy finger in the air
7 type benefit, but a specific benefit sufficient to justify that additional interference
8 with BT's ability to recover its common costs on an exceptional basis.
9 So if your search is for that benefit, at some point you have to quantify that benefit in
10 sufficiently clear terms to be able to say it's material. We do not find that analysis
11 anywhere.

12 **A.** Except in my witness statement where I identify some of the relativity of wholesale
13 switching charges as compared to, for example, the level, the impact of the average
14 porting conveyance charges.

15 **Q.** So first point, it wasn't done for the purposes of the production of the guidance?
16 **A.** That's correct.

17 **Q.** Second point, what you identify in your witness statement, is that what we are looking
18 at, at page 52, 53?
19 **A.** So that looks at traffic flows and quantifies the financial impact. I then look further
20 on and I say, turning to paragraph 220, for example, which looks at other wholesale
21 switching related charges.

22 **Q.** Yes.
23 **A.** And gives the order of magnitude of those and decisions in that regard that those
24 charges should also be set on an incremental cost basis.

1 **Q.** Just pausing there, we will come to your paragraph 2.20 in just a moment. But
2 looking back at your retail analysis, it's all at a high level. You have not, for
3 example, considered the materiality of the reduced margins which LRIC+ would
4 imply for RCPs in the context of the fact that, for example, 75 per cent of those
5 customers are bundled customers, so the numbers you are talking about are
6 effectively tiny. You have not done that sort of analysis.

7 **A.** The guidance has not got that analysis quantified; there was, as I say, a qualitative
8 evaluation that eating into the margins of entrant CPs will, compared to the
9 incumbent, compromise their ability to compete for customers.

10 I do recognise that obviously -- I think the key point is the margins expected on -- the
11 larger the margin on a particular customer then the less significant that would be.
12 The fact that certain high spending customers, let's say, take bundles and therefore
13 spend a lot doesn't necessarily mean that they are commensurately all the more
14 profitable, it is just saying they are spending a lot more. The cost of the services
15 within that bundle will also be relevant to the margin earned on those bigger bundles.

16 **Q.** They would still be tiny in that context. When you are looking at £100 a month
17 bundles, that sort of thing, you are looking at tiny amounts, aren't you?

18 **A.** I do not recognise the £100 a month -- I am not aware of many customers paying
19 £1,200 for their fixed line telephony.

20 **Q.** Whatever it is, £50, it doesn't matter, we are still talking about a tiny amount of pence
21 in this context, aren't we?

22 **A.** I think a helpful benchmark --

23 **Q.** £1.71 I think was the figure?

24 **A.** Spread across all lines, spread across the customer base that's ported, we are looking at

1 more than, what was the figure, £1.70.

2 **Q.** The short point is, it's an analysis you haven't done and nor has your witness statement
3 and what you have produced there been the subject of consultation and testing in the
4 context of the market as a whole, the industry as a whole, has it?

5 **A.** This report was responsive to Dr Maldoom so it has not been tested.

6 **Q.** The trouble with saying you've done it now when you didn't do it at the time of the
7 decision is that hasn't been subjected to consultation or subjected to views and input
8 from industry, that's right, isn't it?

9 **A.** Not entirely because I did draw here on information that was gathered during the
10 review and if you like the figures that are set out here are in the more aggregate form
11 presented, but sometimes confidentially, in the guidance decision. So I didn't draw
12 on particularly new evidence.

13 **Q.** Insofar your paragraph 220, those categories are all addressed by Dr Maldoom in his
14 second report at paragraph 78?

15 **A.** Sorry, which tab?

16 **Q.** Dr Maldoom is BT6 tab 3-paragraph 78. Where he says, do you have it?

17 "Mr Godfrey then offers some examples services that Ofcom has
18 regulated at pure LRIC. I still considers a reasonable summarisation of
19 Ofcom's broad position is that the large majority of BT's regulated
20 services allow to some recovery of fixed and common costs ...(Reading
21 to the words)... this applies to each of the examples he raises".

22 Dr Maldoom wasn't asked about any of these categories or what he says. It is right
23 isn't it that all of the services which you have referred to are closely associated with
24 other services which already make contributions to common cost recovery through

1 their ongoing charges?

2 **A.** So these -- I don't know, is it helpful if I went through each of these and said whether
3 there's an associated --

4 **Q.** Dr Maldoom tells us that and he hasn't been challenged on any of this evidence. Are
5 you going to tell me now that this is the subject of disagreement?

6 **A.** I don't think this is disagreement. On fixed call termination there's not an associated
7 wholesale regulated service. The migration charges that I numerate at 22(b) to (e)
8 are certainly ancillary charges associated -- with the exception of (c) -- with
9 switching on the BT network in some way where there's a price control on the main
10 rental service. So that is the way in which it might be characterised as an ancillary
11 service.

12 But the key issue is in relation to opportunity to recover common costs. The key
13 point is those charge controls and the main rentals have allowed for the contribution
14 to common costs within the price cap on the rental of the line. In relation to porting
15 conveyance charges, while there's not an associated regulated lines product, the
16 premise, the expectation and the understanding is that the common costs can be
17 recovered on non-regulated services because we don't regulate all of BT's network or
18 indeed any of the network effectively of the other competing CPs.

19 **Q.** That's just saying you're just going to shift the CPs elsewhere. If they can't get it from
20 one place, you have to get it somewhere else; that's all you are saying there, when
21 you say the expectation is you will put it on other unregulated services?

22 **A.** Common costs have to be recovered. In these situations the recovery of the common
23 costs on a regulated charge in relation to non-regulated charges, well, we haven't
24 restricted the pricing of those. The question is, can those common costs be

1 recovered? I think our view is, yes, they could be.

2 **Q.** I see. The short point is, for example, a call termination that is regulated at LRIC
3 because all the costs can be recovered by virtue of call origination; it's a one-for-one
4 call origination/call termination relationship, isn't it?

5 **A.** So the view was, the contribution to common costs that termination previously made,
6 both mobile and fixed, is that these should be recovered on the retail side of the
7 market. In relation to fixed call termination it was a little more complicated because
8 we regulated BT's call origination charges. We didn't want to undermine the
9 opportunity to recover the common costs in the retail market so allowed, on the price
10 control for BT's call origination, a further mark-up to allow for that common cost
11 recovery. That wasn't necessary in relation to the mobile networks where we do not
12 regulate call origination on the mobile networks.

13 **Q.** Given the time and given the fact that those points weren't challenged in
14 Dr Maldoom's evidence, I will leave that point there.
15 Let's move to the wholesale competition side and to Dr Maldoom's evidence please
16 which is in BT bundle 1, if you still have it, paragraph 159(a), tab 5, BT1,
17 paragraph 159(a). This is where Dr Maldoom is addressing the various distortions
18 of conveyance and transit markets which he fears will arise. Just starting with the
19 broad proposition, if there are risks of distortion of wholesale markets, whether
20 conveyance in transit, if there are such risks, those are risks which Ofcom ought to
21 factor into its analysis as a cost?

22 **A.** I think it's appropriate to identify the relevant -- as part of the cost-benefit analysis,
23 these kinds of trade-offs are relevant. The question which arises is, are they
24 material of course? But, absolutely, it's not unreasonable to ask oneself these

1 questions.

2 **Q.** On 159(a), we see the first point Dr Maldoom makes is:

3 "... an incentive to split out ported traffic ...(Reading to the words)... to
4 arbitrage lower for prices for conveyance of ported traffic".

5 What he is identifying is an incentive to split out ported traffic to arbitrage lower
6 prices. I think, as I understood Mr Holmes' challenge to that evidence, he was
7 saying, Vodafone say that even if APCCs were dropped, they would still make use of
8 spare capacity on their own network?

9 **A.** That's what I was going to say.

10 **Q.** But we have to look at the long term view, not of the particular circumstances of
11 Vodafone specifically. This will in the long term impact on investment decisions,
12 won't it?

13 **A.** I think I addressed this in my own report. I think in world of declining fixed call
14 volumes and where a lot of this capacity was built several years ago for a peak which
15 has now passed in traffic, the situation described by Vodafone would not be
16 uncommon for CPs, certainly in relation to their TDM infrastructure so there is
17 an opportunity to carry any additional traffic at relatively low cost on their own
18 networks.

19 As to whether arbitrage is a problem I would say that it's a concern where it
20 introduces an inefficiency. I think something to recognise is, if we were narrowly
21 concerned only about the efficiency of carriage of calls, I don't think you would be
22 wanting, for example, infrastructure based competition and say: let's carry all the
23 calls on the BT network. Because then there's no fixed cost duplication. But in
24 a world in which dynamic efficiency matters, where we want competition and

1 competing infrastructure, then, if you like, we tolerate that static, fixed costs
2 inefficiency, by allowing CPs to carry traffic. The relevant question is: can they
3 carry it at a lower cost than BT? My view is, where they have already built out as
4 far as they are likely to do on a TDM network, dimensioning for a peak in traffic
5 which has now gone, my feeling is it's unlikely to distort incentives in practice.

6 **Q.** So you are entirely relaxed are you at the prospect that rather investing on new links
7 CPs will simply carve off their ported traffic and put it through BT to take advantage
8 of the LRIC pricing rather than making otherwise efficient investment decisions?

9 **A.** I presume here we must be talking about the tandem nodes because as has been
10 discussed before BT's obviously required the splitting of traffic at the local
11 exchanges which raises interesting questions as to whether, if that is inefficient, then
12 why is that a requirement of the DLE handover? In relation to the tandems my view
13 is the CP would only split out the traffic and convey it further on the BT network, if it
14 really was in that CP's interests on the grounds of either it being utterly capacity
15 constrained, as I say, I find that unlikely in today's world. And also insofar as for
16 example it involved more inter-working that -- as was described by Mr Rosbotham --
17 then again that might act as a disincentive to the CP wanting to convey further on the
18 BT network.

19 **Q.** So you are looking there expressly at what's cheapest for that CP in that situation,
20 rather than what is most efficient over the network as a whole?

21 **A.** Sorry can you clarify --

22 **Q.** You justified your answer in terms of what would be cheapest for that CP in that
23 situation rather than considering the efficiency effect for the network infrastructure
24 as whole for all CPs including BT?

1 A. Who is going to act on any pricing signals, then it clearly is the CP. As I say, as to
2 whether that is an arbitrage which introduces inefficiency, I hope I answered that.

3 Q. Those pricing signals all depend on the price of ISC, on the price of inter-switch
4 conveyance?

5 A. And also on the price of the outside options, so carriage itself or use of a transit
6 network.

7 Q. And the impact on BT is that it continues to dimension its network to carry that traffic.
8 Ofcom's never said, has it, that all common costs will be viewed as an increment in
9 light of the short end of lifespan of the TDM networks? Are we wrong not to have
10 confidence that Ofcom will view all common costs as an increment of providing
11 ported traffic conveyance?

12 A. Perhaps if I can clarify what is being discussed before. So I think as Dr Maldoom
13 was asked, LRIC will capture the long running costs over an appropriately sized
14 increment. As other traffic drops away, if porting conveyance were to not change or
15 to grow, it would clearly pick up more of the fixed costs, the traffic-related fixed
16 costs. The way that that would be reflected, if you look at, for example, in the
17 determination there is an annex which describes some of BT's cost-volume
18 relationships, the fact that that is a curve indicates the presence of fixed costs. So if
19 traffic declines that curve will get steeper and it's only getting steeper because it has
20 fixed costs. So a correctly calculated LRIC will pick up those fixed costs.

21 **PROFESSOR REID:** Thank you for drawing attention to that cost-volume relationship
22 and in fact to a key illustration, in which Ofcom look at a very large negative
23 increment (a decrement, if you like), and the consequences of that, for raising
24 marginal cost, because of the concavity of the cost-volume relationship.

1 **MR PALMER:** You mentioned DLE handover segregation a moment ago and
2 wondered whether it was efficient. Are you in a position to comment on the reasons
3 why that segregation takes place at the DLE handover, as part of your expertise?

4 **A.** I'm not an engineer by background so I can't offer an opinion on the technical reasons,
5 I merely observe it.

6 **Q.** What we see at 160, taken with 159(a) of Dr Maldoom's report, the effect will be to
7 affect incentives on migration, the CPs sweat their own TDM assets further, splitting
8 out traffic to BT, thus affecting those incentives in that way. Is your evidence to the
9 Tribunal that there are no such incentives for a CP to act in that way?

10 **A.** My view would be you couldn't rule out this being a relevant consideration, it just
11 seems extremely unlikely in my own view. I think the reason I say that is because
12 most of BT's -- a number of BT's rivals now operate next generation networks
13 anyway. In terms of TDM infrastructure, my understanding is it is primarily
14 Vodafone and, to an extent, Virgin Media as large players who still have large
15 networks. As I say, fixed voice volumes are tending to decline anyway, which will
16 tend to free up the capacity. In terms of incentives to migrate to NGN, my
17 understanding is, that's fairly, it's a big investment and once you get there you want
18 to get as many subscribers as possible on it so you can offer the benefits of it so far as
19 any relevant enhanced call features arise. Another thing to observe is that once you
20 move to an NGN, the major rationale is that the economies of scope are shared with
21 data traffic. So, essentially, the more through-put you can put on your own network,
22 the more it's in your incentive to do.

23 **Q.** You are aware of course of BT's efforts to move to an NGN and the progress, or lack
24 of progress, that was made with the 21CN Network, leading to its abandonment

1 sometime ago. That's in the face of all those incentives to move to next generation
2 networks, isn't it?

3 **A.** I understand that BT did begin the 21CN programme a long time ago, the timescales
4 have been pushed back.

5 **Q.** It was abandoned, wasn't it?

6 **A.** Well -- I mean the original genesis of it, as I say, my understanding is that somewhere
7 around perhaps 10 years hence BT is looking to move to an IP network.

8 **Q.** About 10 years hence, so it is difficult, isn't it, practically often to make that transition
9 from TDM to next generation network?

10 **A.** I wouldn't dispute that there are challenges in doing so.

11 **Q.** So in the meantime there will be incentives to get the most out of the NGN network
12 whilst that transition takes place?

13 **A.** Sorry?

14 **Q.** Most out of, I meant TDM, to get the most out of that TDM network whilst that
15 transition takes place?

16 **A.** I'm not sure, to me, that would be an engineering question.

17 **Q.** Can you see it as an efficiency question as well?

18 **A.** To my mind, my understanding is that once you have got these two networks in place,
19 you are not going to be that keen to keep them, prolonging them, unnecessarily.

20 I think your incentive will be, once you have committed the capital to build an NGN
21 you are going to want to build it as quickly as possible and start to fill it with traffic

22 **Q.** Whilst you are building it your incentive is to sweat and get the most out of your TDM
23 network without putting further investment into it, you heard from other CPs like

24 Vodafone who have a TDM network as well, they are trying to get the most out of it

- 1 without investing, whether they can help it, and putting more cost into it.
- 2 **A.** I believe that's right and I also understand there's a fair degree of spare capacity on
3 those networks.
- 4 **Q.** As those networks are being sweated, they have an incentive as they reduce the size of
5 their networks to get the most out of what is left at the lowest cost to them?
- 6 **A.** I think there would be such an incentive, yes.
- 7 **Q.** So the opportunity to put ported traffic onto BT's TDM network in the meantime
8 distorts those incentives towards the efficient transfer to the next generation
9 network?
- 10 **A.** My own feeling is that it's not going to be a material incentive to shunt traffic unduly
11 onto BT's TDM network if you already have the capacity to carry it, be it on your
12 depreciated TDM network or as you build up your NGN network because running a
13 network is all about getting volume and traffic and economies of scale.
- 14 **Q.** The bottom line on this, Mr Godfrey, is that you didn't consider any of these effects on
15 wholesale competition in the guidance at all, did you?
- 16 **A.** So I agree that a detailed discussion of these kind of incentive effects wasn't raised in
17 the consultation or the guidance and, apart from the TDM IP migration issues which
18 were raised in fairly general form by BT I believe and one other CP which are
19 addressed in the guidance, then these more detailed issues weren't raised or
20 addressed.
- 21 **Q.** I understand that but Mr Holmes put it to Dr Maldoom this is a matter of regulatory
22 judgment. The point is, it hasn't been judged by Ofcom has it? They haven't gone
23 through that exercise so far to make a judgment on these matters?
- 24 **A.** On each of the very specific points that Dr Maldoom identified we obviously in the

1 guidance didn't and that's why responsively I've addressed them. However, very
2 detailed issues on a more general TDM to NGN, both migration and which network
3 is more efficient, were considered at length in the guidance. Indeed, there was a
4 significant number of CPs who were pushing back and saying, there's a question as
5 to whether the benchmark for setting cost-based charges would be an NGN rather
6 than a TDM.

7 **Q.** I am conscious of the time and of the brain-faze problems that you identified earlier,
8 after a certain amount of time. I have about 10 or 15 minutes more and there may be
9 some re-examination, too.

10 **THE CHAIRMAN:** I think we will stop now and resume at 9.30 tomorrow morning in
11 the hope that further cross-examination and re-examination won't eat too much into
12 the time for closing submissions.

13 **MR PALMER:** If we can complete the evidence in the first half hour, which I anticipate
14 we can, that leaves us on track with the timetable we identified at the beginning.

15 **(5.00 pm)**

16 **(The court adjourned until 9.30 am on Wednesday, 25th May 2016)**

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