NON CONFIDENTIAL VERSION

IN THE COMPETITION APPEAL TRIBUNAL

Case 1146/3/3/09

BRITISH TELECOMMUNICATIONS PLC ("BT")

Appellant

- and –

OFFICE OF COMMUNICATIONS ("OFCOM")

Respondent

-and-

(1) CABLE AND WIRELESS UK
(2) VIRGIN MEDIA LIMITED
(3) GLOBAL CROSSING (UK) TELECOMMUNICATIONS LTD
(4) VERIZON UK LIMITED
(5) COLT TELECOMMUNICATIONS

Interveners

WITNESS STATEMENT OF GEOFFREY RICHARD PLATT MYERS

Contents

I, **GEOFFREY RICHARD PLATT MYERS**, of the Office of Communications, Riverside House, 2a Southwark Bridge Road, London, SE1 9HA, **STATE** as follows:

Introduction and Overall Conclusions

1. I am employed by the Respondent (the Office of Communications, "**Ofcom**") as the Director of Competition Economics in the Competition Group. I hold BA and MPhil degrees in Economics and have worked as a professional economist in the public sector for eighteen years. Of that time, I have spent thirteen years at Ofcom and previously the Office of Telecommunications ("**Oftel**").

2. I am a Visiting Professor in Regulation at the London School of Economics.

3. I had responsibility for overseeing Ofcom's economic analysis during the investigation culminating in the Determination to resolve disputes ("**the Disputes**") between each of Cable & Wireless, THUS, Global Crossing, Verizon, Virgin Media and COLT ("**the Disputing CPs**") and BT regarding BT's charges for partial private circuits of 14 October 2009 ("**the Determination**") **[BT1/3]**. This included economic analysis of the following: the appropriate level of service disaggregation, Ofcom's approach to assessing overcharging, the assessment of overcharging claims, and repayments.

4. I was also the primary author of the relevant section of the Network Charge Control Guidelines in 1997 ("**the 1997 Guidelines**") **[BT3/12.1]**, which discussed cost orientation, floors and ceilings and combinatorial tests.[1] These Guidelines in slightly amended form were also published in 2001 ("**the Guidelines**") **[BT3/12.2]** and were referred to in the Determination.

5. I am duly authorised to make this witness statement on behalf of Ofcom in resisting an appeal by the Appellant ("**BT**") against the Determination.

6. To the extent that the facts and matters set out in this witness statement are within my own knowledge they are true. Insofar as such facts and matters are not within my own knowledge they are true to the best of my knowledge and belief, and derive from sources identified in this witness statement.

[1] 1997 Guidelines, Annex C **[BT3/12.1]**

7. I have been asked in this witness statement to comment on:

   - the expert report of Professor George Yarrow and Dr Christopher Decker ("**the Yarrow/Decker report**") **[BT2/9]**;
   - the witness statement of Mr Richard Budd ("**the Budd statement**") **[BT2/8/RB]**; and
   - the witness statement of Mr Edward Pigott (**"the Pigott statement"**) **[BT2/8/ESP]**.

8. All three of these documents are referred to in paragraph 6 of BT's (revised) Notice of Appeal ("**NOA**") **[BT1/1.1]**.

9. The structure of this witness statement is as follows:

   a. First, in Section a), I describe Ofcom's approach in the Determination to the main economic issues.
   b. Then, in Section b), I respond to the key arguments in each of the Yarrow/Decker report, the Budd statement and the Pigott statement.
   c. Next, in Section c), I respond to certain other points in the Yarrow/Decker report.
   d. Thereafter, in Section d), I respond to certain other points in the Budd statement.
   e. Finally, in Section e), I respond to certain other points in the Pigott statement.

10. Overall, my conclusions are as follows.

11. The criticisms of Ofcom's approach using Distributed Stand-Alone Cost ("**DSAC**") in the Yarrow/Decker report, the Budd statement and the Pigott statement are unfounded, misguided or contradicted by the evidence:

    a. Cost orientation seeks to address the regulatory balance in the provision of sufficient pricing flexibility to BT to recover its common costs in an efficient manner, while ensuring that this flexibility is sufficiently bounded to prevent it exploiting its market power to set anti-competitive, exploitative or otherwise unreasonable charges. In my view, DSAC provided a reasonable balance in the circumstances of 2Mbit/s trunk services:

       i. DSAC provided BT with substantial (but bounded) latitude in pricing, eg permitting BT to set prices for 2Mbit/s trunk services between about 75% and 120% higher

than fully allocated costs, allowing BT to more than treble the contribution to common cost recovery (see Table 1 at paragraph 37 and Table 2 at paragraph 53 below).

ii. In contrast, BT's estimate of Stand-Alone Cost ("**SAC**") of 2Mbit/s trunk services is **[ ]** to **[ ]** higher than fully allocated costs (and **[ ]** to **[ ]** higher than DSAC). Hence, in the limit, this could allow BT to set a price on a service, in which it has market power, **[ ]** larger than fully allocated costs, eg **[ ]** per km in 2007/8 compared to fully allocated cost of only **[ ]** per km (and DSAC of **[ ]** per km) – see Table 1.

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b. DSAC clearly permitted BT to recover its costs and indeed to earn rates of return well above its cost of capital: more than 50% on average for 2Mbit/s trunk services (see Table 3 at paragraph 56 below), which is more than four times larger than its cost of capital of about 12%.

c. Ofcom's (and Oftel's) use of DSAC as the first order test for investigating the reasonableness of charges has been known since the publication of the 1997 Guidelines. While the terminology may have changed over the period ("DSAC" was originally referred to by Oftel as the "ceiling"), the underlying cost concepts and test have remained the same. The DSAC test has also been recognised by BT's own accounting documents over the period of the Disputes.

d. Ofcom's rationale for DSAC is as an alternative to SAC/combinatorial tests, not a proxy. It involves a departure from the textbook theory of contestability and applies a more stringent test, which is consistent with the reasoning for the imposition of ex ante regulation in the form of the cost orientation obligation in the 2004 Leased Lines Market Review **[BT3/12.12]**.

e. The DLRIC floor and DSAC ceiling apply to individual services. 2Mbit/s trunk segments are services, not components. Components are at a more granular level than services and they are combined in fixed proportions to form services. In my view, it is clear that 2Mbit/s trunk segments are services from: the purchasing patterns (ie they are not purchased in fixed proportions with terminating segments); the fact that there are more granular components that are combined to form the 2Mbit/s trunk service; the analogy between trunk services and BT's switched interconnection services for voice calls; the economic significance of the distinct charge for 2Mbit/s trunk segments for

purchasing and investment decisions and ultimately for retail consumers; Ofcom's market analysis and distinct regulation applied to trunk segments; and BT's own publications which also recognise that 2Mbit/s trunk segments are services, not components, including its Financial Statements and Wholesale Catalogue. The first order test of DLRIC floors and DSAC ceilings therefore applies to 2Mbit/s trunk services on their own and not aggregated with terminating segments.

f. Although the first order, DSAC test is not determinative on its own, it is important, ie a very significant consideration in the conclusion of whether there is overcharging (and not merely a screening test of little importance to the final conclusion).

g. Reflecting the important, but not determinative, nature of the first order test, Ofcom also considered in the Determination a range of further factors, including economic harm, rates of return and BT's evidence. Indeed Ofcom found that some charges in excess of DSAC did not, in the circumstances, constitute overcharging.

h. 2Mbit/s trunk prices have the potential to affect competition in the wholesale trunk services market, but in my view prices at DSAC do not harm such competition as they are substantially above the level that might deter efficient entry to this market. A key rationale for the cost orientation obligation on BT in this market is to promote competition in downstream markets, such as retail leased lines. Ofcom concluded in the Determination that BT's high prices for 2Mbit/s trunk services (above DSAC) were likely to have distorted such downstream competition and adversely affected consumers of retail leased lines. Furthermore, by requiring BT to make repayments, the Determination provided BT with an incentive not to overcharge on wholesale services in the future, thereby promoting downstream competition.

12. The alternative approaches to assessing overcharging suggested in the Yarrow/Decker report and the Budd statement, such as aggregation of trunk and terminating segment prices, BT's evidence on SAC and a sub-set of combinatorial tests, and "market evidence", were considered in the Determination and rejected. In my view, the Yarrow/Decker report, the Budd statement and the Pigott statement fail satisfactorily to answer Ofcom's reasons:

a. Ofcom set out six key reasons for considering trunk prices distinctly and not aggregating them with terminating segment prices.[2] In my view these points are unanswered by the Yarrow/Decker report and the Budd statement, which, for example, fail to address the fundamental economic reason that the distinct price of trunk services is economically meaningful for operators' investment decisions, competition and consumer prices (because terminating segments can be and are purchased either with or without trunk services).

b. In the Determination, Ofcom set out six key difficulties of application and interpretation, from which the approach of SAC/combinatorial tests suffers,[3] and three categories of reason why BT's evidence fell short of the required standard of being derived from a generally accepted robust methodology.[4] In my view these points are not properly answered by the Yarrow/Decker report, the Budd statement or the Pigott statement:

i. To take one example, BT's evidence focused on relatively unimportant combinatorial tests across trunk and terminating segments, which only account for a small proportion of the relevant common costs (**[ ]** or less of the SAC of 2Mbit/s trunk services). However, BT failed to conduct the important combinatorial tests between trunk services and other of BT's services (outside of the Core increment), given that, according to BT's own estimates, about **[ ]** of the SAC of 2Mbit/s trunk services is Intra-network common costs, which are shared with such other services.

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ii. In addition, the Yarrow/Decker report, the Budd statement and the Pigott statement fail properly to answer the other wide-ranging difficulties and concerns set out in the Determination, such as: service identification, combinations spanning charge-controlled and non charge-controlled services, combinations spanning SMP and competitive markets, the risk of rate of return regulation, equity/distributional implications of flexibility in cost recovery, the fact that BT's methodology is not generally accepted, and the concerns about BT's failure to estimate an efficient SAC, potential overstatement of common costs and the derivation of inclusion percentages.

[2] Determination, paragraph 4.19 **[BT1/3/25]**
[3] Determination, paragraph 5.56(v) **[BT1/3/55]**
[4] Determination, paragraph 5.56(vi) **[BT1/3/55]**

c. As regards ”market evidence”:

i. In my view it would be incorrect to infer from the lack of large scale entry into trunk services that the price of 2Mbit/s trunk segments was not too high (as the Yarrow/Decker report suggests), given BT's Significant Market Power in the trunk segments market and the existence of barriers to entry and growth, which were established in both the 2004 Leased Lines Market Review and the 2008 Business Connectivity Market Review.

ii. Although the Yarrow/Decker report and the Budd statement also contend that international benchmarking data provided evidence that BT was not overcharging, in my view they fail satisfactorily to address the criticisms of that data set out in the Determination.[5]

[5] Determination, paragraphs 7.136-7.150 **[BT1/3/133-135]**

a) Economic Analysis in Ofcom's Determination

13. In addressing the economic issues relating to the Disputes, Ofcom structured its analysis in the Determination **[BT1/3]** as follows:

    a. *Section 1* **[BT1/3/3]** of the Determination provided a summary.
    b. *Section 4* **[BT1/3/23]** analysed the appropriate level of service disaggregation to resolve the Disputes.
    c. *Section 5* **[BT1/3/43]** set out Ofcom's approach to assessing overcharging.
    d. *Section 6* **[BT1/3/72]** provided an analysis of BT's costs of providing PPCs.
    e. *Section 7* **[BT1/3/105]** applied the approach in Section 5 to assess and reach conclusions on the claims of overcharging made by the Disputing CPs. In particular, Ofcom concluded that BT overcharged for 2Mbit/s trunk services in the period April 2005 to September 2008.
    f. *Section 8* **[BT1/3/138]** considered whether there should be repayments in relation to 2Mbit/s trunk charges that were found in Section 7 to constitute overcharging and concluded that this was appropriate.
    g. *Annex 11* **[BT1/3/207]** provided an overview of the key economic issues relevant to the case, including an explanation of the main cost concepts.

Appropriate level of service disaggregation

14. In Section 4 of the Determination, Ofcom explained why it is appropriate to consider the price of trunk segments distinctly and without aggregating it with the price of terminating segments. In particular, the fundamental economic reason is that terminating segments can be and are purchased from BT either with or without trunk services. Hence the distinct price of trunk services is economically meaningful for operators' 'make or buy' investment decisions, competition and consumer prices.

15. The reasons for conducting the assessment of prices at the individual service level are summarised in paragraph 4.19 of the Determination **[BT1/3/25]**. Using the six categories set out there, I briefly note below a few especially pertinent points:

    a. **Cost orientation obligation and the meaning of Network Access**. The meaning of "each and every charge" in the cost orientation obligation is unambiguous. This

interpretation is also consistent with the Guidelines. For example, among switched interconnection services for voice calls, the Guidelines identify "local-tandem conveyance" as a separate service. In important respects, local-tandem conveyance is analogous to 2Mbit/s trunk services. Like 2Mbit/s trunk services, it is never bought on its own from BT, but only in combination with the local exchange segment service (which, in this respect, corresponds to terminating segments); but local exchange segment can be and is purchased from BT either with or without local-tandem conveyance (corresponding to terminating and 2Mbit/s trunk segments respectively).[6]

b. **Market definitions and regulatory provisions**. The definition of trunk and terminating segments in separate markets and the imposition of different regulatory obligations on each (inter alia) reflect the fact that they are not purchased in fixed proportions and are subject to distinct 'make or buy' decisions.

c. **Purchasing patterns for trunk and terminating segment services**. The differences in purchasing patterns reflect the fact that the distinction between trunk and terminating segments is economically meaningful.

d. **Regulatory certainty**. As well as the wording of the cost orientation obligation and the Guidelines (discussed above), BT's own regulatory accounts reflect the separate treatment of trunk services, as Ofcom noted in the Determination:[7]

> "we note that BT's regulatory accounts fully reflect the separation of trunk and terminating services. These services are reported separately, in separate sections of the accounts. In addition, in the 2008 accounts the purpose of the statements for each of the three separate markets is explained by BT to be: "…*to provide more detail on the financial performance and first order tests of cost orientation and non-discrimination obligations*". In addition, BT provides DSAC (and distributed long run incremental cost ("DLRIC")) estimates for each individual service reported within each of the relevant markets under the heading "cost orientation""

[6] I also discuss this analogy between 2Mbit/s trunk services and local-tandem conveyance at paragraph 160, in responding to the Pigott statement.

[7] Determination, paragraph 4.20 **[BT1/3/26]**

e. **Charge control incentives**. Aggregating across charge-controlled and non charge-controlled services has adverse effects on incentives. For example, consider the alternative situation in which the regulated firm with market power was permitted to recover any profit shortfall on charge-controlled terminating segments, arising from underperformance relative to the price caps, by exploiting its market power in trunk segments to set high prices. This would mean that the worse its underperformance on the terminating segment price caps, the more of its market power in trunk segments it would be allowed to exploit. Such an outcome is clearly inappropriate and economically harmful.

f. **Economic harm**. Detriment can arise from high trunk prices for consumer prices, competition and investment decisions (as set out in the Determination at paragraphs 7.32-7.72) **[BT1/3/111-119]**.

Approach to assessing overcharging

First order test and further factors

16. Ofcom summarised its approach to assessing overcharging in the Determination at paragraphs 1.21 and 5.39. The first order test, the rationale for which is set out in further detail below, was to assess whether BT's charges exceeded the ceiling of DSAC. This follows the approach for assessing the reasonableness of charges first set out in Oftel's 1997 Guidelines. Ofcom did not, however, apply this test mechanistically, but also considered a range of further factors:[8]

> "For the purposes of the current Disputes, we have considered the following further factors beyond the first order test of DSAC:
>
> - The magnitude and duration of the amounts by which charges exceeded DSAC;
> - Whether charges above DSAC could have caused economic harm to BT's customers or to the consumers of retail leased lines in light of the Guidelines, including the evidence provided by BT;
> - Whether charges below DSAC nevertheless constituted overcharging;
> - Rates of return on a fully allocated cost basis;

[8] Determination, paragraph 5.39 **[BT1/3/50-51]**

- BT's cost data on individual service SAC and a sub-set of combinatorial tests;
- International benchmarking; and
- BT's circuit analysis."

17. I discuss how Ofcom applied these further factors in the Determination at paragraphs 50 to 60 below. But, before doing so, I outline below the logic and rationale for the first order test of DSAC. In particular, I make clear that DSAC is a practical application of the underlying theory of contestability, but it is an alternative to implementation of full-blown combinatorial tests and knowingly and appropriately a more stringent test. Then I consider the conditions, as set out in the Guidelines, that evidence on SAC and combinatorial tests needed to satisfy to be influential in the Disputes, namely that it was generally accepted and robust. BT's evidence fell short of the required standard. Its methodology was not generally accepted and the evidence was not robust in a number of respects. A sufficient reason (but not the only reason) is that BT focused on relatively unimportant combinatorial tests between trunk and terminating segments. They were unimportant because these services share a relatively small proportion of the relevant common costs. However, BT failed to conduct the important combinatorial tests.

CONFIDENTIAL According to BT's own estimates, about **[ ]** of the SAC of 2Mbit/s trunk is Intra-network common costs, shared with non-PPC (and non-Core increment) services. Yet BT did not conduct combinatorial tests between these services and 2Mbit/s trunk services.

The economic rationale for the use of DSAC as the first-order test for overcharging

18. The overarching economic context is the regulatory balance to be struck between:

    a. providing the regulated firm with enough pricing flexibility to recover its costs, including its common costs, in an economically efficient manner; and
    b. ensuring that this flexibility is sufficiently bounded to prevent the regulated firm from exploiting its market power to set anti-competitive, exploitative or otherwise unreasonable charges.

19. It is appropriate to strike this balance differently depending on the circumstances (eg the degree and persistence of market power, the importance of the pricing efficiencies that may be available, the risk and consequences of the firm exploiting its market power etc). Therefore, useful benchmarks are those that define the *maximum* boundaries of pricing

flexibility, even if it will not always be appropriate to permit the regulated firm the full extent of such flexibility.

20. The theory of contestability posits that SAC is the *maximum* charge that would be sustainable in a competitive market. SAC represents the efficient cost of producing the service in isolation (ie on a stand-alone basis).[9] For a multi-product firm, the SAC is higher than the long run incremental cost[10] ("**LRIC**") of a service to the extent that there are economies of scope, ie if it is cheaper for a single firm to supply the services than for each service to be supplied by a separate, stand-alone provider.[11] Economies of scope are reflected in the existence of common costs, ie costs that are shared between services in the sense that they are not incremental to each service considered individually, but they are causally related to the combination of services. The SAC is therefore the sum of the LRIC and the common costs (if all of the costs are efficiently incurred).[12]

21. These cost concepts can perhaps be illustrated by the simple analogy used in the Determination of an ice-cream van that sells ice creams, ice lollies and drinks.[13] In this case the incremental costs for each of the three products can be thought of as the wholesale costs of buying them from the manufacturer. However, over and above these wholesale costs, the ice-cream van operator also faces a number of other types of cost, which constitute different types of common costs. First, there is the cost of the van itself and the staff who operate it. This is common to all three products.[14] Then, there is the freezer. This is common to both ice creams and ice lollies, but not the drinks. Therefore, given that these common costs exist, the stand-alone cost of providing each of the three products is higher than the incremental costs. For example, an operator that wanted to sell

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[9] This does not, however, mean that SAC is the most economically efficient (or welfare-optimal) price. That is usually (but not always) lower than SAC. In the presence of fixed and common costs, the welfare-optimal price that avoids the firm incurring a loss is generally provided by the so-called Ramsey price, in which the mark-up of price over marginal cost is inversely related to the (super-)elasticity of demand (although, in the case of a wholesale price, there are the additional considerations to take into account of the effects on downstream competition and prices, and wholesale entry). For further details on the theory of welfare-optimal wholesale prices, see Chapter 1 of OECD (2004), *Access Pricing in Telecommunications* **[DF3/5]**.

[10] LRIC is the cost which is directly caused by adding the provision of the service in question to the other services which the firm also produces.

[11] See Annex 11 **[BT1/3/207]** to the Determination for a detailed explanation of the relevant cost concepts for this case.

[12] Consistent with the theory of contestability, I refer to the difference between LRIC and SAC as common costs. However, I note that other economists sometimes use different terminology, eg both the Yarrow/Decker report and the Budd statement refer to "fixed and common costs" (eg Yarrow/Decker report, paragraph 58 and Budd statement, paragraph 45). No difference in meaning is intended.

[13] Determination, paragraphs 5.60 and 5.63 **[BT1/3/57-58]**

[14] Subject to the question of efficiency discussed at paragraph 23.

just ice creams or ice lollies would need to buy a van, a freezer, the ice creams/ice lollies from the wholesaler and hire someone to operate the van. Similarly, to sell just drinks an operator would need to incur the incremental costs of the drinks (ie their wholesale cost), but also the relevant common costs of the van and staff. However, the cost of the freezer would not be relevant to the stand-alone cost of the drinks.

22. These concepts are demonstrated diagrammatically in Figure A1 in Annex 1. In this diagram, ice creams and ice lollies could be considered group of products 'X' and drinks could be considered group of products 'Y'. Each of the small blocks represents the incremental costs of each individual service (eg individual type of ice lolly or drink). The intra-group common costs for group of services 'X' can be thought of as the freezer. The 'common costs across all services' can be thought of as the cost of the van and the staff.

23. If the ice-cream van operator was to charge a price for any of the products above the efficient SAC, then, in a contestable market, other van operators could enter to compete just to sell the product in question and profitably undercut this price. Therefore, the efficient SAC is the maximum charge that is sustainable in a contestable market. The term 'efficient' relates to the fact that the relevant cost measure is not the SAC of the firm itself but, rather, that of an efficient operator using a network (in this case, a van) of appropriate scale and technology for the product in isolation. So, in this analogy, an entrant operator wanting to compete only for the sale of drinks would need to incur the cost of a van, but that van would not need to be as big as a van selling ice creams, ice lollies and drinks, because it would not need space for a freezer. Therefore, while the SAC needs to include a cost item for the van, it should be measured at the stand-alone entrant's efficient cost, rather than that incurred by the multi-product firm.

24. For the charges levied by the ice-cream van to be sustainable in a contestable market, it is not only sufficient that each individual charge is below its SAC, each and every combination of services must also be below the SAC for the combination. If this is not the case, while entry to supply only the individual products (eg drinks) is not profitable, it may be profitable for groups (ie combinations) of products. For example, if each of the charges for ice creams and ice lollies involved an allowance for the van operator to recover 60% of the (efficient) costs of the van, staff and freezer then, in combination, the operator would over-recover its SAC for the combination of ice creams and ice lollies by

20%.[15] This would be unsustainable in a contestable market as an entrant could enter to sell both ice creams and ice lollies and profitably undercut those prices (irrespective of what the operator is charging for the drinks).

25. Since the original development of BT's incremental cost model in the 1990s (leading up to the introduction of the Network Charge Controls in 1997), the analysis used by Oftel/Ofcom has involved 'broad increments', ie much wider than any individual service. For example, the broad increment relevant to 2Mbit/s trunk services is the Core increment, but this increment includes many other services supplied over BT's core network, such as terminating segments and switched interconnection services (eg local-exchange segment and local-tandem conveyance, referred to at paragraph 15.a above). The SAC of the broad increment is therefore a combinatorial SAC, ie the SAC of the combination of services included in the broad increment.

26. The DSAC of each service in the broad increment is the SAC of the broad increment, distributed among the services in that increment.[16] If all prices are below DSAC, then the combinatorial test across the broad increment will be passed.

27. To explain the concept of DSAC further, it may be useful to return to the simple ice-cream van analogy. If we define the broad increment as 'frozen products' (ie ice creams and ice lollies), then the DSAC of the ice creams, for example, includes the incremental cost of the ice creams plus a *proportion* of the common costs for the frozen products, which in this example are the costs of the freezer (ie the intra-group common costs), the van and the staff (ie the common costs across all services). The remaining proportion of these common costs is included in the DSAC of ice lollies, the other service in the broad increment. The concept of DSAC is demonstrated diagrammatically in Figure A2 in Annex 1. Comparison of Figure A1 and Figure A2 illustrates why DSAC typically is smaller than SAC for an individual service.

28. As the common costs are completely distributed across the ice creams and ice lollies, the sum of the DSACs for these two products is the same as the SAC for the broader increment of 'frozen products'. Therefore if both the ice creams and ice lollies are priced

[15] Determination, paragraph 5.63 **[BT1/3/57-58]**

[16] The distribution of costs, in the case of BT's LRIC model, is based on the principle of equi-proportionate mark-ups ("**EPMU**"). Under such an approach the common costs are distributed across services in proportion to the individual service LRICs.

at or below their respective DSACs, the 'frozen products' combination will be priced at or below this combinatorial SAC.[17]

29. It is important to note that, while the terminology of "distributed stand-alone cost" was originally coined by BT and only used later by Ofcom, the cost concept that the term represents has been identified as the charging ceiling in the first order test since the publication of the 1997 Guidelines by Oftel **[BT3/12.1]**. Initially Oftel primarily used the term "ceiling" to refer to the DSAC. For example, the Guidelines state that the "**ceilings** will be given by the **stand-alone cost** of conveyance, broken down into the costs of components and expressed on a pence per minute basis".[18] This is a description of DSAC. The link to BT's terminology is made in a later paragraph: "Hence BT's LRIC Financial Statements refer to the service floors and ceilings calculated on the basis that the whole of conveyance is the increment as 'distributed incremental cost floors' and 'distributed stand-alone cost ceilings'."[19, 20]

30. The use of SAC and combinatorial tests in a regulatory context raises a number of conceptual and practical challenges, which the use of DSAC as an effective first order test avoids (as discussed in further detail below):

> "The approach of SAC/combinatorial tests suffers from difficulties of application and interpretation when applied, in the context of dispute resolution, in particular where the dispute involves services that share common costs with a large number of other services, which mean that, combined with the points above and below, it is not

[17] Similar principles apply to the derivation of DLRIC, which is the LRIC of the broad increment distributed across the services within the increment. Therefore, DLRIC includes the intra-increment common costs, but excludes costs common with other increments. This is demonstrated diagrammatically in Figure A3. In this diagram, the DLRIC for an individual service includes a share of the intra-group common costs but excludes the 'common costs across all services'. In the ice-cream van example, the DLRIC for an ice cream would include the incremental cost of the ice creams and a share of the cost of the freezer, but would exclude the cost of the van and the staff.

[18] 1997 Guidelines, paragraph C.4 **[BT3/12.1]**, emphasis in original. Conveyance is now referred to as the Core increment.

[19] 1997 Guidelines, paragraph C.15 **[BT3/12.1]**

[20] Ofcom was still using the term "ceiling" to refer to DSAC in the 2004 Leased Lines Market Review. For example, Table B.4 **[DF1/7/21]** showed that BT's prices for trunk segments were above the DSACs in 2002/3, which was used by Ofcom as evidence in support of the finding that BT had SMP in that market. This table referred to BT's price for 2Mbit/s trunk services being 110% above the "SAC "ceiling"". In the text accompanying the table, as referred to in paragraph 4.73 of the Determination **[BT1/3/36]**, Ofcom noted that "…for trunk segments, the prices charged for all identified bandwidths is well above the standalone cost ceiling as determined by BT" (paragraph B.108). The SAC ceiling figure is that set out by BT in its Regulatory Financial Statements for 2002/03, i.e. the DSAC ceiling.

currently practical or consistent with regulatory certainty to use it to assess whether BT has overcharged for PPC services"[21]

"DSACs avoid these difficulties by providing a clear test of overcharging for each service, avoiding the imposition of rate of return regulation, and avoiding tests that span charge controlled and competitive markets."[22]

31. The DSAC approach represents a practical application of contestability theory. However, it is not a proxy for combinatorial tests, but an alternative:[23]

"Given the number of potentially relevant combinations, carrying out a sufficient number of combinatorial tests is clearly not possible in the timescales available to Ofcom for resolving the Dispute. Therefore, an **alternative** methodology is necessary. The approach that has been adopted by Ofcom (and Oftel previously) in the context of the network charge control is the use of the DSAC and DLRIC."

32. The DSAC approach knowingly allows less pricing flexibility than SAC:[24]

"The DSAC is typically below the SAC for an individual service because it includes a distribution of a proportion of relevant common costs, rather than the entirety of common costs which is included in the individual service SAC."

33. Therefore, the DSAC approach consciously involves a departure from the textbook theory of contestability:[25]

"However, due to the number of services supplied by BT, carrying out combinatorial tests would be very complicated (further discussion on the problems of using SAC tests is set out at paragraphs 5.68 to 5.75 below). Instead, a more practical first order test has been developed and applied by Oftel/Ofcom since 1997, which is that charges should not be above DSAC. This allows for the distribution of relevant common costs amongst all the products bearing such costs. The DSAC approach reflects the practical application of underlying economic theory, recognising the major conceptual

[21] Determination, paragraph 5.56(v) **[BT1/3/55]**
[22] Determination, paragraph 5.72 **[BT1/3/61]**
[23] Determination, paragraph A11.14, emphasis added **[BT1/3/210]**
[24] Determination, paragraph 5.60 **[BT1/3/57]**
[25] Determination, paragraph 5.33 **[BT1/3/49]**

and practical challenges of implementing the full-blown approach of combinatorial tests. If all charges are below DSAC, then we expect that a wide range of combinatorial tests is also satisfied without the need to conduct each and every combinatorial test. This substantial practical simplification comes with the consequence that the DSAC tests are likely to permit less flexibility in the pattern of common cost recovery than full-blown application of combinatorial tests (because other patterns of common cost recovery in addition to that permitted by DSACs might also avoid over-recovery)."

34. This appropriately reflects the more stringent approach under ex ante regulation than under ex post competition law, as set out in the 2004 Leased Lines Market Review ("**2004 LLMR**") **[BT3/12.12]**:[26]

> "As BT has been identified as having SMP [Significant Market Power] in this market, the availability of wholesale trunk segments at cost oriented prices would ensure that communications providers were able to compete in the retail leased lines markets in such a way that it results in downward pressure on retail prices and provides the benefits of competition to customers."
>
> "It might be argued that the Competition Act should be used to avoid excessive or predatory pricing. However, Ofcom considers that sectoral tests are likely to be more stringent and more effective than the Competition Act, giving the SMP communications provider less latitude and providing greater certainty for access customers."

35. Ofcom viewed DSAC as striking a reasonable balance between providing BT with flexibility to price individual services to recover its common costs efficiently and ensuring that this flexibility is sufficiently bounded so as to not allow BT to price in an anti-competitive, exploitative manner or otherwise unreasonable manner.[27]

36. In general, DSAC lies between fully allocated costs ("**FAC**")[28] and SAC.[29] FAC provides a useful benchmark, but using it to set all prices can be too restrictive on the pattern of

[26] 2004 LLMR, paragraphs 8.41-8.42. Paragraph 8.42 is quoted at Determination, paragraph 5.102 **[BT1/3/67]**.
[27] Determination, paragraph 5.90 and the last bullet in paragraph 5.71 **[BT1/3/65 & 61]**.
[28] FAC is an accounting approach under which all the costs of the firm are distributed across its various products in services. The FAC for a service is expected, depending on the precise approach, to include some

common cost recovery. A key difference from DSAC is that FAC represents one specific view of cost allocation and allows the regulated firm no flexibility if it wishes to recover all its costs. If any price is below FAC, then another price needs to be above FAC – otherwise, the firm fails to recover its costs. But there may be other reasonable patterns of cost recovery. In contrast, charges can be below DSAC and still allow for full cost recovery. This is because the sum of all of the DSACs exceeds BT's total costs (by including the common costs between two broad increments in the DSACs of both sets of services in these increments). The firm could therefore comply with the DSAC tests and allocate common costs in a myriad of different ways.[30]

37. The DSAC approach, therefore, still provides for substantial (but bounded) pricing flexibility. The flexibility on 2Mbit/s trunk pricing was as follows:

    a. DSACs for 2Mbit/s trunk services were about 75% to 120% higher than FAC[31] and, on average, 85% higher (see Table 2 below at paragraph 53 below). That is, the DSAC approach allowed BT to increase the prices and the recovery of common costs from 2Mbit/s trunk services by a very substantial amount over and above the allowance already included in FAC.

    b. Using BT's own estimates (before Ofcom adjustments), Table 1 presents information on common cost contributions in £ per km for 2Mbit/s trunk services. For example, in 2007/8, pricing at DSAC allowed BT to increase the common cost contribution on 2Mbit/s trunk services from the **[ ]** per km included in FAC to **[ ]** per km, ie to **[ ]** the common cost contribution. The ratios in 2005/06 and 2006/07 were even larger.

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common costs. As costs are distributed completely across all services, if the firm charges a price equal to FAC for each service, it will exactly recover its costs. FAC is demonstrated diagrammatically in Figure A4 in Annex 1. As it typically involves an allocation of all common costs spread over a broader group of services, it is normally below DSAC (and therefore SAC) for an individual service. However, as it includes an allocation of all common costs, not just intra-group common costs, it is typically above DLRIC (and therefore LRIC) for the individual service.

[29] See, for example, Annex 11 of the Determination **[BT1/3/207]**

[30] Determination, paragraph 5.67 **[BT1/3/69]**

[31] Determination, footnote 191 **[BT1/3/126]**; see also Table 2 above.

Table 1: BT's estimates of various cost benchmarks for 2Mbit/s trunk services and their common cost contributions

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Source: Author from Table 5.2 in the Determination **[BT1/3/59]**.

c. Another way of presenting the pricing flexibility provided by DSAC is to examine rates of return. Pricing up to DSAC would have allowed BT to earn a rate of return on capital employed ("**ROCE**") on 2Mbit/s trunk services of 54% on average (see Table 3 below). This is more than four times larger than its weighted average cost of capital ("**WACC**") of about 12%.

d. Therefore, in terms of each of the extent of the price above FAC, the increase in the contribution to common cost recovery and the rate of return, the DSAC approach permitted BT a large degree of pricing flexibility on 2Mbit/s trunk services.

38. While Ofcom considered DSAC to be an effective first order test, it did not apply DSACs mechanistically, but also took account of a range of further factors, as set out at paragraph 16 above and discussed in further detail below.

The requirements for evidence on SAC and combinatorial tests to be used

39. The concerns about SAC/combinatorial tests do not imply that they should never be used. For example, such analysis may sometimes be of value in Competition Act investigations.[32] But to be used in disputes or ex ante regulation to which the Guidelines apply, the requirement is that such information should be derived from a generally accepted, robust methodology.[33] BT's evidence fell short of this standard.

40. A generally accepted robust methodology would need to address both of the following categories of issues, which I consider in turn below:

- The difficulties of application and interpretation identified in the Determination.[34]
- The deficiencies of methodology and cost evidence.[35]

[32] Such as Ofcom's NCCN500 Competition Act decision, 1 August 2008 **[DF3/12]**. See also paragraphs 302 and 338 to 341.
[33] 1997Guidelines, paragraph C.19 **[BT3/12.1]**
[34] Determination, paragraph 5.56(v) **[BT1/3/55]**

Difficulties of application and interpretation

41. I set out below the types of difficulty of application and interpretation in using evidence on SAC and combinatorial tests. I also note some of the key deficiencies in the evidence submitted by BT on SAC and a sub-set of combinatorial tests and why the DSAC approach avoided these deficiencies.

42. **Complete set of combinatorial tests**. The logic of contestability theory implies that all combinatorial tests relevant to the service under investigation should be conducted. Even if, in practice, it may not be necessary to conduct every single combinatorial test, there is clearly a requirement for the most important combinatorial tests to be conducted. Importance is defined by the sets of services that share the largest relevant common costs:

    a. In the case of 2Mbit/s trunk services, BT's own estimates suggest that these are the
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    b. Intra-Network common costs are shared between services in the Core increment, including 2Mbit/s trunk, and BT's services in all of the other (network) increments: Access, International, Rest of Network and Other.[37]

    c. But BT failed to carry out these combinatorial tests between trunk and non-PPC services. Instead BT focused on relatively unimportant combinatorial tests between
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    d. As set out above, the DSAC approach provides for various combinatorial tests to be satisfied. But its underpinning rationale involves a departure from textbook contestability theory, including the application of a more stringent test.

43. **Service identification**. Failure of a combinatorial test indicates that common costs have been over-recovered from the bundle of services in the combination. But it does not of

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[35] Determination, paragraph 5.56(vi) **[BT1/3/56]**
[36] Determination, Table 7.7 **[BT1/3/131]**
[37] Determination, Figure A11.1 **[BT1/3/210]**
[38] Determination, paragraph 7.123 **[BT1/3/131]**

itself indicate which service(s) were overcharged or the amount of overcharging on each service or to each customer.[39]

a. This is a fundamental issue with the construct of combinatorial tests. I am not aware of a satisfactory answer to this problem. BT did not suggest one during the Disputes.[40]

b. DSAC addresses this issue by deriving a specific test for individual services (in the knowledge that this approach is generally more restrictive on flexibility in the pattern of cost recovery).

44. **Combinations that span charge-controlled and non charge-controlled services** may undermine the desired efficiency incentives of price caps.[41]

a. In principle, an adjustment could be made for over- or under-performance against a price cap. Any such approach would need to be symmetric to preserve efficiency incentives. In this case, the relevant adjustment for combinatorial tests including trunk and terminating segments would be under-performance relative to the terminating segment price caps.

b. The details for deriving the adjustments would need to be fit for purpose and practical. There might be significant complications in specifying the practical details of any adjustment.

c. BT did not put forward a specific proposal on the nature of any such adjustment in the Disputes, despite submitting evidence on combinatorial tests spanning charge-controlled and non charge-controlled services (terminating and trunk segments respectively).

d. The DSAC approach does not require such an adjustment, because it applies at the level of individual services.

45. **Combinations that span SMP and competitive markets** may distort the operator‘s pricing incentives in competitive and/or SMP markets.[42]

[39] Determination, paragraph 5.56(v)(b) **[BT1/3/55]**
[40] I also explain at paragraphs 303 to 305 below why the suggestions in the Budd statement fail to provide an adequate answer.
[41] Determination, paragraph 5.56(v)(c) **[BT1/3/55]**
[42] Determination, paragraph 5.56(v)(d) **[BT1/3/55]**

a. I am not currently aware of a satisfactory answer to this problem. BT did not suggest one in the Disputes.

b. The DSAC approach avoids this problem by specifying the test at the level of individual services.

46. **Risk of rate of return regulation**. The more aggregated the combination, the greater the unintended risk of imposing rate of return regulation.[43]

a. This introduces potentially significant complexity into the interpretation of the results of the combinatorial tests to avoid adverse effects on efficiency incentives.

b. Such problems might not be insuperable, but the approach would need to be developed and considered. BT did not set out such an approach in the Disputes.

c. The DSAC approach avoids this problem (eg see the rates of return on 2Mbit/s trunk services permitted by DSAC in Table 3 below).

47. **Equity/distributional implications of flexibility in cost recovery**. A judgement would need to be made on the appropriate limits on pricing flexibility as a consequence of equity/distributional implications to avoid common costs being unfairly loaded on to a specific group of customers/consumers.[44] This is especially relevant where SAC/combinatorial tests could provide BT with the opportunity to increase its price by a very large amount despite having market power, as is the case for 2Mbit/s trunk services:

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a. BT's estimated SAC of 2Mbit/s trunk is **[ ]** to **[ ]** higher than FAC (and **[ ]** to **[ ]** higher than DSAC).[45]

b. BT's arguments in the Disputes seemed to imply that it should be permitted to exploit the full extent of the pricing flexibility suggested by SAC/combinatorial tests. In the limit this could involve a price on a service, in which BT has market power, being more than 5 times larger than the FAC. In my view it is unlikely that such a price would be consistent with reasonable equity or distributional judgements.

[43] Determination, paragraph 5.56(v)(e) **[BT1/3/55]**
[44] Determination, paragraph 5.56(v)(f) **[BT1/3/55]**
[45] Determination, paragraph 5.56(vi) **[BT1/3/56]**

c. The DSAC of 2Mbit/s trunk services was, on average, 85% higher than the FAC. Although a substantial difference, DSAC is less likely to raise equity/distributional concerns than SAC/combinatorial tests.

Deficiencies of methodology and cost evidence

48. There were the following further types of deficiency in the evidence submitted by BT in the Disputes on SAC and a sub-set of combinatorial tests:

a. **Consulting Ofcom and other interested stakeholders**. This is an essential step for a methodology to be generally accepted. BT did not undertake it.

b. **Onus on BT to demonstrate compliance**. If BT wished to use SAC/combinatorial tests to justify prices which are subject to a cost orientation obligation, it should have established the methodology in advance, ensured that it was generally accepted and robust, and then used it contemporaneously with its pricing decisions.[46] Instead BT's analysis was simply an attempt at ex post justification.[47]

c. **Concerns about the details of the cost modelling** such as efficient SAC, overstatement of common costs, and inclusion percentages. There would need to be detailed scrutiny in relation to these and other questions of modelling methodology, algorithms, data and assumptions. Previous exercises of cost modelling tasks, in which I have been involved, required iterative analysis over an extended period of a year or more (eg incremental cost modelling leading up to the introduction of the network charge controls on BT in 1997, and analysis of mobile termination costs). A process at least as long and/or resource intensive may be needed here to establish a generally accepted robust methodology, because the requirement would be for a higher degree of disaggregation of increments, which substantially increases the complexity and precision needed in some of the assumptions (such as the cost-volume relationships).[48]

[46] Mr Morden explains in paragraph 23 of his witness statement that BT (or at least the product team) actually gauged whether or not its charges were cost orientated on the basis of BT's management accounts, ie on the basis of PPC as a whole using aggregated trunk and terminating segment FAC ROCE **[BT2/8/JM/8]**.
[47] Determination, paragraphs 5.56(vi)(b) and 7.94 **[BT1/3/56 &123]**
[48] The Guidelines recognise the complexity of the greater degree of disaggregation required for SAC/combinatoral tests (eg at paragraph B.19 **[BT1/12.2]** it is noted that "…to establish such a methodology would require a substantial amount of work beyond that carried out so far").

d. **Failure to take into consideration combinatorial tests for the combinations of services across which the majority of the common costs are shared**. I have dealt with this key flaw in BT's evidence at paragraph 42 above.

Assessment of overcharging claims

49. To assess overcharging, Ofcom initially applied the first order test of DSAC. This identified that the following prices were above DSAC:[49]

a. 2Mbit/s trunk services in 2005/6, 2006/7, 2007/8 and 2008/9;
b. 34/35Mbit/s trunk services in 2007/8 and 2008/9;
c. 2Mbit/s terminating segment, connection in 2005/6;
d. 2Mbit/s terminating segment, main link in 2006/7;
e. 34/45Mbit/s terminating segment, main link in 2006/7;
f. 140/155Mbit/s terminating segment, connection in 2008/9;
g. 140/155Mbit/s terminating segment, main link in 2006/7;
h. 140/155Mbit/s terminating segment, transmission (per km) in 2007/8 and 2008/9;
i. 140/155Mbit/s terminating segment, local end in 2006/7, 2007/8 and 2008/9;

50. Then Ofcom considered the further factors (listed at paragraph 16 above).

The magnitude and duration of the amounts by which charges exceeded DSAC

51. On assessing the magnitude and duration of the excess of charges over DSAC for the services listed at paragraph 49 above, Ofcom considered that there was insufficient evidence in relation to DSAC to support a conclusion that BT overcharged for the following services: 2Mbit/s terminating segment, connection and main link (ie the services at paragraphs 49.c and 49.d above) and 34/45Mbit/s terminating segment, main link (ie the service at paragraph 49.e above).[50]

52. However, this factor suggested evidence of overcharging on 34/45Mbits/ trunk services and 140/155Mbit/s terminating segments (ie the services at paragraphs 49.b, 49.h and 49.i above). But, since Ofcom had not consulted on this conclusion in the Draft

[49] Determination, Table A12.4 **[BT1/3/226]**
[50] Determination, paragraph 7.31**[BT1/3/110-111]**

Determination,[51] it decided not to resolve the Disputes in the Determination in relation to 34/45Mbit/s trunk and all 140/155Mbit/s terminating segment services (also including the services at 49.f and 49.g above). Instead Ofcom decided to obtain further data from BT and issue a separate draft or final determination at a later date.[52]

53. For the remaining service, 2Mbit/s trunk services (listed at paragraph 49.a above), Ofcom noted that BT persistently set charges above DSAC in four of the five financial years and by a significant amount.[53] The evidence is set out in Table 2.

Table 2: BT's price of 2Mbit/s trunk services compared to DSAC (and FAC for comparison)

Price and cost, £ per km [54]	*2004/5*[55]	*2005/6*	*2006/7*	*2007/8*	*2008/9*	*All years*	*2005/6-2008/9*
External unit revenues (price)	15.89	102.95	103.30	103.21	103.16	n/a	103.16
Unit external DSAC	16.76	63.41	82.00	47.45	43.25	n/a	57.14
Price as % of DSAC	**95%**	**162%**	**126%**	**217%**	**239%**	**160%**	**181%**
Unit external FAC	8.90	36.68	37.61	27.17	24.90	n/a	30.87
Price as % of FAC	178%	281%	275%	380%	414%	n/a	334%
DSAC as % of FAC	188%	173%	218%	175%	174%	n/a	185%

Source: Author from spreadsheet sent to the Parties. Price as % of DSAC is also reported in Table 7.1 of the Determination **[DF3/15]**.

Whether charges above DSAC could have caused economic harm to BT's customers or to the consumers of retail leased lines

54. Ofcom concluded that the charges for 2Mbit/s trunk services were likely to have given rise to a number of economic distortions and that the main sources of this economic harm were likely to have been:[56]

[51] This reflects the data from the 2008/09 regulatory financial statements only becoming available in the period between the Draft Determination and the Determination – see paragraph 7.29 of the Determination. **[BT1/3/110-110]**

[52] Determination, paragraph 1.2 **[BT1/3/3]**

[53] Determination, paragraph 7.26 **[BT1/3/110]**

[54] After Ofcom adjustments

[55] In 2004/05 unit revenues are costs were reported and provided to Ofcom by BT on a route-distance basis. Later years are reported and presented on a radial-distance basis and are therefore not directly comparable without the use of route to radial factors.

[56] Determination, paragraph 7.36 **[BT1/3/111]**

a. reducing the overall demand for retail leased lines through increasing retail prices to consumers;
b. distorting competition between CPs at the retail level by favouring those able to self-supply trunk services; and
c. distorting the investment decisions of CPs in terms of whether to build or buy trunk services.

Whether charges below DSAC nevertheless constituted overcharging

55. The Guidelines recognise that there may be circumstances in which prices below DSAC are nevertheless unreasonable.[57] For terminating segment services that were priced below DSAC (and so passed the first-order test), Ofcom concluded that there was insufficient evidence that BT had overcharged.[58]

Rates of return on a fully allocated cost basis

56. Ofcom found that the evidence on rates of return relative to FAC supported the view from the assessment of cost ceilings that there was overcharging for 2Mbit/s trunk services. Table 3 shows these rates of return - see especially the row in bold, labelled (i).[59] Table 2 above also shows the comparison between BT's price in £ and the FAC – BT's price was between about 80% and more than 300% higher than FAC.

[57] Determination, paragraph 5.108 **[BT1/3/68]** which refers to Guidelines, paragraph B.2.
[58] Determination, paragraph 7.77 **[BT1/3/120]**
[59] Ofcom noted that some caution is required in drawing conclusions from ROCE estimates. This is because the BT FAC data upon which they are based represents only one view of cost allocation, but there may be other reasonable patterns of common cost recovery - see Determination, paragraph 5.116 **[BT1/3/69]**.

Table 3: BT's ROCE on 2Mbit/s trunk

	2004/5	*2005/6*	*2006/7*	*2007/8*	*2008/9*	*All years*	*2005/6-2008/9*
Internal and external sales							
(i) At prices charged by BT	**76%**	**102%**	**126%**	**135%**	**142%**	**109%**	**123%**
(ii) If both internal and external prices had been set equal to DSAC (for comparison)	51%	49%	89%	44%	42%	54%	55%
(iii) Following repayments	76%	95%	119%	114%	120%	100%	110%
External sales only[60]							
(iv) At prices charged by BT	47%	104%	126%	135%	142%	106%	127%
(v) If external prices had been set equal to external DSAC (for comparison)	51%	49%	89%	44%	42%	53%	54%
(vi) Following repayments	47%	49%	89%	44%	42%[61]	52%	54%

Source: Author from spreadsheet sent to the Parties. ROCE at prices charged by BT, ie row (i), is reported in Table 7.3 of the Determination **[BT1/3/121-122]**.

57. Table 3 reports ROCEs for the sum of internal and external sales and for external sales alone. Comparing these at the prices charged by BT, ie rows (i) and (iv), the two sets of ROCEs are the same in most years, but different in 2004/5 (and slightly different in 2005/6). This is because of a difference between the prices of internal and external sales in these years (but not the other years). This explains why Ofcom did not find overcharging in 2004/5 (eg in this year the ROCE on external sales at the prices charged by BT in row (iv) is lower than the ROCE in row (v) if prices were equal to DSAC). The difference between the two sets of ROCEs following repayments in rows (iii) and (vi) is because repayments were only required by the Determination on external sales and not internal sales.

[60] The accounting information provided by BT for the Disputes did not split costs and capital employed between internal and external sales. The estimates of rates of return on external sales included in this table therefore assume that the allocation of costs and capital employed is pro rata with the internal versus external volumes split.

[61] The period of the Disputes and so the requirement to make repayments only applied to the first half of 2008/9, but not the second of this financial year. However, the ROCE relates to the full year 2008/9. To avoid the possibility of a misleading impression, the ROCEs in 2008/9 in rows (iii) and (vi) are calculated *as if* repayments applied to the full year. In the absence of this assumption, the ROCEs would be even higher, eg 92% in row (vi). These calculations therefore adopt the "annualised" approach explained at paragraph 64 of the Pigott statement **[BT2/ESP/24]**.

BT's cost data on individual service SAC and a sub-set of combinatorial tests

58. Ofcom considered the evidence submitted by BT on SAC and a sub-set of combinatorial tests, but concluded that it was not sufficiently relevant or reliable to alter its conclusions.[62] The reasons were summarised in Determination, paragraph 5.56 (and are discussed above).

International benchmarking

59. Ofcom considered the international benchmarking evidence submitted by BT, but concluded that it could not be given significant weight for a number of reasons:[63]

    a. the circumstances compared in the international benchmarking evidence were not similarly defined, given the differences in networks, geography, competition and regulation in the countries included;
    b. the analysis did not consider cost differences between countries;
    c. there was an obligation for cost-orientated trunk charges in only three of the nine countries included in the analysis;
    d. for four of the nine countries, trunk prices were not available and terminating segment prices were used as a proxy, resulting in a likely overestimation of prices; and
    e. it was no substitute for actual price and cost data for BT's service in the UK.

BT's circuit analysis

60. Ofcom concluded that BT's circuit analysis was not sufficiently relevant to alter its conclusions, because it was predicated on the basis of aggregating trunk and terminating segments, whereas Ofcom concluded that the assessment should be on a disaggregated basis[64] (as discussed above).

Conclusion

61. Ofcom's conclusion from applying the first-order test and all of the further factors was that BT overcharged for 2Mbit/s trunk services in the period April 2005 to September 2008.

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[62] Determination, paragraph 1.21(v) **[BT1/3/7]**
[63] Determination, paragraphs 1.24 and 7.143-7.150 **[BT1/3/7 & 134-135]**
[64] Determination, paragraph 1.24 **[BT1/3/7]**

Repayments

62. Ofcom concluded that it was appropriate to exercise its discretion to order BT to make repayments. In doing so, Ofcom took account of the following economic considerations (in addition to other issues, such as BT's claim of mitigating factors):

    a. The impact on BT of repaying the overcharged revenue to external customers on BT's rate of return for PPCs in aggregate over the period of overcharging would fall from 15.1% to 14.2%,[65] which was still above BT's average cost of capital of around 12%.[66]

    b. Requiring repayments provided BT with an incentive not to overcharge in the future.[67]

63. The repayments required by Ofcom related to the amounts charged on 2Mbit/s trunk services in excess of DSAC, amounting to £41.688m to be paid to the Disputing CPs.

[65] The Budd and Pigott statements report a different figure for BT's rate of return. I explain the differences in paragraphs 122 to 124.
[66] Determination, paragraph 8.30 **[BT1/3/142]**
[67] Determination, paragraph 8.39 **[BT1/3/143]**

b) Response to Key Arguments in the Yarrow/Decker Report, the Budd Statement and the Pigott Statement

64. In this section, I first set out and respond to the key arguments in the Yarrow/Decker report, the Budd statement and the Pigott statement. Thereafter, in the subsequent three sections I address certain other points made in these documents, which seem material to the arguments advanced.

Summary of response to key arguments

The Yarrow/Decker report

65. The key arguments in the Yarrow/Decker report are that:[68]

a. Ofcom fails to follow its own Guidelines by:
   i. in effect, treating DSAC as a determinative test; and
   ii. failing to make effects and/or likely effects on competition and consumers the primary focus.

b. The consequence of the Determination is setting charges retrospectively that:
   i. fail to provide latitude in pricing that might be expected in a context of partial market liberalisation; and
   ii. when taken in conjunction with Ofcom's price caps, fail to allow BT a normal rate of return.

c. It can be expected in consequence that Ofcom has set prices below new entry levels that pose serious risks of harm to competition.

d. Ofcom is incorrect to assess the relationship of each charge to measures of allocated cost without considering wider questions of cost allocation methodologies and evidence on price-cost relationships.

66. My response to each of these key arguments is as follows (with further details provided in paragraphs 83 to 121 below).

[68] See Yarrow/Decker report, paragraph 5 **[BT2/9/2-3]**

67. The Guidelines describe DSAC as an effective first order test, but note that other considerations are relevant. Consistent with this, Ofcom did not apply DSAC as a determinative test. A range of further factors were taken into account as set out at paragraphs 50 to 60 above. Ofcom's conclusions show that this is so – for example, some charges above DSAC were found not to constitute overcharging in the relevant circumstances, as detailed at paragraph 51 above. I also explain at paragraphs 101 to 102 below how, using Ofcom's approach, other considerations beyond DSAC could also be relevant and affect the conclusion of whether a price above DSAC constituted overcharging in the relevant circumstances.

68. In my view, a sound economic analysis in the circumstances of the Disputes, assessing compliance with ex ante obligations in relation to overcharging, should establish a plausible theory of harm. This should clearly identify the mechanisms for adverse effects on consumers and/or competition; and it should establish that there is a risk that such effects would occur. The Determination adopted such an approach. The analysis is set out in the Determination at paragraphs 7.32-7.72.

69. The suggestions in the Yarrow/Decker report of an absence of latitude in pricing and below-normal rate of return are incorrect and contradicted by the evidence. First, I note that the Yarrow/Decker report does not use the available evidence to set out the latitude in pricing that DSAC provided. As I explain at paragraph 37 above, BT was provided with very significant latitude, eg enabling it to set a price on average 85% higher than FAC and more than treble the common cost recovery implied by FAC.

70. Second, the Determination required repayments on overcharging for 2Mbit/s trunk services, but it did not change the prices of any other services. The rate of return earned by BT on external 2Mbit/s trunk services after repayments was on average 52% over the period (see row (vi) in Table 3), which is more than four times larger than BT's cost of capital. Hence, any failure by BT to earn a normal rate of return on PPC services is patently not a consequence of the Determination.

71. Third, any rate of return below BT's cost of capital would instead be a consequence of BT's under-performance relative to the terminating segment price caps set in 2004. I consider that it would undermine efficiency incentives and cause clear economic harm, if BT was protected from such under-performance by being permitted to exploit its market

power in trunk services as a consequence. Like Ofcom, I take a symmetric approach to such issues: similarly, if BT out-performs the terminating segment price caps, such over-performance should not make it more likely that BT's trunk prices are found to constitute overcharging.[69]

72. Contrary to the suggestion in the Yarrow/Decker report, there is no harm to competition in the wholesale trunk services market from the revised prices for 2Mbit/s trunk services, which were the only prices that were changed by the Determination. Such prices are substantially above the level of DLRIC that could raise concerns about excessively low prices.[70] In contrast, it is BT's high prices for 2Mbit/s trunk services that were likely to have distorted competition in downstream markets, such as retail leased lines. Furthermore, the repayments required in the Determination are likely to promote downstream competition by providing BT with an incentive to avoid overcharging on wholesale services in the future.

73. The economic rationale for DSAC that I set out above (see paragraphs 18 to 38 above) shows that appropriate consideration of costing and pricing issues was taken into account by Ofcom. My understanding is that, in referring to "wider" cost and pricing issues, the Yarrow/Decker report is arguing either that, for the purposes of assessing cost orientation, relevant combinatorial tests should be carried out to take account of the wider pattern of cost recovery, or that trunk circuits should be aggregated with terminating services to which they are a demand-side complement. I do not accept either of these contentions. DSAC allows for substantial flexibility in the pattern of common cost recovery (eg see paragraphs 35 to 37 above) and avoids the difficulties with combinatorial tests (eg see paragraphs 41 to 48 above). Trunk services are not bought in fixed proportions with terminating segments, notably because terminating segments can be bought from BT either with or without trunk services. Hence the separate price of 2Mbit/s trunk services is economically meaningful and should not be aggregated with other services (eg see paragraphs 14 to 15 above).

[69] Determination, paragraph 4.96 **[BT1/3/41]**

[70] Or other cost standards that might be relevant to anti-competitive low pricing, such as FAC, LRIC or, in other contexts, average variable or avoidable costs.

The Budd statement

74. My understanding[71] is that the key arguments in the Budd statement are that:

a. The effect of the Determination is to reduce BT's rate of return below its cost of capital.
b. Ofcom's justification for DSAC is that it is a proxy for combinatorial tests, but it is a poor proxy.

75. My response to these key arguments can be summarised as follows (see paragraphs 122 to 136 below for further details):

a. I have already addressed the question of BT's rate of return at paragraphs 56 and 70 above. In addition, I note that the figures on BT's rates of return in the Budd statement are misleading as indicators of the effect of the Determination, because they include:

i. 2004/5, even though Ofcom did not find overcharging in this year;
ii. a hypothetical repayment to BT's downstream operations which was not required by the Determination and is not economically meaningful; and
iii. terminating segments, for which Ofcom did not find overcharging or change prices.

b. There is a false premise in the Budd statement, because DSAC is an alternative to combinatorial tests, not a proxy and it is consciously a more restrictive test (see paragraphs 32 to 35 above). This false premise undermines these criticisms of DSAC in the Budd statement.

The Pigott statement

76. My understanding[72] is that the key arguments in the Pigott statement are that:

a. The DSAC first order test was never intended to be the sole or a key determinant of whether prices were excessively high, but instead a signal as to whether further consideration of charges is required.
b. The first order test as set out in the Guidelines relates to services, not components. Although not explicitly set out in the Pigott statement, BT claims in the NOA (referring to the Pigott statement) that the test therefore does not apply to 2Mbit/s trunk segments, because they are components, not services.

[71] The Budd statement itself does not set out a summary of key points.
[72] The Pigott statement itself does not set out a summary of key points.

77. I disagree with first key argument in the Pigott statement on the role of the DSAC first order test for the following reasons (for further details, see paragraphs 137 to 163 below). First, the DSAC ceiling is an effective first order test, ie it is an important, but not determinative, test. This is reflected in the Determination, which sets out Ofcom's methodology to assess overcharging as the first order test of DSAC plus a range of further factors to be considered (including BT's evidence on SAC and a sub-set of combinatorial tests); and then applies this methodology to the facts and circumstances in the Disputes.[73]

78. Second, I disagree with the characterisation of the first order test in the Pigott statement that it is a mere "signal" of whether further consideration is required, using SAC and combinatorial tests. This false characterisation has the incorrect implication that the first order test is a relatively unimportant first stage in any investigation and that little or no weight should be placed on it in the final conclusion. Ofcom addresses this argument in the Determination at paragraphs 5.100 to 5.106 **[BT1/3/67]**. I also consider that the historical context of the lead-up to the publication of the 1997 Guidelines, including some of the very documents that Mr Pigott references,[74] supports Ofcom's view of the role of DSAC in the Determination.

79. Third, I note that the disagreement between Ofcom and BT about the importance of DSAC ceilings and the use of SAC/combinatorial tests in the context of the Disputes and this Appeal mirrors a similar difference of view between Oftel and BT at the time of the 1997 Guidelines (to which the Pigott statement refers). Yet, despite BT's arguments to the contrary at the time, in the 1997 Guidelines **[BT3/12.1]** (and subsequently in the Guidelines in 2001 **[BT3/12.2]**), Oftel:

    a. re-iterated the use of DSAC as the ceiling in the first order test (an approach it adopted throughout the previous, extended consultation process);
    b. specified that, to be taken into account in an investigation, evidence on SAC and combinatorial tests would need to satisfy the requirement of being produced using a "generally accepted robust methodology"; and

[73] See paragraphs 16-17 and 49-61 in this statement and the references to the Determination therein.
[74] I note that the Pigott statement refers only to the December 1995, March 1996 and June 1996 documents. However, Oftel also published consultations or statements on these issues in December 1996, May 1997 and July 1997.

c. noted that establishing such a methodology would require a "substantial amount of work beyond that carried out so far".[75]

80. Fourth, Ofcom's approach in the Determination was consistent with the 1997 Guidelines and the Guidelines. For example, Ofcom considered whether BT's methodology was either generally accepted or robust and concluded that it was neither.[76] In contrast, I note that the Pigott statement fails to refer to either of the points in the 1997 Guidelines set out at paragraphs 79.b and 79.c above.

81. As regards the second key argument about components and services, there is no disagreement that the DLRIC floor and DSAC ceiling apply to individual services (not components). However, 2Mbit/s trunk segments are services, not components. Components are at a more granular level than services and they are combined in fixed proportions to form services. In my view, it is clear that 2Mbit/s trunk segments are services from:

a. the purchasing patterns (ie they are not purchased in fixed proportions with terminating segments);
b. the fact that there are more granular components that are combined to form the 2Mbit/s trunk service;
c. the analogy between trunk services and BT's switched interconnection services for voice calls;
d. the economic significance of the distinct charge for 2Mbit/s trunk segments for purchasing and investment decisions and ultimately for retail consumers;
e. Ofcom's (and previously Oftel's) market analysis and distinct regulation applied to trunk segments; and
f. BT's own publications which also recognise that 2Mbit/s trunk segments are services, not components, including its Financial Statements and its Wholesale Catalogue that details all the services it provides.

The first order test of DLRIC floors and DSAC ceilings therefore applies to 2Mbit/s trunk services on their own and not aggregated with terminating segments.

[75] 1997 Guidelines, paragraph C.19 **[BT3/12.1]**; 2001 Guidelines, paragraph B.19 **[BT3/12.2]**
[76] Determination, paragraphs 7.92-7.133 **[BT1/3/123-132]**

82. I now provide, where necessary, greater detail on my reasons for disagreeing with the key arguments in the Yarrow/Decker report, the Budd statement and the Pigott statement.

Key points in the Yarrow/Decker report

The Guidelines

83. The Yarrow/Decker report alleges that Ofcom's Determination is not consistent with the Guidelines **[BT3/12.2]**. I was one of the primary authors in 1997 of the relevant sections of the 1997 Guidelines **[BT3/12.1]** (much of which was largely unchanged in the Guidelines, especially Annex B).

84. The Yarrow/Decker report suggests that in the Determination Ofcom's primary focus was on cost floors and ceilings, not on effects or likely effects of BT's pricing on competition and consumers, as the Guidelines state.[77]

85. As regards the analysis of effects, I note that in different places in the Guidelines the role of such analysis in an investigation is described in apparently different terms:

a. In paragraph 3.1 of the Guidelines it is stated that the "primary focus of an investigation of a complaint under Condition 69.1 will however be the effect or likely effect of the charge on competition and on consumers".

b. In paragraph B.2 of the Guidelines it is stated that "Oftel will seek to analyse the effects of the charge in the relevant market and will take a view on this based on the individual circumstances of each case".

86. This apparent difference is, however, illuminated by the 1997 Guidelines:[78]

> "Oftel's general approach to investigations about anti-competitive charging is set out in the Guidelines on the operation of the Fair Trading Condition. Consistent with those Guidelines, the principal focus of investigations will be the effect of the behaviour complained about. However, Oftel would regard measures of incremental cost floors and stand-alone cost ceilings as a good first order test as to whether the

[77] Yarrow/Decker report, paragraph 66 **[BT2/9/22]**

[78] 1997 Guidelines, paragraph 4.28 in chapter 4 [**BT3/12.1]** ("Interconnection agreement: dealing with complaints about anti-competitive behaviour and unreasonable terms and conditions"), which was not included in the Guidelines in 2001 **[BT3/12.2]**.

charge is in fact anti-competitive or excessive (but other factors, in particular, the likely effect on the market or consumers will also be taken into account). The methodology which Oftel will use to derive floors and ceilings for inland conveyance services is set out in Annex C."

87. I note that in this same paragraph the effect of the behaviour is described both as the "principal focus" of an investigation, wording which is similar to that of paragraph 3.1 of the Guidelines in 2001, and also as an "other factor" to be "taken into account" in addition to the first order test of DLRIC floors and DSCAC ceilings, wording which is more similar to that used in Annex B of the Guidelines. The two forms of words should therefore be considered to have a consistent meaning. The latter is offered as a clarification of the former, given the use of floors and ceilings as a first order test. The analysis of effect does not make the use of floors and ceilings irrelevant and it is clear that they are to be given significant weight.

The first order test is an important, albeit not determinative, test

88. In my view the Yarrow/Decker report, like the Pigott statement **[BT2/8/ESP]**, underplays the significance placed on DSAC in the Guidelines, in suggesting that it was merely an initial screening test of little significance to the conclusion on overcharging.[79]

89. First, both the Guidelines and the 1997 Guidelines refer to "floors" and "ceilings", which are *defined* as being the DLRIC and DSAC respectively;[80] and they state that, even if not definitive on their own, these floors and ceilings are an "effective first order test for the likelihood of anti-competitive or exploitative charging".[81] The very fact that the term "ceiling" was defined as being the DSAC, and not the individual service SAC (or combinatorial tests), indicates the importance placed on DSAC.

90. Second, the Guidelines specify the requirement for evidence on SAC and combinatorial tests to be "robust" and "generally accepted", and explain that to achieve such a standard would require "a substantial amount of work beyond that carried out so far".[82] This again reinforces the intended importance of DSAC.

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[79] Yarrow/Decker report, paragraphs 63 and 110 [**BT2/9/21&32]**
[80] Guidelines, paragraphs B.4 and B.15 **[BT3/12.2]** and 1997 Guidelines, paragraphs C.4 and C.15 **[BT3/12.1]**; see also paragraph 29 above.
[81] Guidelines, paragraph B.2 **[BT3/12.2]**
[82] Guidelines, paragraph B.19 **[BT3/12.2]**

91. Third, in response to the Pigott statement, in paragraphs 138 to 151 below I explain why consideration of the history of the development of the first order test of DLRIC and DSAC shows that Oftel envisaged it to form an important, albeit not determinative, test. The exact role evolved through the series of consultation documents, from determining the burden of proof and with charges outside floors and ceilings requiring Oftel's prior consent, to being regarded as very important (particularly in the first stage of the assessment), providing useful yardsticks and an effective first order test. Throughout the consultation process, DLRIC floors and DSAC ceilings were seen as playing an important role in the assessment.

DSAC was not applied as a mechanistic rule

92. The Yarrow/Decker report suggests that Ofcom applied the DSAC approach as a determinative rule. As I have set out above, this was not the case. Ofcom considered a range of additional factors in addition to DSAC (see the list at paragraph 16 above) and when it assessed them, the conclusions from the first order test were altered (see paragraphs 50 to 61 above). For example, some charges that were above DSAC were nevertheless found not to constitute overcharging (see paragraph 51 above).

The analysis of economic harm was fit for purpose

93. The Yarrow/Decker report alleges that Ofcom's approach to the analysis of effects is "wholly different" to the approach to the assessment of economic effects in the *Napp* Competition Act case.[83]

94. Since the issue in the Disputes concerns overcharging, my understanding is that the Yarrow/Decker report is referring to the analysis of economic effects by the Office of Fair Trading ("**OFT**") and/or the Competition Appeal Tribunal ("**the Tribunal**") as regards the finding of excessive prices by Napp to the community segment.[84] However, I cannot be sure, as the Yarrow/Decker report provides no page or paragraph references.

95. In its analysis of excessive pricing in *Napp*, the OFT relies on a range of evidence on profit and prices. With regard to the allegation in the Yarrow/Decker report, first, it is not clear to me that the OFT's analysis provides direct evidence of the harm suffered by

[83] Yarrow/Decker report, paragraph 67 **[BT2/9/22]**
[84] OFT decision, paragraphs 203-234 **[DF4/9/55-64]**

consumers (as distinct from analysis of whether the prices are excessive - a distinction that the Yarrow/Decker seeks to make; see paragraph 97 below). Second, as noted at paragraph 34 above, ex ante regulation is intended to be more stringent and restrictive on pricing behaviour than competition law. Therefore, in my view, there should be a lesser requirement in the Disputes to show the effect or likely effect (ie economic harm) than for an investigation under competition law, such as *Napp*.[85] Third and in any case, in my view, Ofcom's analysis in the Determination is not "wholly different" to the OFT's analysis. To support my view, I set out in Table 4 a comparison between evidence in the Determination and the types of evidence referred to in the OFT's summary of its conclusion.[86]

Table 4: Comparison of types of evidence used by the OFT in its conclusion on excessive prices in *Napp* and in Ofcom's Determination

OFT's evidence	*Evidence in the Determination*
Napp's profit on the product under investigation (ie MST[87] sales to the community segment)	BT's price relative to DSAC and BT's rate of return on 2Mbit/s trunk services[88]
Napp's profit on other products	BT's price relative to DSAC and rate of return on trunk services at other bandwidths and on terminating segments[89]
Napp's profit over time for the product under investigation	BT's profit on 2Mbit/s trunk over the period, 2004/05 to 2008/09
Napp's prices over time for the product under investigation	BT's price of 2Mbit/s trunk over the period, 2004/05 to 2008/09
Competitors' profit and prices of the product under investigation	n/a[90]
Absence of entry into the market (segment) under investigation[91]	Absence of widespread entry into wholesale trunk market[92]

Source: Author from OFT's Napp decision and Determination

[85] This point may also be accepted in the Yarrow/Decker report – see paragraph 67: "Whilst it is not expected that the level of detail in an Ofcom determination would match that in a Competition Act decision….".
[86] OFT's *Napp* decision, paragraphs 231-232 **[DF4/9/64]**
[87] MST is a sustained release morphine product.
[88] See Tables 2 and 3 above
[89] Determination, Tables 7.1 and 7.3 **[BT1/3/108&121]**
[90] Competitors to BT in wholesale trunk segments either self-supply or sell to other CPs. Self-supply by CPs does not yield meaningful price information (since at most there is a transfer price – see paragraphs 210 to 211 below). Sales by one CP to another CP are typically at bespoke prices (and may also be part of a wider package of services), which makes it difficult to obtain useful or representative prices charged by competitors (see January 2008 BCMR consultation document, paragraph 6.23).
[91] The OFT also presents evidence on Napp's profit and prices for the product under investigation when sold to different customers outside the relevant market segment (ie sales of MST to hospitals or for export). My understanding is that there are no corresponding sales in the case of 2Mbit/s trunk services.
[92] Determination, paragraph 7.70 [**BT1/3/118-119]**

96. I am unable to comment further on the comparison between the Determination and the *Napp* case without a clearer exposition of the allegation being advanced in the Yarrow/Decker report.

97. The Yarrow/Decker report suggests that the Determination deduces economic harm on the basis of the prior assumption, based on DSAC tests, that prices are excessive. It contends instead that evidence of harm should be used to infer the existence of excessive prices.[93]

98. According to the Guidelines, DSAC is an effective first order test for the likelihood of exploitative charging (even if it is not determinative).[94] This suggests that economic harm is normally expected to follow from prices above DSAC, even if such an effect may not always happen. Therefore, in my view, in this context of assessing overcharging in relation to ex ante obligations, a sound economic analysis should:

a. identify the mechanisms why adverse effects on consumers and/or competition might arise; and either
b. establish that there is a risk of the adverse effects occurring; or
c. identify the reasons why economic harm would not arise in the particular circumstances (despite price being above DSAC).

99. The analysis of economic harm generally involves identifying a counterfactual against which the actual outcome can be compared. This is especially so when considering the possible adverse effects from apparently high prices. The analysis then assesses the implications for consumers and/or competition from the actual prices charged, compared to the level assumed in the counterfactual.

100. Given its role as an effective first order test, pricing of the service under investigation at DSAC will usually be a reasonable counterfactual in investigations to which the Guidelines apply. However, alternative counterfactuals might be reasonable in appropriate circumstances. Even where DSAC is considered the best available counterfactual, an analysis of the evidence and circumstances might identify additional

[93] Yarrow/Decker report, paragraphs 68-70 **[BT2/9/22-23]**
[94] Guidelines, paragraph B.2 **[BT3/12.2]**

relevant considerations to be taken into account. I now provide an example of each of these possibilities.

101. An example of an alternative counterfactual is provided by two services, A and B, that are always bought in a fixed proportion from the same supplier and they share common costs. For simplicity, assume that a buyer always purchases one unit of service B if it buys one unit of service A. The price of service A is above DSAC and so fails the first order test. But the price of the other service, B, is further below DSAC. In these circumstances, a more appropriate counterfactual for the analysis of economic harm than pricing at DSAC on service A would be pricing at DSAC aggregated across both services A and B.

102. For this example, the change in the counterfactual has an important implication for the analysis. The conclusion would be that, despite the price of service A failing the first order test, there is not an adverse effect on consumers or competition and overcharging was not occurring on service A (subject to any other relevant considerations).

103. An example of an additional relevant consideration is provided by an investment in an innovative service with highly uncertain outcomes (including a significant ex ante risk of failure). In these circumstances, a price yielding a return equal to the cost of capital (which is taken into account in deriving the DSAC) may be insufficient to ensure that the investors are offered a "fair bet".[95] If so, the apparently high price relative to cost may simply be the favourable outcome *ex post*, even though unfavourable, loss-making outcomes were also very possible *ex ante*. Failing to take this "fair bet" consideration into account, where it is highly relevant, might lead to a conclusion of overcharging that, in effect, penalised "success" (whereas, if the outcome had instead been unfavourable, ie a "failure", the firm and its investors would have had to bear the loss themselves).

104. A further possible example of an additional consideration (or alternative counterfactual) may be evidence on SAC and combinatorial tests, if derived using a generally accepted robust methodology.

[95] For a description of the "fair bet" issue, see Annex 4 (especially paragraphs A4.3 to A4.6) in Provision of Technical Platform Services, Guidelines and Explanatory Statement, Ofcom, 21 September 2006 [**DF3/14/3-4**].

105. Taking account of the discussion above and in the circumstances of the Disputes, in my view, Ofcom's approach to the assessment of economic harm was reasonable:

a. The counterfactual used by Ofcom was pricing at DSAC.[96] But Ofcom also considered in detail, and set out its specific reasons for rejecting, BT's arguments for alternative counterfactuals.[97] The fixed-proportions example set out above was not relevant to the assessment of overcharging on 2Mbit/s trunk services in the Disputes because, for example, trunk and terminating segment services are not bought in fixed proportions (eg see paragraphs 73 and 157).

b. Ofcom specified three clear mechanisms through which it considered that economic harm could occur (see paragraph 54 above):
   i. higher prices to retail consumers;
   ii. distortion of competition at the retail level between CPs; and
   iii. distortion of CPs' investment decisions.

c. Ofcom assessed BT's arguments why economic harm would not arise and set out its reasons for concluding that these were not applicable to the circumstances of the Disputes.[98] In my view, the "fair bet" example set out above is not applicable to 2Mbit/s trunk services, which are mature services for which the outcome of BT's investment is not unusually uncertain (nor carries an abnormal ex ante risk of failure), eg Table 3 shows that BT's rate of return on 2Mbit/s trunk services was consistently high, both with and without repayments. In the Determination, Ofcom set out its detailed reasons why it considered that BT's methodology and evidence on SAC and a sub-set of combinatorial tests was neither generally accepted nor robust.

d. Taking account of the available evidence and the relevant circumstances, Ofcom concluded that, not only did BT's charges for 2Mbit/s trunk services have the potential to cause economic harm, but it seems likely that the adverse effects occurred.[99]

106. In particular, I do not agree with the contention in the Yarrow/Decker report that Ofcom's approach and conclusion of economic harm followed inevitably or

[96] Determination, paragraph 7.38 **[BT1/3/111-112]**
[97] Determination, paragraphs 7.40-7.58 **[BT1/3/112-116]**
[98] See, for example, Determination, paragraphs 7.63-7.64, 7.66 and 7.69-7.72 **[BT1/3/117-119]**
[99] Determination, paragraph 7.35 **[BT1/3/111]**

mechanistically from BT's prices for 2Mbit/s trunk services failing the first order DSAC test. In the Determination, Ofcom considered a range of evidence. It reported a variety of arguments by BT and set out specific reasons for rejecting them. In my view, it is the facts and circumstances of the Disputes that led Ofcom to its conclusion on economic harm and overcharging, not any flaw in its approach.

DSAC provided substantial pricing flexibility

107. I have addressed above the erroneous suggestion in the Yarrow/Decker report that the DSAC approach did not provide BT with latitude in its pricing, which is contradicted by the evidence (see especially paragraph 37 and Tables 1 and 3 above).

108. As explained at paragraphs 18 to 19 above, the overarching economic context is the regulatory balance between providing pricing flexibility and avoiding unreasonably high prices of services in which the regulated firm has market power. Given the extent of the bounded latitude it provided, in my view the DSAC approach struck a reasonable balance in the circumstances of 2Mbit/s trunk services.

The Determination and BT's rates of return

109. I have addressed above the misleading suggestion in the Yarrow/Decker report that the Determination resulted in BT earning less than its normal rate of return - see especially paragraphs 56, 70 and Table 3 above (and I discuss BT's rates of return further at paragraphs 122 to 130 below).

The Determination promotes competition and poses no harm to entry or competition

110. The basis for the claim in the Yarrow/Decker report that the Determination is harmful to competition seems to be:

    a. BT's evidence on its aggregate rate of return on PPC services.[100]
    b. The Determination set an "excessively low value for a price ceiling for trunk services".[101]

111. In my view, for the reasons set out below, these points are misconceived.

[100] Yarrow/Decker report, paragraphs 16-17 **[BT2/9/8]**
[101] Yarrow/Decker report, paragraph 20 **[BT2/9/9]**

112. As regards BT's evidence on aggregate rates of return, first, for the reasons set out in the Determination and above, this is not the appropriate basis to assess charges, including the effects on entry and competition. The only prices changed by the Determination were for 2Mbit/s trunk services and these prices are economically meaningful. Hence an assessment of the effect of the Determination on competition (as opposed to the effect of other regulation, such as the price caps on terminating segments) needs to consider these prices and the rates of return they afforded. Aggregating these prices and rates of return with those for terminating segments obscures the proper assessment. BT's rates of return on 2Mbit/s trunk services were substantially above its cost of capital, both before and after repayments.

113. Second, I consider that BT's evidence on its aggregate rate of return on PPC services is misleading and not useful for the purpose of analysing the effect of the Determination. Since the rate of return figures, on which the Decker/Yarrow report relies, were set out in the Budd statement, I explain the deficiencies in my response to that statement (see paragraphs 122 to 130 below).

114. Dealing with the second point, I consider that the claim in the Yarrow/Decker report that the Determination set an excessively low price ceiling for trunk services is contradicted by the evidence. I note that the Yarrow/Decker report does not present the evidence on the level of DSAC of 2Mbit/s trunk services. According to BT's own cost estimates, the DSAC ceiling was substantially above LRIC (or DLRIC or FAC). The figures set out in **CONFIDENTIAL** Table 1 above show that DSAC was between about **[ ]** and **[ ]** larger than LRIC in the **CONFIDENTIAL** years 2005/6-2007/8 (ie between **[ ]** and **[ ]** times larger). In these years DSAC was between about 75% and 120% higher than FAC, implying a rate of return significantly above BT's cost of capital (ie above the normal rate of return).

115. I also note the potential confusion in the basis for the Yarrow/Decker report's incorrect claim that the Determination is harmful to competition, since part of the evidence on which it relies relates to aggregated rates of return across trunk and terminating segments, whereas other evidence or assertions relate to trunk prices specifically. As explained above and below, the former evidence on aggregated trunk and terminating services is irrelevant to a proper analysis of the effects of the Determination on entry and competition in the wholesale trunk segments market. The latter evidence on trunk

segment prices, costs and rates of return clearly contradicts the claim of harm to competition in trunk services.

116. It is important to recognise that trunk prices can affect competition at different vertical levels in the value chain, both:

a. Wholesale trunk services (as discussed above and in further detail in Section c) at paragraphs 174 to 187 and 212 to 215 below); and
b. Downstream markets, such as retail leased lines.

117. An important rationale for Ofcom to impose the cost orientation obligation on services in the wholesale trunk segments market in the 2004 LLMR was to promote competition in the downstream retail leased lines markets (see paragraph 34 above).[102] Lower prices of trunk services would *benefit* competition in downstream markets, as assessed by Ofcom in its analysis of the economic harm from BT's high prices of 2Mbit/s trunk segments (see paragraph 54 above).

118. In addition, I consider that the Determination is likely to promote competition in telecommunications markets. In particular, this is because the repayments required by the Determination provide BT with a greater incentive to avoid future overcharging on wholesale services.[103] Such services may be used as important inputs by competitors and new entrants into their services in downstream markets.

Cost allocation and price-cost relationships

119. The claim in the Yarrow/Decker report is that cost orientation cannot be assessed on a service-by-service basis as if each service had no economic linkages with other services. For example, the report argues that a decision of a regulator to allocate a greater or lower proportion of common costs to one service necessarily has implications for the allocation of common costs to others services.[104]

120. In its arguments about allocation of fixed and common costs, the Yarrow/Decker report appears to confuse FAC and DSAC and seems also to confuse cost allocation and pricing. The sum of the FACs of all services adds up to BT's total costs (including a

[102] See also 2004 LLMR, paragraph 8.62, for example **[BT3/12.12]**
[103] Determination, paragraph 8.39 **[BT1/3/143]**
[104] Yarrow/Decker report, paragraph 58, third bullet point **[BT2/9/20]**

reasonable return on capital). Hence, if we start from all prices equal to FACs and then allocate less cost to one service and reduce its price accordingly, it means allocating more cost to another service, and overall, the firm is pushed into loss, unless the price of the other service increases to reflect this increased cost allocation. But the Yarrow/Decker report fails to recognise that this is not the case with DSACs. The sum of all of the DSACs adds up to substantially more than BT's total costs. Even within the same increment, such as the Core increment which includes PPC services, the sum of the DSACs adds up to BT's SAC for the Core increment (ie the combinatorial SAC of all Core services). This substantially exceeds BT's FAC for PPCs or for Core increment services. BT would only need to recover all of these common costs from Core services if all of the very large number of BT's other services (in other increments: Access, International, Rest of Network and Other) made a zero contribution to the common costs shared with the Core increment – this is implausible.

121. The evidence set out above in Tables 1, 2 and 3 above demonstrates that, in practice as well as in principle, the DSAC approach provided BT with substantial pricing flexibility and the opportunity to recover a large contribution of common costs from 2Mbit/s trunk services, which were the only services on which Ofcom found overcharging in the Determination.

Key points in the Budd statement

The Determination and BT's rates of return

122. Paragraph 11 of the Budd statement, using estimates in the Pigott statement, claims that
CONFIDENTIAL the price reductions to DSAC reduced BT's average ROCE to **[ ]** on PPCs in aggregate (ie including terminating segments as well as trunk segments and including BT's internal sales).

123. In contrast, Ofcom noted that the impact of the price reductions to DSAC was to reduce BT's ROCE on PPCs from 15.1% to 14.2%. This is above BT's cost of capital of around 12%. This was part of Ofcom's consideration of whether it was reasonable to direct BT to repay the overcharging.[105] However, since this calculation involves aggregation of

[105] Determination, paragraph 8.30 **[BT1/3/142]**

terminating and trunk segments, it is irrelevant to the assessment of whether BT overcharged.

124. In my view the rates of return derived by Ofcom are more appropriate to assess the impact of the Determination than the different figures in the Budd statement:

a. One reason for the difference is that the Budd statement assumes that the price reductions also apply to BT's internal sales on the argument that this shows the impact on BT's network returns.[106] Ofcom's calculation excluded any repayments by BT to itself. Such repayments were not required by the Determination and are an internal transfer within BT (as the Budd statement recognises in footnote 6). The rates of return reported in the Budd statement are therefore artificially depressed by including a hypothetical repayment which the Determination did not require. Furthermore, this hypothetical repayment is not economically meaningful, because it would be paid by BT to itself, resulting in no change in BT's overall profitability. Adjusting the rate of return estimate in the Budd statement to exclude such hypothetical repayments by BT to itself, the figure increases from **[ ]** to **[ ]**.

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b. Another difference is that the Budd statement includes 2004/5 in the average. However, 2004/5 should not be included because Ofcom did not find overcharging in 2004/5, so there was no impact of repayments in this year. Furthermore, since (according to BT's accounting figures) BT's ROCE on terminating segments is especially low in this year, it presents a distorted impression to include 2004/5. Excluding 2004/5 from the rate of return calculation in the Budd statement (in addition to excluding the hypothetical repayments on internal sales), the figure increases from **[ ]** to 14.2%. (ie Ofcom's figure in the Determination).

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125. Tables 1 and 2 and paragraphs 13-16 in the Budd statement (using estimates derived in the Pigott statement) argue that CPs enjoyed prices that have not enabled BT to cover its WACC on external sales even before repayments; and the effect of the repayments is to reduce ROCE from **[ ]**to **[ ]**.

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126. Again, this is an aggregated calculation across terminating and trunk segments and so is irrelevant to the assessment of overcharging. BT's ROCE on external sales of 2Mbit/s

[106] Budd statement, footnote 6 **[BT2/8/RB/5]**

trunk services was substantially in excess of its cost of capital, as shown in Table 3 above, ie more than 50%. As above, the calculation in the Budd statement includes 2004/5, which is irrelevant to the effect of the Determination.

127. In addition to including either irrelevant services or years, BT's estimated ROCE of **[ ]** is also potentially misleading for two additional calculation complexities that are not discussed in either the Budd or the Pigott statement. I discuss these complexities in paragraphs 353 to 360 below in response to the Pigott statement.

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128. Paragraph 19 of the Budd statement suggests that price regulation that fails to permit the recovery of efficiently incurred costs will frustrate the development of competition and ultimately lead to a funding problem for the regulated firm.

129. On 2Mbit/s trunk services, BT's ROCE was substantially in excess of its WACC, both before and after repayments (see Table 3). This demonstrates that BT's low overall ROCE was not caused by 2Mbit/s trunk services. It was instead due to the low ROCEs earned on the terminating segment services, which were regulated under price caps in the period. Ofcom's Determination made no changes to these prices. As explained above, in assessing overcharging, terminating and trunk services should not be aggregated. One of the reasons is the adverse effect on charge control incentives.[107]

130. As to the specific points in the Budd statement about alleged adverse effects:

a. Alleged deterrence of potential entrants: the only prices below FAC were for terminating segment prices:

i. These were regulated under price caps because of BT's persistent SMP. Hence, whilst the concern may not be completely irrelevant, there was little prospect of major new entry in terminating segments. The Budd statement (like the Yarrow/Decker report) asserts that there was an adverse effect on competition, but fails to establish a cogent theory of harm or to provide supporting evidence.

ii. Price caps set by Ofcom allow the regulated firm a rate of return equal to its cost of capital at the end of the control period on a forecast basis. A firm can in practice

[107] Determination, paragraphs 4.90-4.96 **[BT1/3/40-41]**

earn a higher or lower rate of return for a number of reasons.[108] This means that price caps involve a trade-off: prices can depart from costs during the control period in the interests of promoting incentives for improved efficiency. To preserve incentives, in my view it is important that a symmetric approach is adopted as between outturns that are above and below the cost of capital.

iii. The fundamental point, however, is that the Determination had no effect on terminating segment prices. Therefore, even if there were a possible adverse effect (which, in my view, has not been demonstrated), it did not arise from the Determination.

b. Alleged funding problem:

i. As noted above, the Determination only affected BT's prices for 2Mbit/s trunk segments and its rate of return on these services was substantially above its WACC both before and after repayments (see Table 3). Since the Determination had no effect on terminating segment prices, any possible adverse effect does not arise from it.

ii. As discussed at paragraph 123 above, in considering whether repayments should be required, the Determination took account of the effect of repayments on BT's ROCE for PPCs in aggregate for the period of overcharging and confirmed that BT's ROCE would still be above its WACC.

DSAC is an alternative to combinatorial tests, not a proxy

131. The Budd statement claims that Ofcom uses DSAC as a proxy for the results of combinatorial tests and argues that it is not a reliable proxy.[109]

132. The source for this claim in the Budd statement is paragraph A13.13 of the Draft Determination. It is notable that the claim relates to the Draft Determination and not the Final Determination (and indeed rests on one paragraph in Annex 13). The Final Determination did not describe DSAC as a proxy for combinatorial tests, because this is

[108] Determination, paragraph 7.53 **[BT1/3/114-115]**
[109] Budd statement, paragraphs 62-65 **[BT2/8/RB/22-24]**

not an accurate description. Ofcom recognised explicitly – as do the Guidelines – that DSAC allows BT less flexibility in its pricing than full-blown combinatorial tests.

133. Paragraph A13.13 **[BT1/4/143]** of the Draft Determination, on which the claim in the Budd statement rests, stated that:

> "Carrying out a significant number of combinatorial tests is clearly not possible in the timescales available to Ofcom for resolving the Dispute. Therefore, an alternative methodology that **proxies** this is necessary. One approach that has been adopted by Ofcom (and Oftel previously) in the context of the network charge controls is the use of DSAC and DLRIC…" [emphasis added]

134. The corresponding paragraph in the Final Determination is paragraph A11.14 **[BT1/3/210]**, which reads:

> "Given the number of potentially relevant combinations, carrying out a sufficient number of combinatorial tests is clearly not possible in the timescales available to Ofcom for resolving the Dispute. Therefore, an **alternative** methodology is necessary. The approach that has been adopted by Ofcom (and Oftel previously) in the context of the network charge control is the use of the DSAC and DLRIC." [emphasis added]

135. Therefore, Ofcom clarified in the Determination that DSAC is not a proxy for combinatorial tests, but an alternative. At no point in the Determination did Ofcom describe DSAC as a proxy. The only uses of the word "proxy" in relation to combinatorial tests are when Ofcom describes BT's comments (eg Determination, paragraphs 5.20, 5.44, 5.101) **[BT1/3/46,52 & 67]**.

136. All of the subsequent criticisms of DSAC in this section of the Budd statement (eg paragraphs 62-65 **[BT2/8/RB/22-24]**) are therefore based on a false premise. Ofcom's justification for DSAC was not as a proxy for combinatorial tests, but as an alternative, which involves a departure from the textbook theory of contestability. Such a departure is justified by the difficulties in principle and in practice in using combinatorial tests, as set out above and summarised in paragraph 5.56 of the Determination **[BT1/3/54-55]**.

Key points in the Pigott statement

The first order test is an important, albeit not determinative, test

137. In my view the Pigott statement, like the Yarrow/Decker report, underplays the significance placed on the DLRIC floor and DSAC ceiling in the Guidelines, in suggesting that:

> "…it was always understood that these "floors and ceilings" would not be a key determinator of whether prices were excessively high. Rather they were merely "first order tests" which would signal whether further consideration of charges might be required"[110]

138. I have already addressed a similar argument about the role of the DSAC first order test in the context of the Yarrow/Decker report (see paragraphs 88 to 91 above). There is no disagreement that the first order test of floors and ceilings is not a determinative test on its own.[111] However, in my view, it is incorrect to assert, as the Pigott statement does, that the role of the first order test was limited merely to signalling the need for further analysis, which the Pigott statement suggests would use evidence on SAC and combinatorial tests. While the precise emphasis on the first order test evolved during the extended consultation process leading up to the publication of the 1997 Guidelines, it was always clear that Oftel intended that the first order test would be an important element of any assessment of the reasonableness of charges. It may be helpful to consider the historical context to the Guidelines, as I believe that this provides clarity over the intended role and significance of the first order test of DLRIC and DSAC.

139. In December 1995 Oftel published its first consultation document on the "*Pricing of Telecommunication Services from 1997*" **[BT2/8/ESP3]**.[112] Annex D of this consultation document introduced the concepts of DLRIC floors and DSAC ceilings[113] that, following further significant consultation, went on to become those contained in the 1997 Guidelines and the Guidelines. In Section 5 of the consultation document Oftel provided its explanation why it considered the floors and ceilings to be necessary and the role that

[110] Pigott statement, paragraph 23 **[BT2/8/ESP/8-9]**
[111] For example, see paragraphs 16, 50 to 61 and 92.
[112] Referred to at paragraph 19 of the Pigott statement **[BT2/8/ESP/7]**
[113] As discussed at paragraph 29, the definitions of floors and ceilings were the costs concepts of DLRIC and DSAC although Oftel did not generally use that terminology.

they would play in any investigation. Oftel noted that it did not favour a mechanistic implementation of the floors, but that it would play a very important role, determining where the burden of proof lay:[114]

> "If a charge were set above the floor, the burden of proof would lie with the complainant to show that the charge could be expected to be anti-competitive. If a charge were set below the charge floor, the burden of proof would lie with BT to demonstrate that the charge was not anti-competitive."

140. In Oftel's second consultation published in March 1996[115] similar wording was used to that in the first consultation, but also suggesting that the Director General's prior consent would be required for BT to set a price below the DLRIC floor:[116]

> "Oftel does not, however, favour a mechanistic implementation of floors - the system of floors would apply, subject to a power of the Director General to consent to lower charges. If a charge were set above the floor, the burden of proof would lie with the complainant to show that the charges could be expected to be anti-competitive, unduly discriminatory or unfair. If it wished to set a charge which were below the floor, the burden of proof would lie with BT to demonstrate that the charge would not have these effects."

141. The two consultation documents focussed on cases where charges were below the floor. In the June 1996 Statement[117] Oftel made clear that similar reasoning also applied to the DSAC ceiling:[118]

> "All firms in the economy operate under general competition laws and may be subject to investigation about their pricing. For the network controls Oftel proposes to adopt specific floors and ceilings to give a greater degree of transparency and certainty to BT and interconnecting operators. The range given by floors and ceilings will determine the burden of proof in an investigation. If a charge were to lie within the floor and ceiling, the burden of proof would lie with the complainant to show that the

[114] December 1995 consultation, paragraph 5.49 **[BT2/8/ESP3]**
[115] Referred to at paragraph 20 of the Pigott statement **[BT2/8/ESP/7]**
[116] March 1996 consultation, paragraph 5.66 **[BT2/8/ESP4]**
[117] This document set out Oftel's final proposals on retail price control and fair trading, but a further consultation on Oftel's informal proposals on network charge controls, including floors and ceilings.
[118] June 1996 statement, paragraph 4.62 **[DF1/2/38]**

charge could be expected to be anti-competitive, unduly discriminatory or unfair. If a charge were to be set below the floor or above the ceiling, the burden of proof would lie with BT to demonstrate that the charge would not have these effects."

142. The focus of the two consultation documents on the role of harm in investigations of charges below the floor (rather than above the ceiling) is consistent with the view that low charges below the floor are more likely to be benign than high charges above the ceiling. A low price that is not anti-competitive (eg that does not give rise to economic harm) will benefit consumers and tend to enhance economic efficiency by bringing price closer to marginal cost. In contrast, it is unclear there is generally any similar benefit from a price which is higher than DSAC.

143. In December 1996 Oftel published its first consultation on the "*Network Charges from 1997*". This consultation followed the three documents on "*Pricing of Telecommunication Services from 1997*" **[DF1/3]** and was part of the further consultation process that led to the publication of the July 1997 Network Charges statement and the 1997 Guidelines. In this consultation document Oftel moved away from the idea that the DLRIC floors and DSAC ceiling would determine the burden of proof and that charges outside of the floors and ceilings would require the Director General's prior consent.[119] It nevertheless reiterated the importance of the first order test in any investigation:[120]

"Oftel proposes that there will thus be no formal requirement for BT to seek Oftel's prior consent to any changes. BT will itself have to make a judgement about the level of charges it intends to set and how it would justify them if challenged. It will have to publish details of underlying component costs and routing factors when it makes changes to charges. **The analysis of the relationship between the proposed charge and the floors and ceilings will be a very important element in any assessments made by Oftel: particularly as a first stage in the assessment.** However, this relationship will not be the sole determinant: Oftel will take into consideration all other relevant factors in making its final decision in any particular case whether a charge is anticompetitive. Oftel recognises the absence of prior consent is an important change from the earlier proposals and seeks operators' views on the new

[119] December 1996 consultation, paragraph 4.6 **[DF1/3/26]**
[120] December 1996 consultation, paragraph 4.7, emphasis added **[DF1/3/26]**

approach. There will, however, be no change in the analysis Oftel will undertake of complaints about charges."

144. This important role was reiterated in the subsequent May 1997 second consultation document:[121]

> "The key question is the *effect* of the charge - floors and ceilings are useful yardsticks, since charges below the floor might typically be expected to be anti-competitive and charges above the ceiling usually excessive, but circumstances may exist in which a charge below the floor is beneficial to customers and has no adverse effect on the competitive process, or a charge above the ceiling may be justified."

145. In the July 1997 "*Network Charges from 1997*" statement Oftel continued to refer to floors and ceilings: "A first order test will be whether the charge falls within cost floors and ceilings".[122]

146. In the 1997 Guidelines, published in October 1997, and the Guidelines, published in December 2001, Oftel referred to the role of DLRIC floors and DSAC ceilings as an effective first order test:[123]

> "In investigating complaints about charges, Oftel would not apply the floors and ceilings test mechanistically. Floors and ceilings are an **effective first order test** for the likelihood of anti-competitive or exploitative charging. However, there may be circumstances in which charges set outside the band of floors and ceilings are not abusive, or charges set within the band are abusive. If asked to investigate charges, Oftel will seek to analyse the effect of the charge in the relevant market and will take a view on this based on the individual circumstances of each case."

147. The Pigott statement notes that during the consultation process BT set out its disagreement with Oftel's proposed use of DLRIC and DSAC, and instead argued that

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[121] May 1997 consultation, paragraph 6.28 (emphasis in original) **[BT2/8/ESP5]**

[122] July 1997 statement, Annex A, paragraph 70 **[BT2/8/ESP2]**. The same wording was used by Oftel in the 1997 Guidelines at paragraph 4.12 **[BT3/12.2]**.

[123] Guidelines, paragraph B.2, emphasis added **[BT3/12.2]** (with almost identical wording in paragraph C.2 of the 1997 Guidelines **[BT3/12.1]**). See also the description of the floors and ceilings as "a good first order test as to whether the charge is in fact anti-competitive or excessive" at paragraph 4.28 of the 1997 Guidelines, reported at paragraph 86.

Oftel should use LRIC, SAC and combinatorial tests.[124] However, Oftel took a different view. The 1997 Guidelines and the Guidelines re-iterated the role of DLRIC floors and DSAC ceilings (as described above), and specified further requirements for evidence on SAC and combinatorial tests:[125]

> "If estimates of the incremental and stand-alone costs of services were produced using a generally accepted robust methodology, Oftel would take such evidence into account in investigating complaints about charges. However, to establish such a methodology would require a substantial amount of work beyond that carried out so far."

148. I note that the Pigott statement fails to refer to these further requirements, despite their obvious relevance to the Disputes and their prominence in Ofcom's assessment of BT's evidence on SAC and a sub-set of combinatorial tests in the Determination.[126]

149. In my view, consideration of the historical context shows that, while the exact significance of the first order test of DLRIC and DSAC evolved in the build-up to the publication of 1997 Guidelines across the various consultations and statements, Oftel was consistent throughout that it would play an important role in an investigation of charges.

150. Furthermore, as explained in the Determination, BT's own accounting documents published over the period of the Disputes suggest that, contrary to the assertions in the Pigott statement, BT understood the importance placed on the floors and ceilings:[127]

> "Complex combinatorial tests are avoided through the use of DSACs, which **reduce pricing freedom by lowering the maximum price that can be charged**. This results in ceilings for individual components that are below their actual SACs."

151. I also note that the disagreement between Oftel and BT in the consultation process leading up to the 1997 Guidelines (about the role of the DSAC first order test and the conditions under which evidence on SAC and combinatorial tests would be taken into

[124] Pigott statement, paragraphs 46-47 **[BT2/8/ESP/18]**
[125] Guidelines, paragraph B.19 **[BT3/12.2]**. I discuss the context for these requirements further at paragraph 321.
[126] Determination, paragraph 7.92 and the subsequent discussion **[BT1/3/123]**
[127] Section 5.3.5 of BT's 2008 Primary Accounting Documents **[DF3/13/13]**, quoted at Determination, paragraph 5.101; emphasis added **[BT1/3/67]**

account) is mirrored in a similar disagreement in the context of the Disputes and this Appeal. Oftel disagreed with BT in 1997, as reflected in the 1997 Guidelines. Similarly, Ofcom disagreed with BT in the Disputes, for the reasons set out in detail in the Determination. For example, Ofcom concluded that BT's evidence on SAC and a sub-set of combinatorial tests failed to satisfy the requirements set out in the Guidelines, since it was neither generally accepted nor robust.

Trunk services are not components

152. The Pigott statement details the distinction between components and services, and that the DLRIC floors and DSAC ceilings apply to services, rather than components. These points are not in dispute.

153. However, I note that BT's NOA seeks to argue that 2Mbit/s trunk segments are not services in their own right but instead components.[128] It refers to the Pigott statement[129] to support its argument that Ofcom incorrectly focussed its comparison of prices and costs on 2Mbit/s trunk segments, as the floors and ceilings apply to services (not components). In the paragraphs below, and for the avoidance of doubt, I therefore explain why, in my view, the Determination was correct to apply the first order test of DSAC to 2Mbit/s trunk segments since they are indeed services, not components.

154. As the Pigott statement notes[130] components can be thought of as the network elements that must be combined to produce services. Therefore components are a more granular level of disaggregation than services. The same is true for BT's interconnection voice services for which the combination of components in each service is fixed by way of "usage" or "routing" factors.[131]

155. BT seeks to argue that 2Mbit/s trunk segments are not a service.[132] Rather, BT claims that as a 2Mbit/s trunk segment is only sold in conjunction with a terminating segment to form a PPC circuit, it is this circuit that is the "service actually provided".[133]

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[128] For example, NOA, paragraphs 96 and 98 **[BT1/1.1/39-40]**
[129] NOA, paragraph 131 **[BT1/1.1/52-54]**
[130] Pigott statement, paragraph 19 **[BT2/8/ESP/7]**
[131] eg this is explained in paragraph C.5 of the 1997 Guidelines **[BT3/12.1]**: "the use of components in interconnection services is reflected in routing factors".
[132] BT's arguments in this regard are supported by Mr Morden's witness statement.
[133] See page 40 of the NOA

156. I disagree. For the reasons set out below, it is clear that 2Mbit/s trunk segments are services in their own right. The first order test of floors and ceilings therefore applies to 2Mbit/s trunk services on their own and not aggregated with terminating segments.

157. First, as noted above, components are combined in fixed proportions (the usage or routing factors) to form services. However, trunk segments are not purchased in fixed proportions with other services, such as terminating segments. One reason is that CPs can (and do) purchase trunk segments from BT either with or without terminating segments. In addition, even where a CP chooses to purchase both a trunk segment and a terminating segment from BT, the proportions in which they are purchased may differ. To use the example in the Determination, a circuit that connects an office in Glasgow to one in London will have a longer trunk segment than a circuit that connects an office in Glasgow to one in Edinburgh.[134] As trunk charges are a per kilometre charge, the level of the trunk charge affects the overall circuit charge that is paid in either case.

158. Second, more granular components are combined in fixed proportions to form 2Mbit/s trunk segments. BT's Current Cost Financial Statements show that 2Mbit/s trunk segments (or as BT refers to them, "Partial and Private circuits 2Mbit/s – trunk") are formed from the following three components:[135]

a. PC rental 2Mbit link per km trunk
b. SG&A private circuits
c. SG&A partial private circuits

159. Therefore, it is these three more granular elements that are the components, and 2Mbit/s trunk segment that is the service.[136]

160. Third, as I have explained in paragraph 15.a above, 2Mbit/s trunk services are analogous to the "Local to Tandem Conveyance" service. The Pigott statement uses this

[134] Determination, paragraph 4.102 **[BT1/3/42]**
[135] The Current Cost Financial Statements contain BT's regulatory financial statements ("**RFS**") **[DF3/10]**. For the 2006 RFS (relating to 2005/6), see page 135. For BT's RFS in other years relevant to the Disputes, see page 80 for 2007, page 81 for 2008, and page 110 for 2009. The RFS for 2005 show the three components on page 122 (but not the separate routing factors for trunk segments at each bandwidth with their respective costs).
[136] The first of the three components (ie PC rental 2Mbit link per km trunk) accounts for the majority of the cost of the 2Mbit/s trunk service. The other two components relating to SG&A (ie Selling, General and Administrative expenses, referring to certain of BT's overhead costs) account for between 5% and 13% of the cost (on an FAC basis), depending on the year. For the avoidance of doubt, the cost analysis in the Determination relates to the 2Mbit/s trunk service, including all three of these components.

very service to explain the distinction between services and components.[137] Like 2Mbit/s trunk services, Local to Tandem Conveyance is comprised of more granular components which are combined in fixed proportions using routing factors.[138] Another similarity is that Local to Tandem Conveyance is never bought on its own from BT, but only in combination with the Local Exchange Segment service (in this respect, corresponding to terminating segments); but Local Exchange Segment can be and is purchased from BT either with or without Local to Tandem Conveyance (corresponding to terminating and trunk segments respectively).

161. Fourth, the distinct charges levied for 2Mbit/s trunk segments are economically meaningful in their own right. CPs can (and do) self-supply their own trunk circuits to produce retail leased lines. Therefore, when it receives an order from a retail customer, the CP has a choice whether to purchase a wholesale trunk segment from BT or to self-supply the segment itself (or to purchase it from another CP). This choice is affected by the level of BT's trunk segment charges. As noted above, even where the CP purchases both a trunk and a terminating segment from BT, they are not bought in fixed proportions. Therefore, the level of the trunk charge affects the outcome at both the wholesale level for CPs and the downstream retail level for consumers (as discussed in the analysis of economic harm in the Determination).[139] Given this economic significance, the appropriate level of aggregation at which to consider charges is at the level of 2Mbit/s trunk segment service.

162. Fifth, BT's arguments are inconsistent with Ofcom's (and previously Oftel's) market analysis and distinct regulation applied to trunk segments. In the 2004 LLMR Ofcom defined a separate market for "Wholesale Trunk Segments". Services were delineated by differing bandwidths (of which 2Mbit/s is one). This reflects the standard approach to market definition and analysis, in which markets consist of individual products and services (not components). The cost orientation obligation was then imposed on "all services within this market".[140, 141]

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[137] Pigott statement, paragraph 39 **[BT2/8/ESP/14]**

[138] For example, see page 109 in the RFS for 2009 (in which the service is referred to as "Wholesale local-tandem conveyance segment") **[DF3/10/24a]**.

[139] Determination, paragraphs 4.97-4.104 **[BT1/3/41-42]**

[140] 2004 LLMR, paragraph 8.49 **[BT3/12.12]**

[141] BT argues in paragraph 113 of the NOA that: "Ofcom does not focus on the market it actually defined in 2004 LLMR Statement (namely the trunk market) but instead focuses on the various separate components within that market. For example…Ofcom focuses, inter alia, on separate components: 2 Mbit/s trunk, 45 Mbit/s

163. Sixth, BT's characterisation of 2Mbit/s trunk segments as components is at odds with its own publications, which recognise that they are services, not components. Relevant publications include:

- *BT Wholesale Catalogue, Current Cost Financial Statements* - This annual publication sets out all the services offered by BT Wholesale. Since the 2006 version, the 2Mbit/s trunk service has been separately listed as an individual service.[142] The 2005 version did not separately list each trunk service at different bandwidths (eg 2Mbit/s), but the document refers to "trunk services".
- *BT's RFS* - This annual document clearly treats 2Mbit/s trunk as a separate service. For example, in the 2007, 2008 and 2009 RFS the internal and external 2Mbit/s trunk segment entries appear directly under the heading "Service".[143]
- *BT's response to Ofcom's Draft Determination*, dated 5 June 2009 – In its response to Ofcom's Draft Determination BT referred repeatedly to "2 Mbit/s PPC trunk services".[144]

trunk and 155 Mbit/s trunk." This argument is incorrect: first, because trunk segments at 2Mbit/s and other bandwidths are services, not components (as explained above); second, because the inclusion of several services in the same market does not mean that their relationship to costs should only be considered in aggregate (especially when each service has a distinct price and cost); and third, because Ofcom's approach in the Determination both follows economic logic and is consistent with the obligation for "each and every charge" in the wholesale trunk segments market to be cost orientated.

[142] See page 69 of the 2006 version **[DF3/8]**, page 82 of the 2007 version, page 90 of the 2008 version and page 90 of the 2009 version **[DF2/12]**.

[143] See page 59 of the 2007 RFS, page 60 of the 2008 RFS, and page 70 of the 2009 RFS. The 2005 and 2006 RFSs refer to "trunk services" on page 32 of each document; page 123 of the 2005 RFS also refers to "Wholesale Trunk Segment Services" **[DF3/10]**.

[144] See pages 3, 4, 5, 9, etc **[BT1/5.1]**.

c) Response to Other Points in the Yarrow/Decker Report

164. In this section I address some other points in the Yarrow/Decker report, generally following the order in which they appear in that document. In each case, I first summarise the comments in the Yarrow/Decker report in the paragraphs identified and then I present my response.[145]

Allowed recovery of fixed and common costs

165. The Yarrow/Decker report asserts that DSAC prevents the charging of prices that would enable the recovery of fixed and common costs.[146] The line of argument in the report to support this assertion is that:

a. SAC at best allows a normal rate of return on the firm's activities as a whole, but this is too tight because it precludes the earning of super-normal returns which are required if dynamic incentives are to be effective.[147]
b. DSAC leads to tighter ceilings on sub-sets of prices than SAC and hence can have an even more severe effect.[148]

166. This assertion is plainly incorrect and is contradicted by the evidence. It appears to be based on a fundamental misunderstanding of DSAC and combinatorial tests:

a. It is the more aggregated combinatorial SAC tests that would preclude the firm from earning more than a normal rate of return (in the limit, the combinatorial test for of all of the firm's services). This was one of the undesirable features of combinatorial tests that Ofcom pointed out in the Determination, namely the risk of rate of return regulation.[149]

[145] Where I do not respond to points in the Yarrow/Decker report, this should not be taken as indicating my agreement.
[146] Yarrow/Decker report, paragraph 50 **[BT2/9/17]**
[147] Yarrow/Decker report, paragraph 49 **[BT2/9/17]**
[148] Yarrow/Decker report, paragraph 50 **[BT2/9/17]**
[149] Determination, paragraph 5.56(v)(e) **[BT1/3/55]**

b. DSAC, however, *avoids* this problem, as discussed above (see paragraph 46). This is because it does not apply these aggregated combinatorial tests, but instead provides a test at the level of individual services.[150]

167. In fact, as I have set out above, DSAC allowed BT rates of return on 2Mbit/s trunk services substantially above the normal rate of return (see Table 3), thereby providing the super-normal returns that the Yarrow/Decker report suggests are desirable.

168. In this respect, therefore, DSAC provides a less severe test and allows much greater latitude in pricing than the more aggregated combinatorial SAC tests. Not only is this point ignored by the Yarrow/Decker report, the truth is in fact the opposite of the assertion in that report.[151]

169. The Yarrow/Decker report claims that DSAC is based on equi-proportionate, LRIC-based allocations of a particular pot of fixed and common costs. It is suggested that DSAC should not be considered appropriate, because it is not usual in conditions of multi-product competition for prices to be set on the basis of equi-proportionate mark-ups above marginal costs. The report also claims that it is manifestly inappropriate for price ceilings for two products to be proportional to their LRICs when they are sold in different conditions of demand and supply.[152]

170. First, the implication in the Yarrow/Decker report seems to be that DSAC is restrictive on the sets of prices that the firm can charge and only allows for the pot of common costs to be recovered. It was pointed out in the Determination that such a view is incorrect:[153]

> "BT also claimed in its Response that by focussing on DSAC, Ofcom is implying that this is the only appropriate mark-up of common costs when in fact the SMP obligation entitles BT to make "*an appropriate*" mark-up to recover common costs. However, BT is incorrect to suggest that the DSAC approach only permits one specific pattern

[150] Specifically, for PPC services, DSAC provides tests for individual services that reflect the combinatorial SAC of the broad Core increment. But the DSAC approach does not require that prices are below combinatorial SACs at higher levels of aggregation, such as across two or more broad increments.
[151] DSAC, therefore, provides a less stringent test than more aggregated SAC combinatorial tests (such as, in the limit, for the combination of all of the firm's services); but, as set out earlier in this statement (eg paragraphs 32 to 34), it provides a more stringent test than less aggregated combinatorial tests (such as, in the limit, the individual service SAC).
[152] Yarrow/Decker report, paragraph 58 **[BT2/9/19-20]**
[153] Determination, paragraph 5.67 **[BT1/3/59]**

of common cost recovery. In fact, it allows for a very wide range of possible sets of mark-ups. The sum of all of the DSACs exceeds BT's total costs (unlike FAC). Where FAC is used as the cost basis, charges below FAC must be offset by charges of an equal magnitude above FAC in order that incurred costs are fully (but not overly) recovered. This is not true for DSAC, where charges for services can be below DSAC and still allow for full cost recovery. BT could therefore allocate common costs in a myriad of different ways and still price its services in accordance with DSACs."

171. Second, it is possible that the Yarrow/Decker report reflects a confusion between DSAC and FAC. Prices set at FAC would at most allow the firm to recover its common costs. But, as the evidence set out above clearly shows (see Tables 1, 2 and 3), the DSAC test applied to 2Mbit/s trunk services allowed BT to set prices well in excess of the levels that would just permit common cost recovery and to earn rates of return substantially greater than its cost of capital.

172. Third, as to differing demand and supply conditions between products, I agree that such conditions are different as between trunk and terminating segments, which is why it is appropriate for their distinct prices to be assessed separately.

173. Fourth, whilst welfare-optimal prices would reflect differences in demand and supply conditions between different products (see footnote 9 above), it is far from clear that the price ceilings should do so. As the Yarrow/Decker report elsewhere notes, this is one of the reasons for allowing the firm a degree of flexibility in choosing its structure of prices. For services within price caps, such as terminating segments, BT chooses prices subject to two constraints: the price cap which constrains the average price of services in the basket; and cost orientation, for which DLRIC and DSAC provide a first order test. In the period of the Disputes, trunk segments were subject only to the latter constraint (subsequently it was decided in the 2008 Business Connectivity Market Review ("**2008 BCMR**") that they should also be included in price caps). The latitude in the level and structure of pricing provided by this regulation enables BT a (bounded) degree of pricing flexibility. The difficulties for the regulator in estimating welfare-optimal prices suggest that it is often appropriate for the regulation to specify limits on pricing flexibility based only on cost (or supply-side conditions). In such an approach, the price ceilings deliberately do not seek to reflect demand conditions and delegate to the regulated firm

the choice of prices within these limits. In my view, therefore, it is entirely reasonable for price ceilings to reflect only cost and not demand conditions.

Market evidence

174. The Yarrow/Decker report argues that market evidence should be favoured over accounting evidence. The market evidence in this case is the lack of market entry in the period into trunk services and international benchmarking.[154] The argument in the Yarrow/Decker report is that there is no evidence of the existence of barriers to entry[155] and that an obvious hypothesis is that the deviation of trunk charges from trunk DSACs is nothing more than an artefact of the accounting and an unduly low cost benchmark.[156]

175. If BT did not have market power in the services in question, then the lack of market entry might provide relevant evidence. However, as established in both of the market reviews that 'book-end' the period, the 2004 LLMR and the 2008 BCMR, BT had Significant Market Power in trunk services, in part because of the existence of barriers to entry and growth.[157] The contention in the Yarrow/Decker report that there is no such evidence ignores these market reviews.[158]

176. In such circumstances, the lack of market entry is more likely simply to indicate the exploitation of market power by BT. Certainly in these circumstances it would, in my view, be wrong to conclude that the absence of entry provided evidence of the absence of economic harm. I note, for example, that the OFT's draft competition law guidelines on Assessment of Conduct state that: "Concern about excessive prices will be more likely where price levels are persistently high without stimulating new entry or innovation".[159]

177. As to the suggestion that DSAC is an unduly low cost benchmark, this seems to me to be implausible given the evidence on the magnitude by which DSAC exceeds FAC and

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[154] Yarrow/Decker report, paragraph 75 for the lack of entry and 71 for international benchmarking **[BT2/9/24&24]**

[155] Yarrow/Decker report, paragraph 138 **[BT2/9/40]**

[156] Yarrow/Decker report, paragraph 135 **[BT2/9/39]**

[157] See the analysis of SMP in trunk segments in the 2004 LLMR and the 2008 BCMR.

[158] I also note that the 2004 LLMR and the 2008 BCMR are not listed in the "Materials relied upon in preparing this report" on page 51 of the Yarrow/Decker report.

[159] OFT guidelines, paragraph 2.20 **[DF3/6/12]**. A similar point is made in the OFT's *Napp* decision (eg paragraph 232 **[DF4/9/64]**).

LRIC. As set out above, the DSAC of 2Mbit/s trunk segments is not just a little above FAC or LRIC, but exceeds these other cost benchmarks by very substantial amounts: **[ ]** larger than LRIC and about 75%-120% larger than FAC – see paragraph 114 above and Tables 1 and 2.

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178. The Yarrow/Decker report notes the evidence of the lack of entry into trunk services by CPs, which suggested that they had not entered based on an expectation that Ofcom would reduce BT's trunk prices. The Yarrow/Decker report argues that this evidence "only makes sense on the basis of an expectation that prices would be reduced by Ofcom to below the entry price". It suggests that such a price would be a regulatory mistake by setting anti-competitive price ceilings.[160]

179. I note that the report fails to provide a clear definition of what it means by the "entry price".[161] There are suggestions that the Yarrow/Decker report considers the entry price to be a price for trunk and terminating segments combined (for example, the reference to "setting PPC prices at a level that precludes the earning of a normal rate of return on capital").[162] This would be an error, since entry and expansion (including 'make or buy' decisions) in the provision of trunk circuits occur independently of the provision of terminating segments and logically depend on the price for trunk segments.

180. However, leaving this possible error to one side, the inference drawn in the report seems to imply that the Yarrow/Decker report is defining the "entry price" as the price below which entry into trunk services is commercially unattractive for the CPs (ie unprofitable). Otherwise, it would not be true to say that the CPs' statements only made sense if they expected Ofcom to reduce prices below the "entry price". In this sense, the argument in the Yarrow/Decker report is therefore no more than a matter of definition. Furthermore, the suggestion that such a price would be a regulatory mistake does not necessarily follow as a matter of economic logic and, in my view, is not supported by the available evidence relevant to the Disputes.

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[160] Yarrow/Decker report, paragraphs 18- 19 **[BT2/9/8]**

[161] Paragraph 22 refers to "a 'top-end' estimate of the competitive price range", but does not explain further. Paragraph 48 refers, in the context of anti-competitive low pricing, to incremental costs and a normal rate of return, which is presumably on a FAC basis (as the rates of return referred to in the Yarrow/Decker report and the Determination are all on this basis). I consider below both incremental costs and FAC. Paragraph 54 suggests that in most practical circumstances, the competitive entry price will tend to lie above a cost-based regulated price, but the report does not provide a full explanation. Since the previous sentence in that paragraph refers to the firm's return on capital, it may be that this is also a reference to FAC.

[162] Yarrow/Decker report, paragraph 18 **[BT2/9/8]**

181. Although not clearly stated, the Yarrow/Decker report may be implying that a trunk price below the "entry price" would also be below BT's costs and would force it into loss. If so, it is also the case that such an implication does not necessarily follow and, in my view, is unlikely in the circumstances of the Disputes.

182. To explain my view, it is important to distinguish in this context between:

a. statically efficient and inefficient entry to the wholesale trunk services market; and
b. the price that would actually attract entry to the wholesale trunk services market, given the existence of barriers to entry which contribute to BT's SMP in this market (which, as explained above, I understand to be the definition of the "entry price" in the Yarrow/Decker report).

183. Statically efficient entry is where the entrant's cost is no higher than the incumbent's incremental cost.[163] If the entrant's cost is higher than the incumbent's incremental cost, then such entry is statically inefficient, because it raises, rather than reduces, the industry's total costs of supplying the services in question. Entry that is inefficient in this sense might nevertheless be desirable, as there can be dynamic gains from competition (eg incentives for cost reductions or benefits to consumers in terms of choice, innovation or lower prices). However, there is a trade-off between static costs and dynamic gains and whether such inefficient entry is desirable or not will depend on the specific circumstances.

184. The price level that deters statically efficient entry in trunk services is, therefore, below the incumbent's incremental costs. In essence, this is the underlying rationale for the specification in the theory of contestability of LRIC as the price floor (and for the definition of the price floor in the Guidelines as DLRIC). Harm to competition in trunk

[163] See, for example, Mitchell and Vogelsang (1991), *Telecommunications Pricing: Theory and Practice*, page 132 **[DF3/2/17]**: "Bypass is efficient or economic (inefficient or uneconomic) if the regulated carrier's incremental cost from providing the service of the customer is higher (lower) than the incremental cost of bypass to the consumer. Inefficient bypass can occur if the regulated carrier charges more than incremental cost of supplying the customer."
Or, OECD (2004), page 29 **[DF3/5/27]**: "In some circumstances, if the monopolist's prices are high enough it may be possible for a firm (or a group of existing customers of the monopolist) to produce a set of services itself rather than purchase the same services as inputs from the monopolist. If there are economies of scale such "new entry" into the market for the essential inputs involves inefficient duplication of the existing assets of the monopolist."

services, as opposed to an effect on competitors, is usually associated with prices below the incumbent's DLRIC or LRIC.[164]

185. However, potential entrants might not find it profitable to enter the trunk market at prices that are significantly above BT's LRIC or DLRIC, especially if their costs exceeded BT's incremental costs of trunk services. For example, as shown in Table 1 above, BT's estimates of LRIC of 2Mbit/s trunk services are significantly below FAC, by about **[ ]** and very much further below DSAC and SAC. This indicates the significance of economies of scale and economies of scope in this market. Potential entrants that do not benefit from economies of scale and scope to the same extent as BT might therefore be deterred from entering the trunk market even at prices well above the statically efficient entry level. In other words, the "entry price" might be well above the statically efficient entry level. This is relevant to the Disputes, because Ofcom concluded in both the 2004 LLMR and the 2008 BCMR that BT was able to benefit from economies and scale and economies of scope in the wholesale trunk segments market to a greater extent than CPs.[165]

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186. Therefore, it does not necessarily follow as a matter of economic logic that a charge set below the "entry price" (as defined in paragraph 182.b above) would be a regulatory mistake. This is because such a price could still be above the level of the incumbent's incremental cost and so the only entry that might be deterred is by (statically) inefficient entrants. Furthermore, in the circumstances of the Disputes, the evidence supports the view that such a situation is relevant, given the finding that CPs benefit from economies of scale and scope to a lesser extent than BT.[166]

187. Similarly, it does not follow as a matter of logic that a charge set below the "entry price" would be below BT's costs. Again, this is because the "entry price" (as defined in paragraph 182.b above) depends on the potential *entrant's* costs, not BT's costs. Furthermore, in the context of the Disputes, the evidence supports the view that BT's trunk costs are lower than those of the potential entrants. In addition, as set out above,

[164] Or other cost standards that are used in other contexts to assess anti-competitively low prices, such as average variable costs or average avoidable costs under the Competition Act.
[165] 2004 LLMR, paragraphs B.146 and B.151 **[DF1/7/30-31]**; and January 2008 BCMR consultation document, paragraphs 7.393 and 7.400 **[DF2/14/127-129]** (the analysis of SMP in the January 2008 document is adopted in the 2008 BCMR Statement at paragraph 7.175 **[DF2/15/82]**).
[166] The further question of the trade-off between static and dynamic efficiency in the context of the Disputes is discussed below at paragraph 215.

trunk prices set at DSAC did not force BT into loss, as they enabled BT to earn a rate of return of about 50%, more than four times larger than its cost of capital (see Table 3).

188. Whilst the Yarrow/Decker report focuses on the effect of trunk prices on entry into the trunk market (as discussed above), I have already explained that an important rationale for the ex ante regulation on BT's prices for trunk segments was to promote competition in downstream markets, such as retail leased lines (see paragraphs 116 to 117 above). Lower trunk prices would be expected to encourage such competition and provide benefits to retail consumers.

189. For these reasons, I do not agree with the suggestion in the Yarrow/Decker report that the only interpretation of the lack of (large scale) entry into trunk services that makes sense is an expectation that Ofcom would make a regulatory mistake or set an anti-competitive price ceiling. I provide a further discussion of the effects of trunk prices on entry and competition at paragraphs 212 to 219 below.

190. The Yarrow/Decker report contends that, although international benchmarking evidence is not necessarily determinative, it can be informative and should not be cursorily dismissed, as in the Determination, on the basis of general differences in country characteristics.[167]

191. First, the reasons in the Determination for not placing weight on the evidence on international benchmarking are summarised at paragraph 59 above. These include specific reasons, such as: the use in BT's evidence of terminating segment prices as a proxy for trunk prices, resulting in a likely overstatement of prices in other countries; and the absence of cost orientation obligations in most of the countries.[168] The Yarrow/Decker report fails to address these specific reasons.

192. Second, the Yarrow/Decker report does not establish that the circumstances in the countries included in BT's international benchmarking evidence are similar and hence that the data is informative for the purpose of the Disputes, ie assessing overcharging on specific services. Especially for such a specific purpose (as opposed to general, high-level comparisons), the evidence would need to be sufficiently precise about the prices

[167] Yarrow/Decker report, paragraphs 71 and 118 **[BT2/9/23&34-35]**

[168] The absence of cost orientation obligations leads to potential unreliability in the price information in BT's international benchmarking evidence – see paragraph 270.

of the particular services under examination in each country; and the situations in the different countries would need to be sufficiently comparable, in particular as regards costs. These are well-known difficulties with international comparisons, which can have substantial implications for the usefulness and interpretation of the analysis.[169] Instead, the Yarrow/Decker report, like the Budd statement, seeks to place the onus on Ofcom to identify and adjust for any differences.[170] However, in my view, since BT submitted the evidence, it should bear the onus of showing that such evidence is of value by being sufficiently relevant and reliable. This is so, especially as BT bears the burden of proof of demonstrating that its charges are cost oriented.[171]

193. The Yarrow/Decker report criticises Ofcom's approach to the international benchmarking data in the Determination, arguing that it is out of line with the approach adopted by the European Commission and European Regulators Group ("**ERG**") to the use of such evidence. The Yarrow/Decker report also notes that Ofcom has itself conducted international price comparisons (eg International Communications Market reports). Overall, the Yarrow/Decker report suggests that the Determination is based on an approach that is different to that which would normally be adopted in telecoms regulation.[172]

194. First, the publications of the European Commission and the ERG, cited in the Yarrow/Decker report, are not decisions in relation to overcharging on specific services and so are not comparable to the Disputes. For example, the European Commission does

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[169] For example, Ofcom considered, but did not rely on, international benchmarking evidence in its 2008 market review as part of its assessment of SMP in retail leased lines (see the discussion in paragraphs 7.69-7.79 of the January 2008 BCMR consultation document **[DF2/14/72-76]**; and note the absence of international benchmarking in the list of considerations supporting the SMP finding in paragraph 7.42 **[DF2/14/66-67]**). At paragraph 7.70 **[DF2/14/72]**, Ofcom noted the difficulties in ensuring a like-for-like comparison:

> "The results of international price comparisons, however, should be interpreted with care. The price of a particular leased line reflects various factors, including not only the intensity of competition in a market but also factors affecting the retail cost base, such as the level of competition in upstream markets, the level at which regulated wholesale charges are set, the prices of other inputs, and the particular tax treatments of the entity supplying the service which could affect effective wholesale input costs. Prices may also vary because of entities' differing approaches to cost recovery or because the services whose prices are being compared are not identical. Finally, in practice (some) incumbents may price their circuits differently with varying, often unpublished, discount structures. Thus, a 'good' performance in an international comparison does not by itself show that a particular country market is more competitive than another."

[170] I respond to the comments in the Budd statement on international benchmarking in paragraphs 266 to 272.

[171] See paragraphs 127-128 and 217-218 of the Defence.

[172] Yarrow/Decker report, paragraphs 119-122 **[BT2/9/34-35]**. The Budd statement makes similar criticisms (see paragraphs 37-40).

not draw any conclusions from the data contained in the 14th Implementation Report that the Yarrow/Decker report refers to. Furthermore, the number of countries in that sample is far greater (29) than that in the Deloitte Report used in BT's evidence (10).[173]

195. Second, even where the European Commission has previously used benchmarked prices in the context of PPCs, it has recognised that specific cost analysis should take precedence: "Best current practice prices can be used to determine prices in cases where sufficiently reliable and detailed cost data has not been made available…".[174]

196. Third, whilst Ofcom publishes international price comparisons in its International Communications Market reports, it has not relied on such data to reach conclusions on overcharging or to assess compliance with specific ex ante obligations, as in the Disputes. I note that the Yarrow/Decker report fails to provide any examples to the contrary.

197. Fourth, in the Determination, Ofcom identified weaknesses in the international benchmarking evidence. In such circumstances, I would expect the approach normally adopted in telecoms regulation to take account of such weaknesses in considering whether this evidence should overturn more specific, more relevant and more reliable evidence on the costs and prices of the services under examination. In my view, Ofcom's analysis was in line with such an approach.

Market definition and economic assessment

198. The Yarrow/Decker report alleges that Ofcom's decision relies on two, mutually contradictory lines of economic reasoning:[175]

a. Narrow markets for products can be defined and information beyond those markets is not required to assess cost orientation; and
b. The price structures of multi-product firms can only be assessed taking account of demand and cost structures for the whole set of products, which underpins Ofcom's thinking on price ceilings and combinatorial tests.

[173] Of these 10 countries, actual trunk prices were not available in at least four countries.
[174] Possible Recommendation on the provision of Leased Lines: Part 2 – Pricing aspects of wholesale leased line part circuits data gathering, Communications Committee Working Document, COCOM04-35annexREV1 **[DF3/7]**
[175] Yarrow/Decker report, paragraph 90 **[BT2/9/28]**

199. I have explained above Ofcom's rationale for the DSAC approach (see paragraphs 18 to 38 above). This does not rely on the lines of economic reasoning alleged in the Yarrow/Decker report. First, it is incorrect to suggest that Ofcom assessed trunk prices by only considering information on trunk services. The inclusion of allocations of common costs, which are shared between trunk and all of BT's other services, are an integral and essential feature of DSACs. Second, Ofcom's DSAC approach knowingly involves a departure from full-blown combinatorial tests, because of the many difficulties involved, which DSAC avoids, with the effect of applying a more stringent test (compared to the SAC/combinatorial tests at lower levels of aggregation).

DSAC

200. The Yarrow/Decker report alleges that the equi-proportionate allocation of fixed and common costs in DSAC is contrary to the principles underlying Oftel's 2001 PPC Direction (with which the report agrees), which recognised that different mark-ups over LRICs may be appropriate to reflect different economic conditions.[176]

201. This allegation is incorrect and appears to reflect a confusion in the Yarrow/Decker report between LRIC plus an equi-proportionate mark-up for common costs ("**LRIC+**") and DSAC. DSAC is substantially higher than LRIC+ (for which FAC is usually a reasonable proxy) and so allows for much greater pricing flexibility.

202. Furthermore, the obligations imposed in the 2004 LLMR adopted an approach entirely consistent with the principles underlying Oftel's 2001 PPC Direction. BT was found to have SMP in both trunk and terminating segments, but the analysis at that time was that BT's SMP in terminating segments was more persistent. Ofcom reflected this by imposing tighter constraints on terminating segments, which were subject to both a cost orientation obligation and price caps, the levels of which were set by reference to LRIC+. In contrast, less tight constraints were imposed on trunk segments, which were subject only to a cost orientation obligation, but not price caps. The Determination used a different and much higher cost measure as the first order test to assess overcharging for trunk segments (ie DSAC), compared to the lower measure of cost used to set terminating segment prices (ie FAC or LRIC+).

[176] Yarrow/Decker report, paragraph 100 **[BT2/9/30]**

203. The Yarrow/Decker report alleges that it is erroneous as a matter of logic and economic reasoning to estimate the costs of a stand-alone provider at a particular level of analysis/aggregation (the core network), but then not to compare the costs to the charges at that same level of aggregation.[177]

204. This is a false characterisation of Ofcom's approach. As I explained above, it is inherent to the derivation of DSAC that, if all prices are below DSAC, then the combinatorial test for the broad increment (in the case of trunk and terminating segments, the Core increment) is passed (see paragraph 26 above).

205. The Yarrow/Decker report notes that DSAC and SAC tests, including combinatorial tests, are not synonymous.[178]

206. I agree. As I explained above, Ofcom's DSAC approach involves adopting an alternative to SAC/combinatorial tests, which is consciously more stringent (at lower levels of aggregation of combinatorial tests), consistent with the rationale for imposing the cost orientation in the 2004 LLMR.

Economic harm

207. The Yarrow/Decker report disagrees with Ofcom's view that there is no causal link between the charges for trunk and terminating segments on the basis that there is an obvious causal connection between the costs of trunk and terminating segments.[179]

208. The Yarrow/Decker report appears to confuse costs and prices. Ofcom recognised that trunk and terminating segments shared common costs. But Ofcom's point was that a lower *price* for terminating segments under their price caps was not causally related to a higher price for trunk services, which would exploit BT's market power in the trunk segments market.

209. The Yarrow/Decker report argues that Ofcom ignored the effect of high prices on BT's downstream operations.[180]

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[177] Yarrow/Decker report, paragraph 102 **[BT2/9/31]**
[178] Yarrow/Decker report, paragraph 107 **[BT2/9/32]**
[179] Yarrow/Decker report, paragraph 128 **[BT2/9/37]**
[180] Yarrow/Decker report, paragraphs 129-130 **[BT2/9/37-38]**

210. In my view, this argument makes no economic sense. For transactions within BT there is simply a transfer of paper funds between one part of BT (downstream operations) and the other (wholesale sales of trunk segments). BT is vertically integrated and so its incentives are to take account of end-to-end costs in its decision-making. Hence, high trunk prices do not impose any harm on BT's own downstream operations.

211. This same point is made, for example, in Baumol (1997):[181]

> "a [transfer] price may be specified in the firm's accounting records, but that price is really an artificial and arbitrary number…a rise in the accounting figure that purports to be the inter-division bottleneck-input price merely moves money out of one pocket of the bottleneck-owner firm and transfers it to another of its pockets"

212. The Yarrow/Decker report alleges that Ofcom draws an abstract and opaque distinction between efficient and inefficient investment and ignores the fact that one of the purposes of encouraging infrastructure-based competition is to use the access price to encourage entry by firms, referring to paragraph 7.67 in the Determination.[182] It is alleged that this "indicate[s] a distinct lack of commitment to the common [EU] policy" of encouraging infrastructure based competition in telecoms markets.

213. First, I have explained above the well-established distinction between efficient and inefficient investment (see paragraphs 182 to 184 above). It has been part of Ofcom's analysis in many contexts, for example, the principles adopted at the conclusion of Ofcom's Strategic Review of Telecommunications in 2005. The first of these states that Ofcom's policy is to "promote competition at the deepest level of infrastructure where it will be efficient and sustainable",[183] and Ofcom explained further that:[184]

> "The second fundamental question for the review was: where can effective and sustainable competition be achieved in the UK telecoms market? This is an important question, because if regulation seeks to promote competition in parts of the network where it is either inefficient or unsustainable, there is a danger that any competition

[181] William Baumol, *Contestable Markets; Applications and their Theoretical Foundation* (1997), page 23 **[BT3/13.1]**
[182] Yarrow/Decker report, paragraph 131 **[BT2/9/38]**
[183] Final statements on the strategic review of telecommunications and undertakings in lieu of a reference under the Enterprise Act 2002, 22 September 2005, paragraph 4.4 **[DF3/11/3]**
[184] Paragraph 4.1 **[DF3/11/3]**

becomes dependent on regulation for its survival, and may also represent a waste of resources. In addition, if some level of competition is sustainable but is insufficient to constitute effective competition, the full benefits of competition to consumers, in terms of lower prices, greater choice and faster innovation, are unlikely to be forthcoming."

214. I therefore consider that the allegation of a lack of commitment to infrastructure-based competition is unfounded. Ofcom's commitment is clear and, in my view, the analysis in the Determination is consistent with the principle set out above.

215. Second, it is a legitimate concern to avoid prices that might encourage inefficient investment. For example, it is not correct that higher trunk prices, allowing greater entry in trunk services, are always to be preferred to lower prices encouraging less entry. Inefficient entry and investment (in the sense of static economic efficiency, as defined above) imposes costs on society. It implies a productively inefficient use of resources by inflating industry costs; and it may encourage unsustainable competition of limited benefit to consumers. But, such entry and investment may also provide benefits through dynamic gains in terms of increased pressure for cost reduction or improved choice, innovation or prices for consumers. Hence, there is trade-off and the appropriate balance to strike depends on the circumstances. One important circumstance is the extent to which the price is above the level that encourages only efficient entry and investment, because the higher the price, generally the greater the risk of disadvantages in terms of inefficient and unsustainable competition compared to the advantages of dynamic benefits. As noted above (eg paragraph 114), prices above DSAC, such as those charged by BT for 2Mbit/s trunk services, are very substantially above this level. This is why Ofcom noted in the Determination that, at prices above DSAC, the margins available to efficient entrants are high and the dynamic benefits are less likely to offset static inefficiency.[185]

216. Third, whilst the regulation of wholesale prices has implications for entry into that wholesale market, this is not its only or primary purpose (as noted at paragraph 116 above). In the 2004 LLMR Ofcom was concerned to protect buyers from overcharging and to promote competition in downstream retail markets, such as retail leased lines.

[185] Determination, paragraph 7.67 **[BT1/3/118]**

This was a key rationale for imposing the cost orientation obligation on BT's prices in the wholesale trunk segments market (see paragraphs 34 and 117 above). In the Determination Ofcom concluded that there was likely to be an adverse effect on retail consumers and such downstream competition from BT's high prices of 2Mbit/s trunk services (see paragraph 54 above).

217. The Yarrow/Decker report contends that in Ofcom's analysis the potential impact of higher prices on consumers is absent with the focus limited simply to the impact on BT's wholesale customers.[186]

218. On the contrary, the first source of economic harm considered by Ofcom in the Determination was the impact on consumers (reducing the overall demand for retail leased lines through increasing retail prices).[187]

219. The impact on competition, via the effect on BT's wholesale customers, is also relevant. As discussed above, there are benefits of lower trunk charges in promoting downstream competition. Higher trunk prices are likely to reduce the extent of competition and entry into retail leased line markets, by operators who rely on BT for wholesale trunk services, to the ultimate detriment of consumers.

Other approaches to assess cost orientation

220. The Yarrow/Decker report suggests alternative approaches that it claims Ofcom could and should have undertaken:[188]

a. Price and DSAC across relevant sub-sets of products, certainly including trunk and terminating segments;
b. Alternative cost allocators such as outputs or revenues;
c. Stand-alone combinatorial test on subsets of relevant products; and
d. FAC of PPC services as a whole.

221. The reasons that Ofcom rejected the first and fourth suggestions of aggregating trunk and terminating segments are summarised in the Determination at paragraph 4.19 and discussed above. The attempts at various places in the Yarrow/Decker report to address

[186] Yarrow/Decker report, paragraph 139 **[BT2/9/40]**
[187] Determination, paragraph 7.36i) and the subsequent discussion **[BT1/3/111]**
[188] Yarrow/Decker report, paragraphs 142-146 **[BT2/9/41-42]**

some of these points, in my view, fail to address the fundamental point that the distinct price of trunk services is economically meaningful for investment decisions, competition and consumer prices (eg see paragraph 14 above and the subsequent discussion). Furthermore, some of Ofcom's points are not addressed at all in the Yarrow/Decker report, such as the adverse effect on charge control incentives.

222. As regards alternative cost allocators, whilst there might have been a case for considering alternatives when the methodology was being consulted on and agreed in 1997, or perhaps when the Guidelines were reissued in 2001, regulatory certainty would suggest retaining as important results the cost allocators used in deriving DSAC. But, in any case I note that BT's prices of 2Mbit/s trunk services exceeded DSAC by 81% on average in the years of overcharging, 2005/6-2008/9, and exceeded FAC by 234% on average – see Table 2 above. Such large disparities suggest that Ofcom's conclusion on overcharging is robust to alternative cost allocators, even if they were justified.

223. The reasons that Ofcom rejected the third suggestion of combinatorial tests are summarised in the Determination at paragraph 5.56 and discussed above and below.

224. The Yarrow/Decker report contends that it would only have been necessary to perform the following SAC and combinatorial tests:[189]

a. 2Mbit/s trunk services;
b. All trunk services combined; and
c. Trunk and terminating services combined.

225. I note that the Yarrow/Decker report fails to explain the reasons why these three SAC/combinatorial tests are the only necessary tests.

226. In my view, these three tests are plainly inadequate. As I have explained above, because of the linkages between the costs of trunk and other services (which the Yarrow/Decker report elsewhere emphasises), the most relevant criterion to determine the important combinatorial tests is the services with which 2Mbit/s trunk segments share the largest proportion of common costs. Other trunk services and terminating segments account for a relatively small proportion of the common costs (**[ ]** or less of the SAC of 2Mbit/s

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[189] Yarrow/Decker report, paragraph 152 **[BT2/9/43]**

trunk services, according to BT's own estimates). In contrast, the great majority of the common costs (**[ ]** or more of the SAC of 2Mbit/s trunk services) are shared with services in other increments (ie not the Core increment). These important combinatorial tests include services other than trunk and terminating segments, yet the Yarrow/Decker report ignores these tests.

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227. BT's NOA refers to the contention in the Yarrow/Decker report that the only combinatorial tests that need to be conducted are the three tests set out in paragraph 224 above.[190] The context in the NOA is a quotation from a book co-authored by William Baumol.[191] The quotation puts forward two arguments:

a. There are straightforward ways to reduce the complications of the combinatorial test problem, eg by aggregating the firm's services into a group of products sharing common facilities.[192]
b. The complaining party can and should be asked to identify the combinations for which they believe the ceiling is violated.

228. The first argument (of aggregating into groups of products) does not assist BT because, whilst I accept that in practice it may not be necessary to conduct every single combinatorial test, the most important combinatorial tests should clearly be conducted.[193] That is, the combinatorial tests should be conducted for the groups of products that share the most common facilities. However, as explained above, the three tests referred to in the Yarrow/Decker report fail to do so, because the most important common facilities are between 2Mbit/s trunk services and non-PPC services (outside of the Core increment).[194]

229. I note that the second argument (of asking the complaining party to identify the combinations to be tested) is proposed in a context in which the firm is free to set prices unless they are shown to violate SAC or combinatorial tests.[195] However, the relevant

[190] NOA, paragraph 158 **[BT1/1.1/64]**
[191] Page 80 in Baumol and Sidak (1994), Toward Competition in Local Telephony, AEI Studies in Telecommunications Deregulation **[DF3/3/7]**, referred to in NOA, paragraph 157
[192] For the avoidance of doubt, paragraph 157 in BT's NOA provides the quotation as "showing common facilities", but in the original it is "sharing common facilities".
[193] See paragraph 42 above.
[194] The same fundamental criticism applies to the other combinatorial tests that BT submitted to Ofcom during the Disputes – see Determination, Table 7.5 **[BT1/3/129-130]**.
[195] eg see pages 86 and 91of Baumol and Sidak (1994) **[DF3/3/13&17]**

context in the Disputes is different. It concerns compliance with an ex ante obligation on BT in the wholesale trunk segments market, for which the burden of proof lies with BT to demonstrate that its charges are cost oriented.[196] In these circumstances, the onus was properly on BT to identify and conduct the appropriate combinatorial tests, if it wished to rely on such evidence in fulfilling its burden to demonstrate compliance with its cost orientation obligation.[197]

230. It is also important to recognise that the number and selection of the combinatorial tests to be conducted was only one of a wide range of concerns with BT's evidence that Ofcom set out in the Determination (as summarised in paragraph 5.56). Other concerns include: service identification, combinations spanning charge-controlled and non charge-controlled services, combinations spanning SMP and competitive markets, the risk of rate of return regulation, equity/distributional implications of flexibility in cost recovery, the fact that BT's methodology is not generally accepted, and the concerns about BT's failure to estimate an efficient SAC, potential overstatement of common costs and the derivation of inclusion percentages.[198]

231. The Yarrow/Decker report suggests that the text of the Determination taken as a whole appears to reflect an acceptance that SAC/combinatorial tests are the most appropriate approach.[199]

232. First, as I have explained above, this is not correct. The DSAC approach represents an alternative to SAC/combinatorial tests and knowingly allows less pricing flexibility, consistent with the more stringent approach under ex ante regulation set out in the 2004 LLMR.

233. Second, as discussed at paragraph 147 above, I note that the Guidelines specify requirements that the use of SAC and combinatorial tests in an investigation would need to satisfy, ie to be produced using a generally accepted robust methodology. The

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[196] Determination, paragraphs 5.78 **[BT1/3/62-63]**; see also paragraphs 127-128 and 217-218 of the Defence.
[197] Determination, paragraphs 5.83 **[BT1/3/63]**
[198] A number of these concerns were also set out in the letter from Martin Hill (Ofcom) to Theresa Brown (BT) of 15 July 2009, which responded to BT's comments in its response to the draft determination that BT was prepared to consider any further combinatorial tests **[BT3/11.2]**.
[199] Yarrow/Decker report, paragraph 157 **[BT2/9/45]**

Guidelines also suggest a degree of scepticism, noting that such a methodology would require substantial additional work.[200]

234. The context to these comments is relevant. The Network Charge Controls, introduced in 1997, made a number of significant changes to the regulation of BT's switched interconnection services:

a. From FAC to LRIC+: a change from the prices of interconnection services being set using FAC (on a historical cost accounting basis, HCA) to the use of LRIC plus an equi-proportionate mark-up for common costs.

b. From annual determinations to charge caps: a change from annual determinations by Oftel of the price of each interconnection service to the use of charge caps, in which BT had a degree of flexibility to set the prices. Such flexibility was subject to compliance with the charge cap itself (constraining the average price of the services in the basket set by reference to LRIC+) and compliance with relevant licence conditions, for which floors and ceilings provided the first order test (constraining the flexibility on the price of any individual service).

235. There had been an extended period of cost modelling over the three years leading up to the introduction of the Network Charge Controls to support and implement these substantial changes to the regulatory regime. This process had involved the development of BT's 'top-down' model, the development of a 'bottom-up' economic-engineering model, and the reconciliation of the results of these two models to derive the 'hybrid' results that Oftel used to set the charge caps.[201] In this process Oftel had defined the increment for both of the cost models as being the broad increment of the whole of conveyance. As well as inland PSTN services, the conveyance increment (now called the Core increment) included inland private circuits. Oftel's analysis of BT's top-down model focused on the characteristics of the model and the results for this broad increment.

236. This structure of the cost model in terms of broad increments is sufficient to establish DLRIC floors and DSAC ceilings. However, it is insufficiently detailed and

[200] Guidelines, paragraph B.19 **[BT3/12.2]**
[201] See, for example, paragraph B.3 of the Guidelines and the reference therein **[BT3/12.2]**.

disaggregated to derive SAC for individual services (and combinatorial tests for groups of services). This is why the Guidelines noted that establishing the methodology to derive SAC and combinatorial tests would require a substantial amount of further work.[202]

237. In the Determination Ofcom applied the test set out in the Guidelines, that the methodology needed to be generally accepted and robust, and found that BT's evidence fell short of the required standard.[203]

238. The Yarrow/Decker report suggests that it is inconsistent for Ofcom to argue that SAC combinatorial tests must be applied across all of BT's products, while at the same time insisting that the DSAC test not be applied across all of BT's products. Both prevent over-recovery of fixed and common costs.[204] The report then states a suspicion that the inconsistency arises because Ofcom has not noted that the 'one strike and you are out' implications of combinatorial tests do not carry over to the DSAC approach, which is biased towards 'false positives'.[205]

239. First, as I have explained above, one of the features of the DSAC approach is that it derives a test at the level of individual services. This is not inconsistent, but reflects the characteristics of the DSAC approach's deviation from full-blown SAC/combinatorial tests.

240. Second, I have also noted above that in fact the DSAC approach is less stringent than combinatorial tests at higher levels of aggregation (see paragraphs 166 to 168 above). This implies that the DSAC approach does not prevent all the ways in which BT might over-recover common costs. On the one hand, this might be argued to provide opportunities for BT to set excessive prices and potentially over-recover costs. But, on the other hand, the DSAC approach has notable advantages, such as avoiding rate of return regulation.

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[202] For example, the Guidelines discuss some of the complications arising from defining the components or the services as increments in paragraphs B.16 to B.18 **[BT3/12.2]**.
[203] Determination, paragraphs 7.92-7.133 **[BT1/3/123-132]**
[204] Yarrow/Decker report, paragraph 160 **[BT2/9/45-46]**
[205] Yarrow/Decker report, paragraph 161 **[BT2/9/46]**

241. Third, as I have explained above, the DSAC approach is knowingly more stringent than combinatorial tests (at lower levels of aggregation). Hence, the suspicion in the Yarrow/Decker report is misplaced.

242. Fourth, I note that it is the Yarrow/Decker report that is seeking to 'mix and match' and fails to be consistent, in suggesting that BT should obtain the greatly increased pricing flexibility of individual service SAC tests (and combinatoral tests at lower levels of aggregation, eg within the same Core increment, which account for a small minority of the relevant common costs), whilst ignoring the more important combinatorial tests that might constrain overcharging and over-recovery of costs.

243. The Yarrow/Decker report contends that Ofcom applies a much higher theoretical standard when considering the results of combinatorial SAC tests that were submitted by BT than when assessing DSAC.[206]

244. First, I have explained above the difficulties of application and interpretation associated with SAC and combinatorial tests and why DSAC avoids these problems (see paragraphs 41 to 47 above). I have also explained the deficiencies of methodology and cost evidence in BT's submission (see paragraph 48 above). I also address some of these points further in the next section in responding to comments in the Budd statement.

245. Second, it is the Guidelines which specified the further requirement for SAC and combinatorial tests to be derived using a generally accepted and robust methodology (see also paragraphs 235 to 236 above). These are the tests that Ofcom applied in the Determination and found that BT's evidence fell short of the required standard.

246. The Yarrow/Decker report suggests that both Ofcom's DSAC assessment and BT's SAC assessments provide relevant information at the level of a screening test of cost orientation (both are imperfect but in different ways). The report suspects that Ofcom's all-or-nothing views springs largely from the mistaken position that comparisons of individual prices with DSACs are, or should be, determinative.[207]

247. The clear reasons why Ofcom adopted the DSAC approach as a first order test and rejected BT's evidence on SAC and a sub-set of combinatorial tests are set out in both

[206] Yarrow/Decker report, paragraph 162 **[BT2/9/46]**
[207] Yarrow/Decker report, paragraph 171 **[BT2/9/48]**

the Determination[208] and my analysis above. The suspicion articulated in the Yarrow/Decker report is (again) incorrect. Ofcom did not apply DSAC as a determinative test. But it did, consistent with the Guidelines, apply it as an important first order test.

[208] See the summary at Determination, paragraph 5.56 **[BT1/3/54-56]**

d) Response to Other Points in the Budd Statement

248. Below I comment on other material points in the Budd statement, following the order in which they appear in that document. In each case, I first summarise the comments in the Budd statement in the paragraphs identified and then I present my response.[209]

Repayments

249. Paragraph 20 and Table 3 in the Budd statement estimate that repayments are equivalent to 42.5% of original revenues of external 2Mbit/s trunk services.

250. In my view, all this shows is that there was a large degree of overcharging by BT.

251. The Budd statement suggests that consumers are unlikely to gain from the refund, so it is a one-off windfall to the Disputing CPs.[210]

252. Ofcom's economic rationale for repayments was about incentives for future conduct – see Determination, paragraphs 8.33-8.34. Such effects will benefit consumers in the longer term.

253. The Budd statement suggests that there is an analogy between repayments and a lump-sum tax, in that neither results in a change in behaviour.[211]

254. This analogy is incorrect. Lump sum taxation does not change behaviour, because the level of the tax is independent of the behaviour of the agent incurring the tax. Such taxes therefore do not distort incentives. In the Disputes, however, the repayment is linked explicitly with BT's pricing behaviour and therefore should affect future behaviour. It is also useful to consider the alternative scenario where Ofcom does not require repayment of historic overcharging by BT. In these circumstances BT has an incentive to overcharge for as long as it is not required to change its prices, as it will retain the gains from overcharging.

[209] Where I do not respond to points in the Budd statement, this should not be taken as indicating my agreement.
[210] Budd statement, paragraph 22 **[BT2/8/RB/10]**
[211] Budd statement, footnote 11 **[BT2/8/RB/10]**

Aggregation and BT's circuit analysis

255. The Budd statement argues that the circuit analysis reflects Ofcom's concern with aggregation that trunk and terminating services are not bought in fixed proportions.[212]

256. First, Ofcom's concern is more fundamental and is not properly addressed by the circuit analysis. That analysis aggregates trunk and terminating segment prices, which obscures the high prices on trunk services (eg above DSAC) by combining them with lower prices on terminating segments (eg well below DSAC – see Determination, Table 7.1). The level of the price of each of trunk and terminating segments is relevant, not just the sum of their prices. Second, the circuit analysis also only considers the circuits that were actually bought. But the overcharging on 2Mbit/s trunk may have deterred some trunk services from being purchased. Third, Ofcom had five other concerns about aggregation (see Determination, paragraph 1.19 and paragraph 15 above), none of which is addressed by the circuit analysis.

257. I also note that there were prices above DSAC, and hence failure of the first order test, even on the basis of the circuit analysis, BT's preferred method of analysis, eg see paragraphs 29 and 30 in the Budd statement.

258. The Budd statement argues that the Disputes are very different from the Termination Rates Disputes ("**TRD**"), because in the case of the TRD the purchasers did not want a more expensive 3G termination service in place of 2G termination, whereas in the Disputes the purchaser can only buy trunk if he also buys a terminating segment.[213]

259. I note that Ofcom did not claim that the situations in the Disputes and in the TRD case were identical. Rather it argued the following:

a. As BT successfully argued in the TRD, it would be wholly illogical to ignore the fact that the services were regulated distinctly.[214]

b. The separation between trunk and terminating segments was even clearer than for mobile termination, because trunk and terminating segments had been defined in separate markets as well as having separate and different regulatory obligations.[215]

[212] Budd statement, paragraph 26 **[BT2/8/RB/11]**
[213] Budd statement, paragraphs 31 to 33 **[BT2/8/RB/13-14]**
[214] Determination, paragraph 4.35 **[BT1/3/28]**

c. The distinctions between the circumstances of mobile termination and PPCs tend to strengthen the case for treating trunk and terminating segments separately. This was because in the TRD the purchasing operator did not have the choice of buying 2G or 3G termination (which was under the control of the supplier) and the service, whether 2G or 3G, was indistinguishable to the purchaser. Whereas, in the Disputes, the purchasing operator has the choice of whether to purchase just terminating segments or both trunk and terminating segments.[216]

260. In my view the arguments in the Budd statement fail to answer Ofcom's points. I agree that there were some differences in the characteristics of the services in the TRD case compared to the Disputes. For example:

a. 2G and 3G termination were technical substitutes whereas trunk and terminating segments are complements.

b. The proportions of 2G and 3G termination were not capable of being influenced by the purchaser, but were chosen by the supplier alone. However, in the Disputes, the proportions of trunk and terminating segments purchased were chosen by the purchasers alone (eg the Disputing CPs) and not by the supplier (BT).

261. In my view, these differences strengthen the economic rationale for separate assessment of trunk and terminating segment prices. This is because, although 2G and 3G termination were technical substitutes, the purchasers were not able to make any substitution decision, because the choice between 2G and 3G was not under their control. Therefore, the separate prices for 2G and 3G termination had no economic function as price signals to the purchasers (unlike the blended average price of 2G/3G termination). In contrast, in the Disputes, the purchasers have a choice to make whether or not to purchase trunk segments and so the separate prices for trunk and terminating segments both play an important price-signalling role.

262. I also note that a similarity between the TRD case and the Disputes is that 2G and 3G termination were not purchased in fixed proportions (since they varied over time) and neither are trunk and terminating segments.

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[215] Determination, paragraph 4.38 **[BT1/3/29]**
[216] Determination, paragraph 4.40 **[BT1/3/29]**

263. In addition, Ofcom's arguments about different market definitions and regulatory treatment of trunk and terminating segments remain relevant and, in my view, unaffected by the arguments in the Budd statement.

264. The Budd statement suggests that it is significant to the comparison between the TRD case and the Disputes that 2G termination was charged above cost over the period whereas terminating segments incurred an economic loss.[217]

265. I disagree. First, I consider that a more significant point of similarity is that both 2G termination and terminating segments were subject to price caps, whereas both of the services under examination, 3G termination and 2Mbit/s trunk segments, were not. Second and in any case, for reasons that I have set out elsewhere in this statement, I do not consider that the prices of terminating segments relative to cost are relevant to the assessment of overcharging for trunk segments, or that trunk prices should be higher to offset BT's underperformance on terminating segments relative to the terminating segment price caps (eg see paragraphs 15, 71, 73 and 81 above).

International benchmarking

266. The Budd statement discusses the use and advantages of evidence on international benchmarking.[218]

267. However, as set out below, in my view the Budd statement fails satisfactorily to address the criticisms in the Determination of BT's international benchmarking evidence (see paragraph 59 above):

268. First, the Budd statement does not establish that the circumstances in the countries included in BT's international benchmarking evidence are similar. Instead it seeks to place the onus on Ofcom to identify and adjust for any differences.[219] However (as noted at paragraph 192 above), since BT submitted the evidence, it should bear the onus of showing that such evidence is of value by being sufficiently comparable, especially as BT bears the burden of proof of demonstrating that its charges are cost oriented.

[217] Budd statement, paragraphs 34 to 36 **[BT2/8/RB/14-15]**
[218] Budd statement, paragraphs 37 to 43 **[BT2/8/RB/15-17]**
[219] Budd statement, paragraph 40: "Rather than Ofcom understanding those differences, applying them to the UK situation and considering any allowances with appropriate circumspection…".

269. Second, the Budd statement does not dispute that the analysis failed to consider cost differences between countries.

270. Third, the Budd statement argues that the absence of obligations for cost-oriented trunk charges in some of the nine countries included in the analysis does not undermine the price comparisons, especially as countries with competitive trunk markets should be particularly informative by providing a competitive price benchmark.[220] However, this fails to address the real issues:

a. In four of the nine countries (Austria, Belgium, Germany and Sweden) the absence of cost orientation obligations flows from the fact that the trunk markets have been deemed competitive. As a result, published pricing information for trunk segment services in these countries is not available or is subject to commercial negotiation. BT's evidence instead uses terminating segment prices as a proxy for trunk prices in three of these countries, Austria, Belgium and Germany - Ofcom's view in the Determination is that such a proxy is likely to overstate trunk prices significantly.[221] For Sweden, BT's evidence uses a published charge that may be materially discounted on the basis of commercial negotiation (and if so, the effective trunk price would be overstated). The consequence is that, despite the suggestion in the Budd statement, BT's evidence for these countries fails to provide a true competitive benchmark or informative data on trunk pricing.

b. In two further countries, trunk services are subject to some regulation but there is no cost orientation obligation (France and Spain).[222] For France, BT's evidence uses the published charges, but these may be subject to material discounting in commercial negotiation. For Spain, trunk segment prices are not published, so BT's evidence again uses terminating segment prices as a proxy.

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[220] Budd statement, paragraph 42 and footnote 31 **[BT2/8/RB/17]**

[221] Determination, paragraph 7.147-7.148 **[BT1/3/134]**. Ofcom considers in the Determination that the proxy is likely to overstate trunk prices, because trunk segments generally have a lower price than similar length terminating segments (when all elements of terminating segment charges are taken into account), eg the price of a 5km trunk segment is about a quarter of the price of a 5km terminating segment. Ofcom, therefore, reports the use of a different proxy, which applies the proportion of trunk to terminating segment charges in BT's prices to terminating segment prices in these countries.

[222] See Tables 16 and 17 in Appendix B of A Review of Proposed Adjustments to BT's PPC Revenues and Costs, A Report for British Telecommunications plc, Deloitte, 8 October 2008 **[BT3/10.1]**

c. Therefore, there is the potential for significant overstatement of the prices in BT's evidence for six of the nine countries used to compare against BT's trunk prices, either because terminating segment prices are used as a proxy or because the prices used may be subject to material discounting in commercial negotiation.

271. Fourth, the Budd statement notes that, as regards the use of terminating segment prices as a proxy for trunk prices in some countries, Ofcom's hypothetical adjustment finds that BT's combined 2Mbit/s trunk and terminating segment charges would be nearer the middle of the range. In addition, the Budd statement notes that the Determination stated at footnote 207 that the data provided appears to suggest that BT's trunk prices are not higher than those in other Member States.[223] However, these points are unconvincing or misleading for the following reasons:

a. As noted above, for four of the nine countries, BT's evidence is not actually comparing trunk prices, but instead is comparing BT's trunk prices against a proxy for the actual information on trunk prices. The accuracy of the proxy (ie using terminating segment prices) is not known or demonstrated by BT and is questioned by Ofcom in the Determination.[224] Given this context, Ofcom's hypothetical adjustment in the Determination suggested that, if different assumptions are made about the proxy for trunk charges, then the implications of the international benchmarking evidence are less clear-cut than BT suggests.[225]

[223] Budd statement, paragraphs 41-42 **[BT2/8/RB/16-17]**

[224] The exact derivation of the proxy for trunk prices in Austria, Belgium, Germany and Spain is not set out in BT's evidence. It may be based on the per km element of terminating segment charges in these four countries (which, for example, is the transmission or distribution element in BT's terminating segment charges). If so, it is not clear whether this method provides a valid proxy for these four countries. Such a question may depend, for example, on the basis and composition of per km and non-distance related terminating segment charges, which are not addressed or explained in BT's evidence. But the information in BT's evidence suggests that the composition of terminating segment charges may be quite different between these four countries and the UK (eg comparing the relativities of total terminating segment charges at different distances).

Where the comparison between trunk and per km terminating segment transmission prices is justified, such information is useful. In the 2004 LLMR, Ofcom considered that it was valid in the UK to compare BT's trunk price with its per km terminating segment transmission price. Indeed this was part of the evidence used by Ofcom to support its conclusion that BT had SMP in the wholesale trunk segments market (see 2004 LLMR, paragraph 3.88 **[DF1/7/111]**). The corresponding comparison in the Disputes is consistent with Ofcom's conclusion of overcharging, since, during 2005/06-2008/09, BT's 2Mbit/s trunk charges were more than £100 per kilometre (see Table 2), compared to just below £50 per kilometre for BT's 2Mbit/s transmission charges for terminating segments (see spreadsheet sent to the Parties).

[225] Determination, paragraph 7.148-7.149 **[BT1/3/134]**

b. As regards footnote 207 (which is attached to Determination, paragraph 7.140) it is clear that this is merely part of the description in the Determination of *BT's claims* for the conclusions to be drawn from its evidence, before Ofcom's response. In the subsequent paragraphs (Determination, paragraphs 7.142-7.150) Ofcom explains why it disagrees with BT's claims.

272. Fifth, the Budd statement appears to accept that international benchmarking evidence was not a substitute for actual price and cost data for BT's service in the UK, to the extent that it was not intended to be determinative but to provide yardsticks.[226] The Budd statement, however, contends that Ofcom failed to place any weight on this evidence.[227] In fact, Ofcom considered the weight that could be attached to the evidence in its conclusion in the Determination, namely that the evidence on international benchmarking was "not sufficiently relevant or reliable in this case" to alter Ofcom's conclusions.[228]

DSAC

273. The Budd statement suggests that DSAC might best be defined as the Average Total Cost of one service when it is produced in a specific combination of other services.[229]

274. Although it may not be inaccurate, this definition seems more likely to obscure the meaning of DSAC than to illuminate it. As set out at paragraph 26 above, the DSACs are derived by taking the SAC of the broad increment and distributing it between the services that are included in that broad increment. Hence, the "specific combination" referred to in the Budd statement is all of the services in the broad increment. This follows the structure of BT's LRIC cost model. For trunk services, the broad increment is BT's Core increment.

275. The Budd statement notes that DSAC is the same as Average Total Costs when the specific combination is all of the firm's services. DSAC is then a fully distributed cost.[230]

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[226] Budd statement, paragraph 39 **[BT2/8/RB/16]**
[227] Budd statement, paragraph 43 **[BT2/8/RB/17]**
[228] Determination, paragraph 1.21(v) **[BT1/3/7]**. Such conclusions were derived by Ofcom from the evidence and analysis in the other parts of its methodology to assess overcharging: the first order test of DSAC, the magnitude and duration of charges in excess of DSAC, economic harm, rates of return, and whether charges below DSAC constituted overcharging.
[229] Budd statement, paragraph 53 **[BT2/8/RB/20]**

276. First, I note that precisely the same applies to SAC. The SAC of the combination of all the firm's services is the same as the firm's total costs (if the firm is efficient). Ofcom noted in the Determination that all of the cost concepts converge when the increment is the whole firm.[231]

277. Second, the "specific combinations" used for DSAC are the broad increments defined in BT's LRIC model (the Core increment in the case of 2Mbit/s trunk services). The DSAC approach does not involve more aggregated combinations, as I have explained above. Under the DSAC approach, therefore, the combination of all of the firm's services is not relevant. In contrast, the combination of all of the firm's services is a relevant test for the approach of SAC and combinatorial tests. Therefore, to the extent that the point in the Budd statement is a criticism, it applies to SAC and combinatorial tests, but does not apply to Ofcom's DSAC approach.

278. The Budd statement contends that Ofcom did not seek to rebut BT's argument that a single price could be above DSAC but at the same time below SAC.[232]

279. As I set out above, this is a key, explicitly recognised feature of DSAC. It is set out in Ofcom's description of DSAC and SAC in the Determination.[233] Indeed, in the Determination, Ofcom explicitly agreed with BT on this point.[234] The 1997 Guidelines and the Guidelines also made the very same point.[235]

280. The Budd statement argues that the Guidelines mention that the fact that DLRIC is "too high" (compared to LRIC) would be taken into account. In the same way, it is argued, Ofcom should take into account that DSAC is "too low" compared to SAC.[236]

281. The Guidelines specify DSAC (and DLRIC) as the ceiling (and floor) which provide an effective first order test.[237] They recognise, however, that DSAC "would normally be

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[230] Budd statement, footnote 36 **[BT2/8/RB/20]**
[231] Determination, paragraph A11.27 **[BT1/3/212]**
[232] Budd statement, paragraph 59 **[BT2/8/RB/22]**
[233] eg Determination, paragraph 5.59 **[BT1/3/57]**
[234] Determination, paragraph 5.61 **[BT1/3/57]**
[235] Guidelines, paragraph B.14 **[BT3/12.2]**
[236] Budd statement, paragraph 66 **[BT2/8/RB/25]**
[237] Guidelines, paragraph B.2 **[BT3/12.2]**

smaller than the average stand-alone cost".[238] They also state that SAC, being above DSAC, along with combinatoral tests, would be taken into account if "estimates of the incremental and stand-alone costs of services were produced using a generally accepted robust methodology".[239] This is the test that Ofcom applied in the Determination, eg see paragraphs 5.56 and 7.92-7.133.

Combinatorial tests

282. The Budd statement suggests a significance to the possibility that a single price could be above DSAC whilst the firm as a whole might not be recovering its total costs.[240] The central point that the Budd statement seeks to make is that, in using DSAC, Ofcom apparently forgets or ignores the fact that the result of the combinatorial test depends on charges and costs for other services in the combination.

283. As explained above, Ofcom does not forget or ignore the fact to which the Budd statement refers. Instead, DSAC is a conscious departure from combinatorial tests. One of the fundamental aspects of this departure, and a simplification that the DSAC approach allows, is that the DSAC test applies at the level of individual services (eg see paragraphs 42 to 47 above).

284. I also note that excessively high and excessively low prices (however they are defined) should not be offset against each other as both may cause economic harm and the harm may compound each other[241] (although I recognise that, whilst this provides an example of a price above DSAC without there being over-recovery of costs, the proposition in the Budd statement does not rely on such a situation).

285. The Budd statement contends that the obvious question to ask is whether or not the SAC test for the "parent" combination is failed. BT provided this in its letter of 7 August 2009. The Budd statement argues that this evidence shows that the SAC tests, consistent with the Guidelines, were passed by a significant margin.[242]

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[238] Guidelines, paragraph B.14. I also note that the comment in the Guidelines at paragraph B.17, to which the Budd statement refers, does not definitively state that the floor is too high but instead states that "it could be argued that floors set using this methodology are too high" **[BT3/12.2]**.
[239] Guidelines, paragraph B.19 **[BT3/12.2]**
[240] Budd statement, paragraph 62 **[BT2/8/RB/22]**
[241] Determination, paragraph 4.100 **[BT1/3/41-42]**
[242] Budd statement, paragraphs 68-69 and 70-72 **[BT2/8/RB/25-27]**

286. First, this is neither the obvious nor the correct question to establish the important combinatorial tests to assess. That is defined by the services with which 2Mbit/s trunk services share common costs (eg see Determination, paragraph 7.132). Paragraph 7.126 and Table 7.7 in the Determination identify that a relatively small proportion of the common costs in BT's estimate of the SAC for 2Mbit/s trunk services is shared with other services in the Core increment, ie the "parent" combination as defined in the Budd statement. Specifically, only **[ ]** or less of the total SAC is due to common costs shared by services in the Core increment (ie "Intra-Core common costs" in Table 7.7 of the Determination). This means that the combinatorial tests set out in BT's letter of 7 August 2009 are relatively unimportant. In contrast, about **[ ]** of the SAC of 2Mbit/s trunk is accounted for by common costs that are shared by all of BT's network services (ie "Intra-Network common costs").[243] This means that the most important combinatorial tests are between trunk and non-PPC (and non-Core increment) services. BT failed to conduct these combinatorial tests.[244]

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287. Second, BT's approach is not consistent with the Guidelines. The Guidelines do not state that the appropriate combinatorial tests are for the "parent" combination. They do, however, state that, to be used in an investigation, evidence on combinatorial tests needs to be derived from a generally agreed robust methodology. BT's methodology is neither generally agreed, nor robust.[245]

288. The Budd statement argues that the question is whether or not SAC information is relatively more informative than the DSAC data, and contends that the significant limitations of a single DSAC estimate are ignored by Ofcom.[246]

289. First, BT's SAC data is not informative for the reasons summarised in paragraph 5.56 of the Determination. To take one example, as discussed above, the combinatorial tests on which BT presents evidence are the relatively unimportant combinatorial tests, because they relate to services which share relatively little common cost with 2Mbit/s trunk segments.

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[243] Intra-Core common costs correspond to "Intra-Group Common Costs" in the diagrams in Annex 1; and Intra-Network common costs correspond to "Common Costs Across All Service".
[244] Determination, paragraph 7.131 **[BT3/1/132]**
[245] Determination, paragraphs 7.92-7.133 **[BT1/3/123-132]**
[246] Budd statement, paragraph 75 **[BT2/8/RB/28]**

290. Second, the "limitations" of the single DSAC estimate are not ignored by Ofcom. As set out above, the Determination explicitly recognised that DSAC is likely to be lower than SAC and implies less pricing flexibility for BT.

291. The Budd statement notes that BT has not claimed that its methodology is generally accepted. It would not have been possible in the time available from publication of the Draft Determination to do so. It contends that Ofcom has carried out SAC tests elsewhere without establishing a methodology which has been generally accepted.[247]

292. As noted above, the Guidelines state that SAC and combinatorial evidence needs to be produced from a generally accepted robust methodology to be taken into account by Oftel/Ofcom in an investigation. Therefore, I understand this comment in the Budd statement to be an admission that BT's SAC evidence is not consistent with the Guidelines.

293. As to the claim that the time available was insufficient to establish a generally accepted methodology, this is so only because BT has used SAC evidence as a post hoc rationalisation of its overcharging for 2Mbit/s trunk services. If BT had developed the evidence in advance or contemporaneously with its pricing decisions, as it should have if it wished to justify its prices using such evidence, it would have had time to engage with Ofcom and other interested parties to seek to establish general acceptance of its methodology (see also paragraph 48.b above).

294. The SAC tests carried out elsewhere by Ofcom, referred to by the Budd statement, are in:

a. Oftel's Effective competition review of national leased lines in 2000 ("**2000 Review**"); and
b. Ofcom's NCCN500 decision in 2008 under the Competition Act.

295. The "stand-alone cost" tests carried out by Oftel as part of its 2000 Review are different both in nature and in purpose to those which BT relies on in the Disputes. This is clear from the description of the tests in Annex B of the 2000 Review.

[247] Budd statement, paragraphs 77-78 **[BT2/8/RB/29]**

296. First, in paragraph B2 of Annex B, Oftel explained that "there are two types of tests that would need to be satisfied in order to show that BT's returns…are not excessive", stated that the SAC test is the first of these, and then noted that this "might be quite an easy test to pass if common costs are significant". In paragraph B3 Oftel explained how it addressed this by means of "the second type of test [which] allows for the fact that some of the common costs might already be being recovered from services other than leased lines". This is described as a "combinatorial test".

297. Paragraph B7 explained the nature of Oftel's test as follows: "The SAC test adjusted for recovery of common costs from the PSTN will therefore include the LRIC of leased lines and the common costs shared between leased lines and other services, *minus the contribution to common costs allowed under the regulation of PSTN services*", (emphasis added). The latter was determined on an FAC basis, and therefore provided for a proportionate contribution to common cost recovery by PSTN services. It can be contrasted with the assumption of BT's calculations which is that in effect no contribution to common cost recovery is made from these services. This is one reason why the omission, from the tests carried out by BT, of combinatorial tests including the services with which trunk shares most common costs, is an important weakness of BT's approach (eg see paragraphs 12, 17, 42, 58 and 286).

298. Second, the purpose of the combinatorial tests which Oftel conducted in the 2000 Review was also, importantly, different to the purpose of the cost analysis in the Disputes. The tests in the 2000 Review were part of Oftel's analysis of whether or not there was a need to impose regulation on retail and wholesale leased lines. They were not an assessment of overcharging on a specific service (2Mbit/s trunk) in relation to a cost orientation obligation that was already in place, as in the Disputes.

299. Third, in one respect, however, Oftel's calculations in the 2000 Review are subject to the same problems as BT's. The information available to Oftel was not of sufficient quality to enable a robust conclusion to be reached. Thus in paragraph B11 Oftel stated that "due to the lack of appropriate information, it has been necessary to estimate some elements used in this test such as the amount of retail common costs shared between leased lines and other parts of BT…therefore the results should be considered as indicative rather than conclusive." In addition, in paragraph B12, Oftel noted that "there is a further test which BT would have to pass to show that its leased lines prices were not excessive.

This test would take into account the extent to which BT is recovering any of its common costs on ODS" (ODS are "Other Data Services"). In paragraph B13 Oftel stated that it was unable to undertake this test due to a lack of data but that it intended to obtain the information to enable it do so.

300. Fourth, Oftel took appropriate account of the shortcomings of the data in deciding to undertake further work before reaching a final conclusion (see paragraph B14). Oftel published a statement and draft direction setting out its conclusions in December 2000. However, this was only stage 1, in which Oftel concluded that BT should make PPCs available on non-discriminatory terms and at cost-oriented prices. The detail of the regulation of PPC prices was left to stage 2, which was completed in December 2002. The key conclusion of Oftel's combinatorial analysis was however reported in June 2002:[248]

> "It would be possible to further analyse BT's rate of return on leased lines via combinatorial tests [in addition to assessment on an FAC basis], but such a study would require detailed information on all the costs that are common between leased lines and other parts of BT's regulated business and would imply examining the profitability of these other parts of BT which share costs with leased lines. Earlier work on this issue, contained in the Leased Lines Review [ie the 2000 Review], indicated that there are considerable uncertainties in making this calculation for retail leased lines. Consequently, Oftel has not undertaken analysis of this sort."

301. In conclusion, Oftel's 2000–2002 analysis therefore reflects the view that SAC and combinatorial tests are vulnerable to data limitations, are difficult to complete in a robust manner, and that this severely limits their usefulness.

302. As regards the NCCN500 decision, this was not, of course, carried out in accordance with the Guidelines, because it was a Competition Act investigation. The Guidelines are, however, relevant to ex ante regulation and to the Disputes and, as explained above, the DSAC approach is knowingly and appropriately a more stringent test than the Competition Act. See also paragraphs 338 to 341 below for a further discussion of the NCCN500 decision.

[248] "Phase 1 direction to resolve a dispute concerning the provision of partial private circuits", June 2002, at para C65 **[DF3/16/9]**

Ofcom's concerns about SAC/combinatorial tests

303. The Budd statement suggests that the answer to the problem of service identification raised by Ofcom (as described at paragraph 43 above) is that other approaches are needed to consider charges, such as BT's circuit analysis and international benchmarking.[249]

304. First, in principle, it is unclear how this could answer Ofcom's point. The circuit analysis is another type of combinatorial test, so this makes it incapable of resolving the difficulty. International benchmarking data is generally not sufficiently comparable or precise to reach strong conclusions about overcharging.

305. Second, in practice, the problems with BT's circuit analysis and international benchmarking mean that they are not adequate to reach a conclusion on overcharging (eg see paragraphs 59 to 60 above).

306. The Budd statement argues that it is "outlandish" to suggest that BT would forgo cost savings it could otherwise make. In any case Ofcom could make an adjustment for "outperformance" of price caps. Furthermore, it is argued that, in the case of PPCs, the risk that efficiency incentives have been undermined can be dismissed on the evidence.[250]

307. First, in my view, Ofcom's suggestion is not at all "outlandish", but reflects a mainstream economic analysis. It is analogous to the well-established problems with rate of return regulation. Price caps have superior incentive properties, because, with rate of return regulation, there is little or no profit gain for the regulated firm. Cost reductions increase its rate of return and, under rate of return regulation, this leads to lower prices which remove that profit increase. Hence, the regulated firm has weak incentives to make cost savings under a rate of return regime, ie it is likely to forgo cost savings it could otherwise make, because such actions are not profit-increasing. Analogously here, a cost reduction on a price controlled service increases the chances of a combinatorial test being failed, which could lead to repayments and the removal of (at least part of) BT's profit gain from the cost reduction. Since it would be less profitable to make cost reductions, BT would have a weakened incentive to make them.

[249] Budd statement, paragraphs 79-80 **[BT2/8/RB/29-30]**
[250] Budd statement, paragraph 81-82 **[BT2/8/RB/30]**

308. Second, although adjustments for "outperformance" or "underperformance" of price caps are theoretically possible, such analysis may not be straightforward. Ofcom accepted the potential for such possibilities in the Determination.[251] The fact is, however, that BT did not include any such adjustment in its evidence (see also paragraph 44 above).

309. Third, whatever the historical evidence, the adverse effect on incentives could also occur in the future for any price-controlled services that share significant common costs with non price-controlled services (subject to ex ante obligations).

310. The Budd statement suggests that BT has estimated the SAC of an efficient operator as the level of common costs was abated to take into account that a stand-alone operator would not have needed the same large and geographically spread core network. This abatement, Mr Budd argues, is through the use of inclusion percentages that are less than 100%.[252]

311. It appears that the Budd statement has confused two distinct issues:

a. Relevance: the exclusion of costs that are not genuinely common to the service in question; and
b. Efficiency: the adjustment of genuine common costs to reflect those of a least-cost stand-alone operator.

312. My understanding is that BT's inclusion percentages seek to address the first of these two issues, but not the second (and the Budd statement includes no evidence to suggest differently).

313. SAC estimates should include all, but only those, costs that are common between the service(s) in question and other services produced by the firm. BT's LRIC model, which provides the base data for BT's SAC analysis, is based on broad increments. As a consequence, the model does not produce sufficiently granular estimates of common costs to identify only those that are common to individual services or specific

[251] Determination, footnote 112 **[BT1/3/61]**
[252] Budd statement, paragraph 83 **[BT2/8/RB/31]**

combinations.[253] Inclusion of common costs that are not relevant to the SAC being estimated would clearly lead to an over-estimate.

314. As noted above, broad increments are sufficient to produce DSAC information, but not to derive information on individual service SACs (see paragraph 236). BT's inclusion percentages, as I understand it, are designed to address this problem of a mismatch between the granularity of its LRIC model and the purpose for which BT was seeking to use it in the Disputes (ie without such a mismatch all of the inclusion percentages would be straightforward and either 0% or 100%). So, for example, not all of BT's duct network is used by 2Mbit/s trunk services, and therefore not all of the common costs for the network are relevant to a 2Mbit/s trunk SAC estimate. By employing an inclusion percentage below 100%, BT has sought to exclude the proportion of common costs that is irrelevant, ie not genuinely common to 2Mbit/s trunk services. However, Ofcom set out a concern about the robustness of BT's inclusion percentages in the Determination.[254]

315. But in any case, the mere exclusion of costs that are irrelevant does not imply that the SAC estimate reflects that of an (hypothetical) efficient / least-cost stand-alone operator. Rather, the costs of such an operator would reflect a network of appropriate size and functionality necessary to produce the service(s) in isolation[255] and Ofcom noted in the Determination:[256]

> "BT is not a stand-alone operator and its network design reflects the fact it supplies a large portfolio of services. It is not clear that BT's network architecture and design would be the least cost way for a stand-alone operator to provide 2Mbit/s trunk services (or other combinations of services). For example, it is unlikely that BT would have built so large and geographically spread a core network if it was only providing PPCs. To the extent that a least-cost stand-alone operator would design its network in different ways, it may be able to avoid the full extent of common costs identified in BT's cost model. If so, BT's SAC estimates will overstate the relevant cost benchmarks, particularly for more granular service increments."

[253] Determination, paragraph 7.111 **[BT1/3/127]**
[254] Determination, paragraphs 7.110-7.117 **[BT1/3/126-127]**
[255] Determination, paragraph 7.103 **[BT1/3/125]**
[256] Determination, paragraph 7.107 **[BT1/3/126]**

316. In the context of the earlier duct example, BT sought to exclude the common costs for duct not used by 2Mbit/s trunk services. But of the common costs that remained, it should also have considered to what extent those costs would have been incurred by an efficient stand-alone operator that did not face the constraints imposed by providing other services over the same network architecture. For example, would a 2Mbit/s trunk-only network follow a different geographical pattern? Or, would the duct need to be as large? As far as I am aware, BT has not considered this aspect of the efficient SAC in formulating its inclusion percentages.

317. The Budd statement contends that the use of BT's incurred costs is not a distinguishing feature between DSACs and SAC.[257]

318. This point is recognised and dealt with in the Determination:[258]

> "We recognise that this concern also applies to BT's estimates of DSAC. There is the potential, therefore, for DSACs to be too high. However, first, this would not provide any assistance to BT in justifying its charges for 2Mbit/s trunk services. Second, the extent of this concern in relation to DSAC is much more limited than for SAC, because of the very different levels of the cost benchmarks. For example, DSACs for 2Mbit/s trunk services are about 75% to 120% higher than FAC, whereas BT's estimates of SAC are around **[ ]** to **[ ]** higher than FAC. In our view, this disadvantage of DSAC estimates is, on balance, more than offset by the advantages of DSAC to assess overcharging as set out in Section 5. However, the implication of the concern could be much more significant for SAC."

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319. The Budd statement argues that Ofcom's suggestion is misplaced that greater disaggregation of the increments risks overstatement of common costs, because the same incremental cost information is used for DSAC and SAC. It is claimed that all cost models, including FAC, are less dependable at a more disaggregated level, but this does not stop Ofcom from using disaggregated FAC or DSAC results.[259]

320. It may be that the same source cost information is used and the same underlying cost model. But Ofcom's point at Determination, paragraph 7.109 was that SAC, requiring

[257] Budd statement, paragraph 85 **[BT2/8/RB/31]**
[258] Determination, footnote 191 **[BT1/3/126]**
[259] Budd statement, paragraphs 86-87 **[BT2/8/RB/32]**

much more disaggregated increments, relies to a greater extent on the shape of the cost-volume relationships ("**CVRs**") in BT's cost model. CVRs specify how each specific category of cost evolves over the full range of volumes. In many cases, with a much broader increment as for DSAC, the shape is less important and in some cases only the intercept of the CVR will matter, not its shape (because the volume relevant to the broad increment is the entirety of the volume for that cost category). As regards FAC, its derivation does not depend on CVRs.

321. For example, Oftel stated in the May 1997 consultation on Network Charges **[BT2/ESP5]**[260] that the complexity of modelling at a disaggregated level was "one of the reasons why the whole of conveyance was chosen as the increment" and that "the results [of the model] for disaggregated increments would be far more reliant upon the detail of particular cost-volume relationships [ie CVRs]".[261] Oftel went on to state that "unless the industry were to have confidence in such detail in the model [ie for disaggregated increments], no robust methodology for estimating the incremental and stand-alone costs of services would have been established".[262]

322. The Budd statement suggests that, even if there are inaccuracies, a potential understatement of common costs is equally likely.[263]

323. First, given the scale of common costs identified by BT (for example, around **[ ]** of BT's estimate of the SAC of 2Mbit/s trunk services is accounted for by common costs), I consider it more likely that BT has overstated common costs than understated them. The Determination identified a number of possible sources of overstatement in BT's estimates of SAC (including, for example, the fact that BT has not modelled the costs of an efficient stand-alone entrant), apart from inaccuracies resulting from the CVRs used in BT's model.

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324. Second, as regards these inaccuracies, if they mean that the disaggregated cost estimates are unreliable, then this is an argument against using tests that rely on more disaggregated increments, even if they are as prone to underestimation as they are to overestimation.

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[260] Paragraph 6.32
[261] Paragraph 6.33
[262] Paragraph 6.33
[263] Budd statement, paragraph 89 **[BT2/8/RB/32]**

325. The Budd statement suggests that BT carried out all of the combinatorial tests that Ofcom suggested or appeared to suggest. Pragmatism means that not every combinatorial tests needs to be considered.[264]

326. I have dealt with this issue above. I noted, for example, that BT failed to conduct the most important combinatorial tests for the services which share the great majority of the common costs relevant to 2Mbit/s trunk services.

327. The Budd statement contends that, in raising a concern about the combinatorial test across the whole of BT, Ofcom is levelling a theoretical criticism against the Contestable Markets Approach, which it itself adopted through the Guidelines and the Determination.[265]

328. First, as I have set out above, Ofcom's DSAC approach consciously departs from the textbook theory of contestable markets.

329. Second, in any case, this was not a criticism of the contestable market theory. Footnote 113 in the Determination explains that the contestable markets theory avoids the undesirable implication of rate of return regulation through the use of efficient SACs (not incurred cost, as BT has done).[266]

330. The Budd statement argues that a realistic level of aggregation might be the portfolio of services which a competitor might offer.[267]

331. The relevant consideration in determining the appropriate or the most important combinatorial tests is the services that share the most significant common costs. Given that (as noted above) about **[ ]** of the cost in BT's estimate of SAC of 2Mbit/s trunk relates to Intra-Network common costs, a "realistic" level of aggregation should involve services beyond PPCs and should include services in the other broad increments. The combinatorial tests provided by BT did not do so.

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[264] Budd statement, paragraphs 93-98 **[BT2/8/RB/34-36]**
[265] Budd statement, paragraphs 99-100 **[BT2/8/RB/36]**
[266] This same point is made at the top of page 87 in Baumol and Sidak (1994) **[DF3/3/13]**.
[267] Budd statement, paragraph 101 **[BT2/8/RB/37]**

332. The Budd statement claims that the margin between SAC and BT's price makes it legitimate to conclude that the results are robust to all but any major methodological errors.[268]

333. I do not accept this claim. In my view, as set out above and in the Determination, there are fundamental weaknesses in BT's evidence on SAC, which compromise its ability to contribute to the assessment of overcharging.

334. The Budd statement suggests that Oftel conducted combinatorial SAC tests in the 2000 Review in a similar way to those undertaken by BT.[269] It is also suggested that there is a clear analogy with BT's use of inclusion percentages.[270]

335. First, as I explain above, the tests which Oftel carried out in the 2000 Review were different in nature and in purpose to those undertaken by BT.

336. Second, I consider that the suggestion that there is a "clear analogy" between the 2000 Review and BT's use of inclusion percentage is mistaken. This is because, in its 2000 calculation, Oftel subtracted the common costs allowed under the regulation of PSTN services from the sum of the LRIC of leased lines and the common costs (which leased lines shared with other services). In this calculation, some of the common costs within the SAC of leased line services were deemed to be recovered from PSTN services and subtracted to avoid over-recovery, resulting in a cost measure *below* the SAC of leased lines. However, BT's inclusion percentages are intended to derive the SAC, not a cost measure below SAC.

337. By contrast, BT's calculation appears in effect to assume that only the incremental costs of other services are recovered from those services. The use of inclusion percentages appears to be intended to identify those costs which are not, in fact, common costs relevant to leased lines (but which might have been included in the relevant cost categories in the underlying financial data because of the 'mismatch', ie the structure of the cost model is built around broad increments, not disaggregated increments). These are therefore part of the incremental costs of the other services.

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[268] Budd statement, paragraph 102 **[BT2/8/RB/37]**
[269] Budd statement, paragraph 103 **[BT2/8/RB/37-38]**
[270] Budd statement, footnote 63 **[BT2/8/RB/38]**

338. The Budd statement describes Ofcom's modelling of SAC in the NCCN500 decision and suggests a similarity to BT's modelling in the Disputes.[271]

339. First, in the NCCN500 decision Ofcom considered whether SAC or DSAC was appropriate to the circumstances of that case.[272] It was noted that SAC will normally be above DSAC and that, in the context of investigations under the Competition Act, a price above DSAC would not be sufficient for a finding that a price is excessive. But, as I have set out above, the DSAC approach under ex ante provisions is knowingly and appropriately a more stringent test than abuse of a dominant position under the Competition Act.

340. Second, in the NCCN500 decision Ofcom considered a range of other indicators derived from the case law on excessive pricing. In the light of these, Ofcom did not find that the charges in NCCN500 were abusive on grounds of margin squeeze and discrimination, and it considered that any finding of excessive pricing would have therefore relied on a comparison of prices with costs alone. As the case law made clear that a tough test would be needed in order for a finding of excessive pricing to be based on such a comparison of prices and costs alone, Ofcom adopted a SAC standard.[273]

341. Third, I note that the model was that of a single product firm using appropriate technology for a stand-alone operation and not one having a large ubiquitous network similar to BT's. Ofcom did not therefore rely on network cost data derived from BT's model.[274] BT's approach to estimating SAC therefore differs from Ofcom's in NCCN500, in that it has based this entirely on its own incurred costs.

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[271] Budd statement, paragraphs 104-106 **[BT2/8/RB/38-39]**

[272] NCCN500 decision, paragraphs 6.333 to 6.336 **[DF3/12/95]**

[273] The discussion of excessive pricing in the NCCN500 decision is lengthy. The following paragraphs in the decision are perhaps most helpful to an understanding of the use of SAC in the NCCN500 decision: paragraph 6.438 **[DF3/12/119]** which makes the point that, in the absence of evidence of harm, the cost-based evidence would have to be particularly "cogent" to support a finding of excess pricing; paragraphs 6.444-6.448 **[DF3/12/120]** which link this evidential standard to the SAC test; and paragraph 6.466 **[DF3/12/123]** which links this to the second stage of the applicable tests. The conclusions are summarised in paragraphs 6.467-6.477 **[DF3/12/123-124]**, which are followed by a section on responses to the draft decision on excessive pricing.

[274] Although retail cost data from BT was used. The model is described in paragraphs 6.363 **[DF3/12/102]** onwards of the NCCN500 decision.

e) Response to Other Points in the Pigott Statement

342. As a preliminary point, I note that there is some common ground between Mr Pigott and me, as well as points of disagreement. For example, I agree with the following points in the Pigott statement (subject to the points of disagreements also noted):

a. Floors and ceilings were defined in the 1997 Guidelines as DLRIC and DSAC.[275]

b. To assess overcharging, floors and ceilings should apply to services, not components.[276]

c. The 1997 Guidelines suggested that charges *outside* of the DLRIC floor and DSAC could nevertheless be reasonable.[277] However, I note that the 1997 Guidelines also suggested that charges *within* floors and ceilings could be unreasonable, which is set out in the words omitted from the quotation from paragraph C.2 of the 1997 Guidelines at paragraph 52 of the Pigott statement: "or charges set within the band [of floors and ceilings] are abusive".

d. As recognised in the 1997 Guidelines (as well as the Guidelines and the Determination), it is possible for charges to be outside of the DLRIC and DSAC range but still pass combinatorial tests.[278] However, as I have discussed earlier, the Pigott statement fails to refer to the requirement in the 1997 Guidelines for the methodology used to produce evidence on SAC and combinatorial tests to be generally accepted and robust (eg see paragraphs 80 and 147 to 148 above).

e. Oftel and BT were in disagreement in 1997 (and in the preceding consultation process) about the use and role of DLRIC and DSAC in investigations into the reasonableness of charges.[279] I have commented on this disagreement earlier in this statement (see paragraphs 79, 147 and 151).

343. I have set out in this statement the reasons why I disagree with the key points in the Pigott statement (see paragraphs 76 to 82 and 137 to 163 above). Below I comment on selected other points in the Pigott statement, following the order in which they appear in

[275] eg Pigott statement, paragraph 51 **[BT2/8/ESP/19]**
[276] eg Pigott statement, paragraph 36 **[BT2/8/ESP/12-13]**
[277] Pigott statement, paragraph 52 **[BT2/8/ESP/20]**
[278] Pigott statement, paragraph 54 **[BT2/8/ESP/21]**
[279] Pigott statement, paragraphs 46-47 **[BT2/8/ESP/17-18]**

that document. In each case, I first summarise the comments in the Pigott statement in the paragraphs identified and then I present my response.[280]

Fair Trading Guidelines

344. The Pigott statement notes that the July 1997 NCC Statement cross-refers to the March 1997 Fair Trading Guidelines as setting out Oftel's approach to judging whether prices are anti-competitive. The Pigott statement then draws a distinction between LRIC and SAC, referred to in the Fair Trading Guidelines, and DLRIC and DSAC, referred to in the 1997 Guidelines.[281]

345. However, the July 1997 Statement explains that the NCC Guidelines take precedence: "…in case of conflict or inconsistency, the Guidelines on the operation of the Network Charge Controls will take precedence over the Guidelines on the operation of the Fair Trading Condition where interconnection services are concerned".[282] Since I agree with the Pigott statement that the floors and ceilings referred to in the 1997 Guidelines were defined as DLRIC and DSAC, there was no ambiguity or conflict introduced by the July 1997 Statement.

Previous use of combinatorial tests

346. The Pigott statement cites two examples of the development of combinatorial tests by BT and the industry within a relatively short timescale. These examples are then used to support the claim that proper combinatorial testing can be done in the timescales relevant to the Disputes.[283]

347. I have explained above that, if BT wanted to rely on estimates of service-level SAC and combinatorial tests to demonstrate why it considered that charges which failed the first order test were nevertheless reasonable, the Guidelines explain that it needed to do so using a generally accepted robust methodology. Furthermore, I have also explained that such a methodology should have been developed either in advance of, or contemporaneous with, BT setting charges for 2Mbit/s trunk services that exceeded

[280] Where I do not respond to points in the Pigott statement, this should not be taken as indicating my agreement.
[281] Pigott statement, paragraphs 20 to 22 **[BT2/8/ESP/7-8]**
[282] July 1997 Statement, paragraph 75 in Annex A **[BT2/8/ESP2]**
[283] Pigott statement, paragraphs 55 to 59 **[BT2/8/ESP/21-23]**

DSAC (see paragraph 291 to 293 above). Ofcom concluded in the Determination that BT's evidence, submitted during the Disputes, was neither generally accepted nor robust for a wide range of reasons. These reasons went well beyond the timescales relevant to the Disputes (eg see the summary at Determination, paragraph 5.56 and paragraphs 40 to 48 and 230 above).

348. I now turn to the specific examples of combinatorial testing that the Pigott statement refers to. The first example relates to Operator Assistance and Directory Enquiry Services.[284] Unfortunately, no references or exhibits are provided by BT in relation to this example, and insufficient information is provided in the Pigott statement for me to be able to comment.

349. The second example relates to the development of combinatorial tests for International Calls. The Pigott statement notes that this exercise was concluded in a three month period in 1998.[285] These combinatorial tests were developed in relation to the international increment for which DLRIC and DSAC estimates had not been generated as part of the 1997 NCC LRIC modelling work. Therefore an alternative approach to generating floors and ceilings for charges had to be developed. BT devised a methodology in conjunction with the industry and Oftel.[286]

350. In my view there are important distinctions between the International Calls example and the Disputes. First, my understanding is that the methodology developed for International Calls was one that would apply going forward and, following discussions with Oftel and the industry, was generally accepted. This is in contrast to the Disputes, in which BT's evidence was offered as a post hoc rationalisation of its high prices for 2Mbit/s trunk services and without any prior discussion or establishing a generally accepted methodology.

351. Second, my understanding is that the combinatorial tests for International Calls were essentially confined to the broad increment of the International Network and that common costs with other broad increments were not included.[287] In contrast, at least **[ ]**

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[284] Pigott statement, paragraph 56 **[BT2/8/ESP/21-22]**
[285] Pigott statement, paragraph 58 **[BT2/8/ESP/22]**
[286] Pigott statement, paragraph 58 **[BT2/8/ESP/22]**
[287] eg see slide 10 in **[BT2/8/ESP11]**, showing the international network cost structure, only includes costs within the International Network increment and no common costs with other broad increments.

of the SAC of 2Mbit/s trunk services constitutes common costs with other broad increments (ie other than the Core Network).

352. Third, various of the concerns set out in the Determination about SAC and combinatorial tests, applicable to the Disputes, were not relevant to International Calls in 1998, such as:

a. The combinatorial tests for International Calls did not span charge-controlled and non-charge controlled services. All International Call prices were subject to safeguard caps of RPI+0%.[288]

b. The combinatorial tests for International Calls did not span competitive markets and markets in which BT had market power. All international routes had a broadly similar degree of competitiveness at that time.[289]

c. As noted above, in the case of International Calls in 1998, my understanding is that the methodology was established in advance of it being applied to assess charges.

d. The industry was able to comment on BT's methodology for International Calls combinatorial tests and it was agreed by Oftel.

e. Since my understanding is that there were not large common costs between the International Network and other broad increments, the tests for International Calls included the most important combinatorial tests.

Rates of return

353. The Pigott statement refers to the rate of return calculations provided by Mr Pigott to Mr Budd.[290] In the context of the Budd statement (see paragraphs 122 to 127 above) I have identified a number of reasons why I consider the ROCE estimates used by BT are misleading as indicators of the effects of the Determination. There are also two

[288] See 1997 Guidelines, paragraph 2.8 **[BT3/12.1]**: "Each discrete charge for IDD conveyance (excluding gross outpayments to overseas operators) including when disaggregated by route (country pair) or time of day or day of week will therefore be subject to a safeguard cap of RPI+0%."

[289] See 1997 Guidelines, paragraph 2.8 **[BT3/12.1]**: "With full international liberalisation, Oftel considers that all international routes are prospectively competitive, although it recognises that competition may take longer to become fully established on some routes than others." Note that all services in the 1997 Guidelines were classified as being either competitive, prospectively competitive or not competitive.

[290] Pigott statement, paragraph 60 **[BT2/8/ESP/23]**

additional calculation complexities that are not discussed in either the Pigott statement or the Budd statement.

354. First, BT's approach to allocating costs in 2004/05 does not reflect the differences in unit costs in that year between internal and external sales. It is explained in the Determination that a difference in SG&A costs in 2004/05 (but not other years) warranted an adjustment to be made to de-average the internal and external DSAC values.[291] The same adjustment is also relevant to the FAC cost estimates used to calculate ROCE values. However, BT has not made this adjustment in its ROCE estimates.[292]

355. Secondly, the accounting information provided by BT for the Disputes does not split costs (ie FAC) or mean capital employed ("**MCE**"), both of which are crucial elements of the ROCE calculation, between internal and external sales. Rather it reports service-level values aggregated across both internal and external sales.

356. In order to calculate rates of return specifically for external sales, BT has therefore allocated FAC and MCE between internal and external sales. There are various different methods available to undertake such an allocation, for example, in line with the split of revenues or volumes. The method BT has used involves pro-rating in line with the internal/external revenue split. In circumstances where the unit price for a service does not vary between internal and external sales, an allocation based on revenues will be the same as one based on volumes. However, this is not the case for PPCs. For two principal reasons, internal and external prices/average revenues diverge:

a. for local end services (which are part of terminating segments), BT levies a higher external charge than on internal sales, reflecting the need for additional point of handover equipment; and
b. for the early years of the period covered by the Disputes, the average revenues differ across a number of services principally due to the treatment of SG&A costs (as discussed above) and the move from route- to radial-distance charging.

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[291] Determination, paragraph 6.175 onwards **[BT1/3/103]**

[292] BT, however, recognised this difference in SG&A costs and took it into account in its Regulatory Charges for 2004/05 for internal sales – see Partial Private Circuits Internal Reference Offer, page 17 **[DF3/9/17]**: "However, regulated charges for both internal and external sales are applied using the same process. There are specific differences in treatment for some items (e.g. Local End usage factors and SG&A costs) but these processes and specific treatments are explained further within the spreadsheet."

357. Typically, if the services provided to internal and external services were equivalent, the unit costs of providing the service would be expected to be equivalent, regardless of whether the prices vary. Therefore, an allocation of costs on the basis of volumes would be appropriate. However, where there is a genuine difference in the costs of providing a service to internal and external customers, allocation of costs on the basis of volumes may not be the best method. But equally, as discussed below, it is not clear that basing the allocation on the differences in prices, as BT has done, is preferable.

358. The higher external price for local end services is based on a 30% uplift for point of handover equipment costs. The origin of this uplift is Oftel's 2002 PPC Phase 2 Decision.[293] However, BT's regulatory accounts for the period up to 2008/09 do not report different internal and external unit FACs for local end services. Rather, for 2006/07 and 2007/08 when BT does specifically report unit FACs separately for internal and external sales, the values are exactly the same (whilst, for earlier years, there is no separate reporting of internal and external sales for individual services). Furthermore, although the unit FAC for external sales in the 2008/09 regulatory accounts is higher than the internal unit FAC, the cost difference appears to be driven by the 30% price uplift (ie appears to be circular). Therefore, to the extent that there are cost differences, BT has not quantified them.

359. It is therefore unclear that BT's approach to allocating FAC and MCE on the basis of revenues is the most appropriate approach. Indeed, given that the regulatory accounts report that the unit FACs for internal and external local end services were the same for the majority of the period of the disputes, it seems reasonable to consider that an approach based on volumes (ie consistent unit costs) may be more appropriate.

360. As local end services constitute around a quarter of BT's PPC revenues over the period, the choice of the cost allocation methodology can have a material impact on the profitability estimates. For example, by switching from the revenue allocation
CONFIDENTIAL methodology used by BT to a volume approach, the **[ ]** ROCE quoted in the Budd
CONFIDENTIAL statement (see paragraph 125 above) increases to **[ ]**. Furthermore, by excluding 2004/05
CONFIDENTIAL from the calculation (as discussed in paragraph 126 above), the ROCE increases to **[ ]** (ie very close to BT's cost of capital).

[293] Determination, paragraph 6.148 **[BT1/3/99]**

Annex 1: Relevant cost concepts

A1. This Annex contains four stylised diagrams that demonstrate how the key cost concepts to this case differ and how each is constructed. I explain each in paragraphs 18 to 22 above. Further explanation is provided in Annex 11 of the Determination.

Figure A1: Standalone Cost ("SAC")

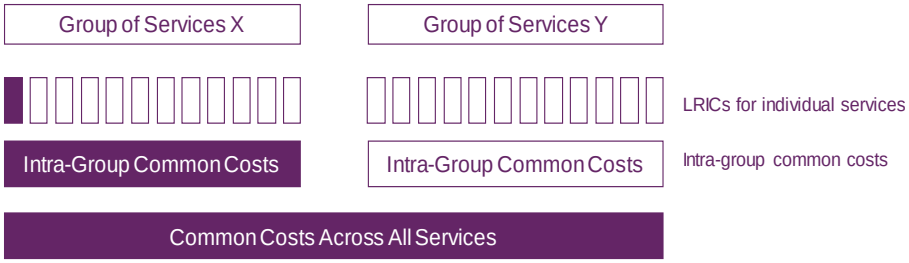


Figure A2: Distributed Standalone Cost ("DSAC")[294]

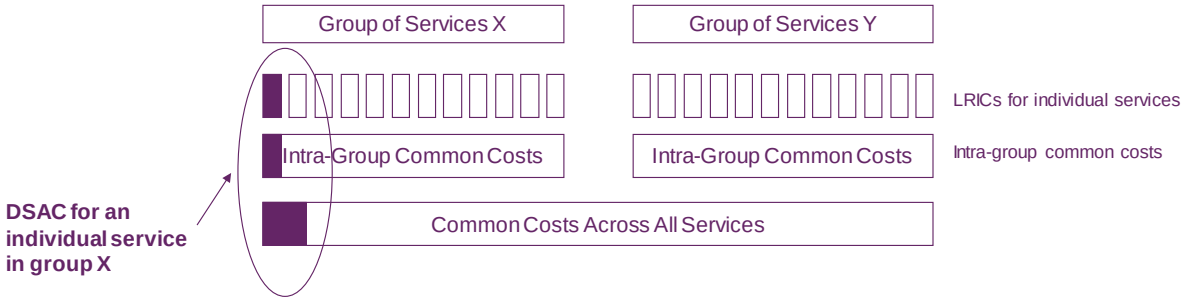
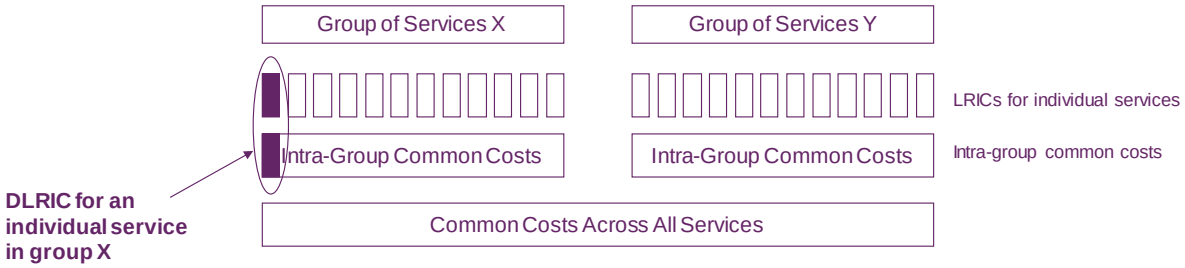
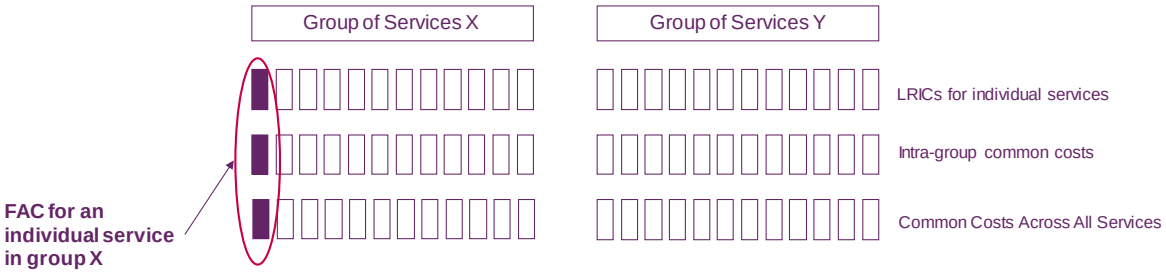


Figure A3: Distributed Long Run Incremental Cost ("DLRIC")[295]



[294] This reproduces the diagram at Figure A11.3 in the Determination **[BT1/3/207]**.
[295] This reproduces the diagram at Figure A11.2 in the Determination **[BT1/3/207]**.

Figure A4: Fully Allocated Cost ("FAC")



Statement of Truth

I confirm that insofar as the facts stated in my report are within my own knowledge I have made clear which they are and I believe them to be true, and that the opinions I have expressed represent my true and complete professional opinion.

Signed ……

GEOFFREY RICHARD PLATT MYERS

Dated 31 March 2010