Article 102, Treaty on the Functioning of the European Union
Chapter II, Competition Act 1998

Final Decision of The Office of Communications

CW/988/06/08: Complaint from THUS plc and Gamma Telecom Limited against BT about alleged margin squeeze in Wholesale Calls pricing

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Section 1

Summary

Overview

1.1 Ofcom has conducted an investigation to determine whether BT Group plc (“BT”) has infringed the prohibitions in section 18 of the Competition Act 1998 (“the Chapter II prohibition” and “the Act”) and Article 102 of the Treaty on the Functioning of the European Union (“TFEU”) by abusing a dominant position. Ofcom’s investigation has focused on whether BT’s pricing of its Wholesale Calls product during the period March 2008 to April 2009 amounted to an abusive margin squeeze.

1.2 An abusive margin squeeze arises where a vertically integrated dominant company fails to maintain a sufficient margin between its upstream prices and downstream prices such that it fails to cover its downstream costs (i.e. it earns a negative margin). This must be likely to lead to, or have, an anti-competitive effect.

1.3 We have concluded that we are not satisfied that BT has infringed the Chapter II prohibition or Article 102 TFEU. We find that BT earned a negative margin (calculated over adjusted EEO costs, with costs measured on a LRIC basis) on its wholesale calls product of £ million over the 10 months from July 2008 to April 2009. However, we conclude that we do not have sufficient evidence to demonstrate that, on the balance of probabilities, BT’s conduct was likely to, or has had an anti-competitive effect or that it is likely to have such an effect in future.

1.4 Our analysis of the evidence shows that anti-competitive effects did not arise in this case because the negative margin incurred by BT’s Wholesale Calls product was principally driven by one large contract, rather than a generalised pattern of pricing below cost. Absent this contract, the evidence of BT earning a negative margin is sensitive to the time period modelled.

1.5 Given the importance of this large contract, we examined the commercial rationale behind this contract and whether this contract alone could give rise to anti-competitive effects. Our analysis shows that there was an efficiency rationale behind this contract and that the pricing of the contract has not led, and is unlikely to lead, to anti-competitive effects. For reasons set out in detail in Section 7, BT’s conduct led to efficiency gains, it did not risk excluding its competitors from winning the contract and BT’s ongoing ability to pursue an exclusionary strategy based on this contract is severely limited.

1.6 We also reviewed a large number of BT’s internal documents relevant to the period considered by our investigation. This review did not identify evidence that BT had a deliberate strategy to exclude its competitors by way of an abusive margin squeeze.

1.7 We are therefore not satisfied that the evidence is sufficient to demonstrate that actual or potential anti-competitive effects arise as a result of the negative margins earned by BT on its Wholesale Calls product between July 2008 and April 2009. As a

1 Formerly Article 82 of the EC Treaty. Throughout this document, we will refer to Article 102 TFEU, with the exception of direct quotes where it would be historically incorrect to do so. Where the context pre-dates Article 102 coming into force on 1 December 2009, references to Article 102 TFEU should be read as references to Article 82 EC.
result, we do not consider that we have sufficient evidence to conclude that BT has infringed the Chapter II prohibition or Article 102 TFEU. Ofcom therefore concludes that it should issue a no grounds for action decision.

Introduction

Wholesale end-to-end calls

1.8 Wholesale Calls is the product that BT uses to compete in the provision of wholesale end-to-end calls to resellers. Communications providers (“CPs”) that compete with BT in this market, like THUS and Gamma, are collectively known as Carrier Pre-Selection Operators (“CPSOs”) as the wholesale end-to-end calls they supply are based on a mechanism called Carrier Pre-Selection (“CPS”). BT is required to provide CPS on regulated terms as a measure to facilitate competition in downstream markets. CPSOs combine CPS and other interconnection products purchased from BT (and other CPs) with their own networks to offer wholesale end-to-end calls.

1.9 Ofcom has previously investigated BT’s charges for Wholesale Calls. In 2005, Ofcom carried out an investigation under the Act following a complaint from Gamma that BT was carrying out a margin squeeze. Ofcom concluded in June 2005 that BT had not been carrying out a margin squeeze and published a decision that there were no grounds for action.2

1.10 Since the conclusion of that investigation, BT has made a number of changes to the way in which it sells its Wholesale Calls product. As discussed in greater detail in Section 6, BT has adopted a more aggressive approach to pricing Wholesale Calls, including offering bespoke prices and no longer publishing details of its pricing for Wholesale Calls. Internally, BT also revised the governance modelling it uses to check the consistency of its proposed pricing with its competition law obligations. The result of these revisions was to lower the cost floor above which BT believed it needed to price in order to comply with competition law.

1.11 Following the implementation of these various changes to its pricing and sales strategy for the Wholesale Calls product, BT went on to negotiate and win a number of substantial contracts for the provision of wholesale end-to-end calls. In doing so, BT increased its share of wholesale end-to-end call minutes in the merchant market from [X< 21-30%] in April 2008 to [X< 61-70%] in April 2009. Two [X] contracts (i.e. those in relation to [X Company 1] and [X Company 2]) contributed significantly to this increase in market share.

Ofcom’s investigation and findings

Background to the investigation

1.12 In June 2008 Ofcom received separate complaints from THUS plc (“the THUS complaint”)3 and Gamma Telecom Limited (“the Gamma complaint”) alleging that BT

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2 Ofcom decision of 13 June 2005 into the case ‘Complaint from Gamma Telecom Limited against BT Wholesale about reduced rates for Wholesale Calls from 1 December 2004’: see http://stakeholders.ofcom.org.uk/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw_802/.

3 THUS was acquired by Cable & Wireless Worldwide (“C&W”) in October 2008. C&W was itself acquired by Vodafone Europe B.V. (“Vodafone”) in July 2012. We refer to the company itself where relevant as “C&W/THUS”.

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was operating an anti-competitive margin squeeze in contravention of the Chapter II prohibition and Article 102 TFEU.

1.13 Specifically, THUS and Gamma alleged that BT has abused its dominant position in a series of upstream markets for interconnection services (including those for wholesale call origination and BT call termination) to effect a margin squeeze in the downstream market for wholesale end-to-end voice calls sold to other CPs. THUS and Gamma also alleged that since 1 April 2005 BT made greater price reductions to its Wholesale Calls product than for interconnection products purchased to compete with Wholesale Calls, meaning that CPSOs were unable to compete on price.

1.14 As a result of the alleged margin squeeze, THUS and Gamma claimed that CPSOs were unable to match BT’s pricing without making a loss.

1.15 Figure 1.1 below provides a simplified illustration of the alleged margin squeeze.

**Figure 1.1: Illustration of the alleged margin squeeze**

![Diagram showing the alleged margin squeeze](source: Ofcom)

**Note:** For simplicity, we have excluded non-BT forms of call termination from the diagram.

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4 CPs purchasing wholesale end-to-end calls for onward sale to end users or other CPs are referred to as ‘resellers’ and the market for the sale of services to these CPs is referred to in this document as the ‘merchant market’.
In investigating the allegations made by THUS and Gamma, Ofcom reviewed the relevant case-law and considers that an abusive margin squeeze exists only where each element of the following criteria is satisfied:

1. The abusive undertaking must be vertically integrated.
2. An input from the upstream market is used to participate in the downstream market.
3. The abusive undertaking must enjoy a dominant position in the upstream market.
4. The undertaking must be active in the downstream market.
5. The undertaking must fail to maintain a sufficient margin between its upstream prices and downstream prices such that it fails to cover downstream costs.
6. There must be at least the potential for anti-competitive effects in the downstream market or related markets as a consequence of the failure to maintain a sufficient margin.

In its investigation, Ofcom gathered substantial evidence from BT and other parties.

As a vertically integrated undertaking, BT Wholesale supplies both call origination/termination and Wholesale Calls. It operates at both upstream and downstream levels within the supply chain. The call origination and call termination inputs from the upstream market are indispensable to competition in the downstream wholesale end-to-end calls market as they form two of the three main inputs into wholesale end-to-end calls. Without call origination and termination on BT’s network it would not be possible to provide a meaningful national telephony service.

We therefore conducted a detailed analysis of BT’s financial performance in the downstream market so as to test whether the margin between BT’s upstream and downstream prices was sufficient to enable its downstream operations to trade profitably. We also gathered evidence as to the relevant markets and the impact of BT’s pricing conduct on competition.

Having considered this initial evidence, Ofcom reached the provisional conclusion that each of the six elements listed above could be demonstrated.

Accordingly, Ofcom sent BT a Statement of Objections on 20 December 2010 in accordance with section 31 of the Act and Rule 4 of the Competition Act 1998 (Office of Fair Trading’s Rules) Order 2004 (SI 2004/2751) (the “OFT Rules”). We identified two upstream markets on which BT is dominant - the wholesale market for call origination on fixed public narrowband networks in the UK (excluding the Hull area) and the wholesale market for fixed geographic call termination on BT’s network. At the downstream level, we defined the relevant market as being that for the supply of wholesale end-to-end calls to the merchant market in the UK (excluding the Hull area). We note that irrespective of the precise boundaries of the downstream market, BT is clearly active at the downstream level.

BT argued in its Response of 10 June 2011 that this market is too narrowly defined as other services provide direct or indirect competitive constraints. Ofcom considers it unnecessary to reach a final conclusion as to the precise boundaries of the downstream market, as we are not satisfied that the
1.22 In the Statement of Objections, we set out our analysis of BT’s financial performance for the period from March 2008 to April 2009. This analysis showed that BT’s Wholesale Calls product earned a negative margin in the period July 2008 to April 2009. Based on this analysis, we provisionally concluded that BT had therefore failed to maintain a sufficient margin between its upstream and downstream prices to cover its downstream costs, consistent with a margin squeeze.

1.23 Reflecting on the evidence before us at the time of preparing the Statement of Objections, our analysis then focussed on the potential for BT’s pricing conduct to give rise to anti-competitive effects.

1.24 We provisionally concluded that the negative margin had the potential to give rise to anti-competitive effects in various ways, e.g. by causing equally efficient competitors to lose market share or accept lower margins, raising the costs of competitors and reducing the longer term incentives to invest in the development of networks.

1.25 We therefore provisionally found that BT had carried out an abusive margin squeeze.

1.26 BT provided written representations in response to the Statement of Objections on 10 June 2011 (the “Response”) and oral representations at a meeting on 20 September 2011.

1.27 In its Response, BT rejected Ofcom’s provisional finding that it earned a negative margin consistent with a margin squeeze. BT also rejected Ofcom’s provisional finding that its pricing conduct affected competition or has the potential to do so in future. BT highlighted the number of major competitors in the market with substantial networks and access to regulated inputs that ensure competition is able to take place and which would prevent BT from raising prices in the downstream market above the competitive level. BT denied that there has been any exit from the market as a result of its conduct. BT therefore argued that Ofcom failed to demonstrate that its conduct has had any exclusionary effects, or had the potential to do so. BT did, however, recognise that there were errors in its own governance modelling and that there were aspects that could have been modelled more accurately.

1.28 Written representations in response to the Statement of Objections were also provided by C&W, Gamma and Verizon Business (“Verizon”) on 15 April 2011.

1.29 Following consideration of these representations, we made some adjustments to our financial analysis, as set out in Section 6. We also gathered additional evidence from BT and other CPs on market developments to further inform our assessment of whether there had been, or there was the potential for, anti-competitive effects as a result of BT’s pricing conduct.

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evidence (based on the narrower definition set out in the Statement of Objections) demonstrates that on the balance of probabilities, BT has abused its dominant position. Any widening of the market definition, as proposed by BT, would further reduce the potential for BT’s conduct to affect competition.
Ofcom’s findings

1.30 Having taken into account all the representations and further evidence, Ofcom remains of the view that BT failed to cover its downstream costs, consistent with a margin squeeze. In the period July 2008 to April 2009, BT earned a negative margin of £[>£] million on its Wholesale Calls product.6

1.31 Although we find evidence that BT earned negative margins on eight individual contracts over the period July 2008 to April 2009, its contract with [še Company 1] (“[še Contract 1]”) is the most significant in terms of contributing to its negative margins for the product as a whole. Absent this contract we find that BT’s margins on the Wholesale Calls product become sensitive to the time period modelled. Although they remain negative for the period July 2008 to April 2009, they become positive over the longer period ending December 2010. As such, absent [še Contract 1], the evidence of BT earning a negative margin on the Wholesale Calls product is sensitive to the time period modelled.

1.32 Turning to the effect of BT’s conduct, our assessment of all of the evidence suggests that competition in the market for the supply of wholesale end-to-end calls has not reduced in the more than four years since BT first earned negative margins on the Wholesale Calls product. While total volumes across the merchant market have declined since 2008, and this decline has not been evenly distributed across CPSOs, we have not seen evidence that this is a result of BT’s pricing conduct. The evidence suggests that there is strong competition for reseller contracts and that competitors are winning contracts from BT as well as each other. The loss of CPS volumes would not seem to have significantly affected the CPSOs’ cost base, nor their incentives to maintain and invest in core networks. We do not have evidence that BT’s pricing conduct gave rise to reputational effects and discouraged competitors from bidding for wholesale end-to-end call contracts.

1.33 The potential anti-competitive effects we set out in the Statement of Objections were based on the types of effect that we would typically expect to be associated with a firm earning negative margins across the downstream business as a whole. The failure of the potential anti-competitive effects to materialise in this case reflects the specific circumstances of the case. In particular, as noted above, as opposed to being driven by a generalised pattern of pricing below incremental cost, the negative margins observed for July 2008 to April 2009 were driven by BT’s aggressive pricing on [še Contract 1].

1.34 Absent [še Contract 1], the total product was contestable by an equally efficient operator (certainly in relation to the longer period to December 2010). For anti-competitive effects to have arisen in this case therefore, this would be most likely in relation to [še Contract 1]. On this basis, we considered the circumstances surrounding [še Contract 1] to understand why anti-competitive effects have not materialised, and the ongoing potential for such effects to arise.

1.35 Our analysis shows that the pricing of the contract has not led, and is unlikely to lead, to anti-competitive effects. For reasons set out in detail in Section 7, BT’s conduct did not risk excluding its competitors from winning the contract and BT’s ability to pursue an exclusionary strategy based on this contract is severely limited.

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6 The margin calculated is that over adjusted EEO costs, with costs measured on a LRIC basis.
1.36 In our view it is unlikely that the potential for anti-competitive effects arising from BT’s pricing behaviour remain because of the following factors taken together:

- we do not have sufficient evidence to demonstrate that anti-competitive effects (including the foreclosure of any of BT’s CPSO competitors) have materialised in the period since BT began earning negative margins on the Wholesale Calls product;
- [Contract 1] drives the negative margins and the specific characteristics of that contract suggest that anti-competitive effects are unlikely to be associated with it;
- absent [Contract 1], BT has earned positive margins on the total product in each month over the period July 2009 to December 2010 (as such this portfolio of contracts was contestable by an equally efficient operator); and
- we consider that the reasons we have found which explain why no actual effects have occurred (combined with the particular circumstances of [Contract 1]) also make it unlikely that the potential effects we identified in the Statement of Objections will occur in the future.

Conclusions

1.37 Having taken into account the representations and evidence before us, we are not satisfied that the evidence that actual or potential anti-competitive effects have arisen, or are likely to arise as a result of BT having earned a negative margin on its Wholesale Calls product is sufficiently strong for us to find that BT has acted unlawfully in infringing the Chapter II prohibition or Article 102 TFEU. Ofcom therefore concludes that it should issue a no grounds for action decision.

1.38 Ofcom notes that, although BT had a governance process in place during the relevant period, BT still earned negative margins on some individual contracts and on the product as a whole. We understand that BT has made amendments to its modelling and governance processes and we will be writing to BT to understand these changes and seek assurances that going forward robust processes and procedures are in place.

Structure of this Decision

1.39 The remainder of this document is organised as follows:

- **Section 2** sets out the details of the parties, the complaints and the legal framework for investigation;
- **Section 3** sets out technical, regulatory and commercial background to the supply of wholesale end-to-end calls in the UK;
- **Section 4** sets out Ofcom’s analysis and conclusions on the relevant economic markets for this case;
- **Section 5** sets out Ofcom’s analysis and conclusions on BT’s position in the relevant markets;
- **Section 6** sets out Ofcom’s analysis of the alleged abuse;
• Section 7 sets out Ofcom’s analysis of the potential for impact on competition of the alleged abuse; and

• Section 8 sets out Ofcom’s conclusions on the alleged abuse, and

• Section 9 sets out Ofcom’s views on BT’s governance process.
Section 2

The parties, the complaints and the relevant legal framework

2.1 In June 2008 we received separate complaints from THUS and Gamma alleging that BT was abusing a dominant position in breach of the Chapter II prohibition in the Competition Act and Article 102 TFEU (formerly Article 82 EC), in relation to the sale of wholesale end-to-end calls.

2.2 The complainants alleged that BT was competing unfairly when selling Wholesale Calls (BT’s own wholesale end-to-end voice calls product) by offering prices which constituted a margin squeeze and/or predatory pricing. The alleged margin squeeze was between the price BT Wholesale charged for upstream interconnection services to CPSOs (including THUS and Gamma) and BT Wholesale’s prices in the downstream supply of wholesale end-to-end calls to resellers.

2.3 This Section provides details of the parties involved in the complaints, a brief explanation of the relevant products, and summarises the allegations made in those complaints.

The undertakings

2.4 BT Group plc is the listed holding company for an integrated telecommunications group that provides voice and data services in the UK and elsewhere. Its principal activities include networked IT services, local, national and international telecommunications services, and higher value broadband and internet products and services. In the financial year to March 2011, BT had a UK turnover of £20,076 million.7

2.5 BT is an undertaking for the purposes of the Chapter II prohibition and Article 102 TFEU.

2.6 British Telecommunications plc is a wholly-owned subsidiary of BT and encompasses virtually all businesses and assets of the BT Group. It is made up of the four principal lines of business:

- **BT Global Services** is a provider of networked IT products, services and solutions, serving multi-site organisations worldwide;

- **BT Retail** serves SME and residential customers in the UK and is the prime channel to market for other BT businesses;

- **BT Wholesale** runs BT’s networks and provides network services and solutions to around 700 UK communications providers through a portfolio of broadband, voice and data, connectivity services and the interconnection of traffic across other service providers' networks and managed network solutions. BT Wholesale is the division within BT that markets BT’s Wholesale Calls product;

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• **Openreach** is responsible for the ‘first mile’ connecting communication providers’ customers to their local telephone exchange, giving them equal, open and economic access to the UK network.

2.7 Serving these four divisions are:

• **BT Design** which is responsible for the design and deployment of the platforms, systems and processes that support BT products and services; it is also responsible for network planning and the implementation of the 21CN platform; and

• **BT Operate** which manages BT’s IT and network infrastructure platforms as a single converged operation.

2.8 **THUS Ltd** prior to its acquisition by C&W in October 2008, was a UK-focused CP active in the supply to business customers of fixed line voice, data and internet services throughout the UK, using its own national network. THUS operated as a CPSO and considered itself to be a competitor to BT in the supply of downstream wholesale end-to-end calls to resellers. The network assets of THUS have been integrated into C&W’s network. THUS Limited became a stand-alone business within C&W, active as a provider of telecommunications services for business customers, including IP Voice, Traditional Voice, Data, Hosting and Internet services. C&W was itself acquired by Vodafone in July 2012. THUS’ turnover for the year ended 31 March 2008 amounted to around £575 million.

2.9 **Gamma Telecom Limited** is a wholly owned subsidiary of Gamma Telecom Holdings Limited which is a non-trading holding company. Gamma is a fixed line network operator with extensive switches and fibre optic cable backbone. Gamma uses its infrastructure to carry voice traffic nationally within the UK. It operates as a CPSO and considers itself as a competitor to BT in the sale of wholesale end-to-end calls to resellers. Another wholly owned subsidiary of Gamma Telecom Holdings Limited is Uniworld Limited, which operates as a calls reseller. Gamma’s turnover, for the year ended 31 December 2011 was £131.4 million.8

**What are wholesale end-to-end calls?**

2.10 Wholesale end-to-end calls are bundles of the elements of fixed line calls, which are purchased by resellers for onward sale to end users.

2.11 A phone call made from a fixed line, or narrowband phone, to any destination is made up of a number of different elements. Simply put, the call must first be originated from the caller’s telephone and connected to the telephone network via the closest Digital Local Exchange (“DLE”). It must then be carried over the telephone network to the relevant recipient network (which may be operated by the same or a different CP). Finally, it is then terminated on the recipient’s telephone. Each of these

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8 Gamma Telecom Holdings Limited Consolidated Financial Statements for the year ended 31 December 2011: [http://www.gamma.co.uk/media/337033/gamma%20telecom%20holdings%20limited%202011%20accounts.pdf](http://www.gamma.co.uk/media/337033/gamma%20telecom%20holdings%20limited%202011%20accounts.pdf).
elements of the call incurs a cost for the originating caller’s CP due to the ‘caller pays’ principle for voice calls.\(^9\)

2.12 Wholesale end-to-end calls are supplied to resellers either by CPSOs through CPS or by BT by way of its Wholesale Calls product. Each call consists of call origination, core network services and call termination and is conveyed over BT’s network and (to a greater or lesser extent depending on the CP involved) over the network of the CPSO. The call may be terminated on a different network (for example, mobile, cable etc).

2.13 CPS is a mechanism that allows end users who have a BT line to select alternative CPs to carry some or all of their calls, but without having to dial a prefix code. CPS routes the call from the end user’s telephone through BT’s DLE to the nearest point of interconnection with the relevant CPSO’s network. The call is then routed over the CPSO’s network to its point of handover for termination.

2.14 CPS has been a regulated product since 1 April 2000\(^{10}\) when BT and KCOM (in the Hull area) were required to provide CPS at the request of any CP customer on a cost-orientated basis and to provide relevant wholesale interconnection facilities to CPs on cost orientated terms.

2.15 Wholesale Calls is an end-to-end voice product offered by BT to resellers in competition with the provision of wholesale end-to-end calls by CPSOs to resellers. Calls are originated on and routed over BT’s network to the recipient, or the recipient’s network provider. The routing of these calls is therefore the same as for a call supplied to an end user by BT Retail.

2.16 The provision of wholesale end-to-end calls is one of the key enablers of competition at the retail level for the supply of fixed voice calls to business and residential consumers. Resellers who purchase wholesale end-to-end calls compete with BT Retail and other CPs in selling calls services to end users, often bundled with other related services. Some resellers also act as aggregators; purchasing wholesale end-to-end calls to sell on to other resellers.

2.17 BT and CPSOs supply wholesale end-to-end calls for external sale at the intermediate (or wholesale) level to resellers. They also self-supply wholesale end-to-

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\(^{9}\) The exception to this is Freefone calls, for which there is no charge. See paragraphs A4.20 to A4.23 in Annex 4 for details.

\(^{10}\) EC Directive 98/61/EC (‘the Amending Interconnection Directive’) came into force on 3 October 1998 and required Member States to ensure that CPS was made available from 1 January 2000 throughout the European Union by those providers with Significant Market Power (“SMP”) in the provision of fixed telephony.

In the UK, the Director General for Telecommunications determined that BT and KCOM were required to provide CPS. As BT’s switches could not be upgraded to enable switch-based CPS within the EC’s deadline, BT first made CPS available from 1 April 2000 in the form of interim CPS. Permanent CPS (which uses intelligent switching at the DLE to route calls to the CPSO’s network) was made available in phases from 12 December 2000 when CPS for either or both of international and national calls was made available. CPS for all calls (i.e. national, international, local and mobile) was introduced on 12 December 2001.

BT’s obligation to provide CPS has been reinforced through implementation of the ‘EC Communications Framework Directives’, the Communications Act 2003 and reflected in the consequent move from a licensing regime to a general authorisation regime.
end calls to their downstream retail divisions. Finally, they also make sales of wholesale end-to-end calls to each other.11

The complaints

The THUS complaint

2.18 On 5 June 2008, THUS submitted a formal complaint to Ofcom. In its complaint, THUS alleged that BT was abusing a dominant position in breach of the Chapter II prohibition in the Competition Act and Article 102 TFEU (formerly Article 82 EC). Specifically, THUS alleged that BT was competing unfairly when selling Wholesale Calls (BT’s own wholesale end-to-end voice calls product) by offering prices which constituted a margin squeeze and/or predatory pricing.

2.19 According to the THUS complaint, THUS was a major provider to resellers of CPS-based wholesale end-to-end calls. In the year to 31 March 2008, THUS derived revenue of around £[3<] million from these calls, approximately [3< 16.5-27.5%] of its total turnover. In order to compete in this market, where BT was also a competitor, THUS purchased interconnection services from BT Wholesale.

2.20 THUS alleged that since 1 April 2005, BT’s prices to resellers for Wholesale Calls had been cut by at least 40%, but that BT’s upstream prices (to competitors) for interconnection had been cut by only around 10%. Referring to Ofcom’s findings in the wholesale narrowband market review12 and the fixed geographic call termination market review,13 THUS identified the main relevant upstream markets as being those for:

- Fixed narrowband call origination in the UK excluding Hull;
- Local tandem conveyance in the UK excluding Hull;
- Interconnect Extension Circuits (“IECs”) and Inter-Building Circuits (“IBCs”);
- Fixed-geographic call termination services on the BT network.14

These markets are discussed in greater detail in Section 4 below.

2.21 According to THUS’ complaint, further grounds for suspecting a margin squeeze were:

11 A small proportion of wholesale end-to-end calls are supplied directly to large companies that are not CPs, for their own consumption.


14 THUS also made reference to the market for non-geographic call termination services that Ofcom defined in its draft NCCN500 decision (see http://stakeholders.ofcom.org.uk/binaries/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw_823/NCCN_500.pdf).
• a reduction in BT’s margin of around 25 percentage points since 1 April 2005;

• that the Wholesale Calls’ tariffs BT was offering for calls to 0845 and 0870 numbers were around 15% less than the upstream interconnect costs;

• dramatic growth in BT’s Wholesale Calls revenue from a very low base in 2005 to around £80 million in the financial year 2007/08 and prospectively £300 million in the financial year 2008/09;

• BT undercutting THUS in its [✓ Company 2] contract bid (“[✓ Contract 2]”\textsuperscript{15}) by “double digit millions”, despite THUS’ bid being only borderline profitable; and

• THUS losing almost half of its ‘volume partner’ reseller business in the period January to May 2008, in many cases explicitly on price.

2.22 THUS had also analysed [✓ the information it had on pricing and profitability, including its understanding of BT Wholesale’s offer].\textsuperscript{16}

2.23 THUS referred to our Gamma Telecom decision published in June 2005 in respect of an earlier investigation under the Act into an alleged margin squeeze by BT in respect of its pricing for Wholesale Calls.\textsuperscript{17} THUS stated that it had applied the cost analysis tests used by Ofcom in the Gamma Telecom decision\textsuperscript{18} on what in its view was a representative basket of end-to-end calls (rather than examining each call type separately as had been done in Gamma Telecom). The results of THUS’ modelling suggested that there was a margin squeeze.

2.24 THUS highlighted its expectation that [✓ Company 2] would migrate its customer base to BT Wholesale within the next few months and that it expected to lose further customers to BT. THUS stated that this presented a real and imminent risk of THUS (and other wholesale calls’ providers) withdrawing from the market. THUS asserted that the results of its analysis suggested that BT’s margins were negative under every combination of test.

2.25 THUS alleged that it had lost a number of customer contracts to BT as a result of the margin squeeze. It identified the following harm arising from BT’s alleged pricing behaviour:

\textsuperscript{15} [✓].

\textsuperscript{16} THUS’ complaint stated that THUS had held various, abortive, discussions with BT Wholesale over the past two years concerning proposals by BT Wholesale to ‘outsource’ THUS’ switched network. THUS stated that these proposals included THUS purchasing wholesale end-to-end calls from BT.

\textsuperscript{17} Ofcom decision of 13 June 2005 into the case ‘Complaint from Gamma Telecom Limited against BT Wholesale about reduced rates for Wholesale Calls from 1 December 2004’. See http://stakeholders.ofcom.org.uk/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw_802/. A brief summary of the investigation is set out in paragraphs 3.29 to 3.31 below.

\textsuperscript{18} In the Gamma Telecom investigation, Ofcom applied four different tests, each making different assumptions regarding the costs that would be incurred in competing with BT. We analysed BT’s costs on both the EEO and adjusted EEO basis, calculating the relevant margin on both an incremental contract basis and on a ‘total product’ cost basis. For further details see: http://stakeholders.ofcom.org.uk/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw_802/.
it was no longer possible for CPSOs to compete profitably;

if BT’s behaviour went unchecked, a number of large wholesale CPSOs could be expected to exit the market, reinforcing BT’s already dominant market share and resulting in a significant lessening of competition;

the effect of BT’s conduct would be to foreclose the market for the provision of wholesale end-to-end calls to resellers;

this would cause significant long-term detriment to consumers as CPSOs such as THUS had been in the forefront of introducing innovative products. With the anticipated imminent roll-out of next generation voice services based on BT’s 21CN\(^{19}\) programme, THUS considered that CPSOs would be likely to be at the forefront of innovations to exploit the much richer functionality available from IP-based products;

if these players exited the market, SME and residential consumers would be deprived of the benefits of increased competition, including greater levels of innovation, investment and lower prices.

The Gamma complaint

2.26 On 16 June 2008, Gamma submitted a formal complaint. Like THUS, Gamma also alleged that BT Wholesale was operating a margin squeeze in breach of the Chapter II prohibition in the Act. Gamma stated that the complaint related to the same market as in Gamma’s 2004 complaint which had led to the Gamma Telecom decision. As then, the alleged margin squeeze was between the price BT Wholesale charged for upstream interconnection services and BT Wholesale’s prices in the downstream supply of wholesale end-to-end calls. Gamma alleged that BT’s pricing left insufficient margin for Gamma to be able to compete effectively.

2.27 Gamma stated that:

(i) As a CPSO, it purchased interconnection products from BT Wholesale to compete with BT Wholesale at the network level in the provision of wholesale end-to-end voice calls services. Like THUS, Gamma also identified the markets for fixed narrowband call origination, local-tandem conveyance and fixed geographic call termination as being the relevant upstream markets. Gamma additionally identified the market for inter-tandem conveyance in the UK (excluding the Hull area) as being relevant.\(^{20}\)

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\(^{19}\) 21CN is BT’s ‘21\(^{st}\) Century’ next generation network, intended to replace most of BT’s existing core platforms with a single multi-service network comprising of high capacity routers connected by an advanced optical network. Other CPs have already deployed, or are planning to deploy, their own NGNs. BT had envisaged that a substantial volume of narrowband (PSTN) traffic would have migrated onto 21CN and carried over IP (e.g. as VoIP) by 2009. However deployment of the project in relation to voice services has not occurred (except for a series of customer trials) so that migration has not yet materialised.

\(^{20}\) The inter-tandem conveyance market was also defined by Ofcom in the wholesale narrowband market review: see http://stakeholders.ofcom.org.uk/binaries/consultations/750148/fixednarrowbandstatement.pdf
(ii) It had re-performed the cost analysis tests used by Ofcom in the Gamma Telecom decision on the rates BT offered to Gamma in October 2007. According to Gamma’s analysis, even at the “BT’s published rates” BT was not making a positive margin on the calls.

(iii) BT Wholesale typically offered a number of other commercial inducements to resellers. BT Wholesale was using profits from other areas of the business to enable it to reduce prices in the wholesale end-to-end calls market.

(iv) The reduction in wholesale calls prices offered by BT Wholesale to resellers, without an equivalent reduction in the interconnect input, was discriminatory, unless some objective rationale could be put forward for it and the difference between wholesale and input prices was proportionate.

(v) It was becoming impossible for it to compete and it was looking for ways to exit the market or outsource its service, for example to BT.

2.28 Gamma identified the following harm arising from BT Wholesale’s alleged pricing behaviour:

- it seemed likely that one or more CPs would either withdraw from the market (thereby reducing competition) or close down its network;
- it was crucial for future competition that CPs with their own networks were not squeezed out prior to the implementation of BT’s 21CN programme, so as to avoid BT being able to create a new monopoly through 21CN;
- were Gamma to be driven out of the market, the result was likely to be that resellers would have less responsive and focussed suppliers to service their needs. Choice and competition would significantly reduce because over time, competition at the infrastructure level would be eliminated. The number of CPSOs providing wholesale services to the reseller market had already reduced significantly; and
- SME customers would suffer price rises and the range, quality and speed of arrival on the market of new services would decline. This would be felt most acutely by small businesses.

Legal framework for the investigation

2.29 The complaints from THUS and Gamma were considered under our procedures for handling competition complaints, which meant that before deciding on whether to accept the complaints, we provided BT with an opportunity to comment on the allegations made against it. BT stated in its response of 17 June 2008 that it had

21 These tests are discussed in Section 6 below.

22 Gamma had considered closing down its network and becoming a reseller of BT’s Wholesale Calls product – paragraph 3.82 refers.

23 The 21CN programme is BT’s network transformation project. BT intends to move from a PSTN network to an IP-based system.

24 Ofcom Guidelines for the handling of competition complaints, and complaints and disputes about breaches of conditions imposed under the EU Directives http://stakeholders.ofcom.org.uk/binaries/enforcement/competition-bulletins/other/guidelines.pdf. See
been applying the principles of the 2005 Gamma Telecom decision to its pricing and that its pricing had had no adverse effect on competition in the wholesale calls market.

2.30 Following the completion of our initial enquiry phase, we considered that there were reasonable grounds for suspecting that the Chapter II prohibition had been infringed. On 28 July 2008 we wrote to the Office of Fair Trading (“OFT”) seeking the OFT’s agreement that Ofcom was the best placed competent person to investigate the case and that it had jurisdiction under the Act. On 30 July 2008, the OFT confirmed, pursuant to regulation 4(2) of the Competition Act 1998 (Concurrency) Regulations 2004, that it agreed that Ofcom would be the competent person best placed to deal with the investigation in order to determine whether BT was acting in a manner which may amount to a breach of the Chapter I and/or Chapter II prohibitions in the Act and/or Article 101 and/or Article 102 TFEU.

2.31 On 1 August 2008, we wrote to THUS, Gamma and BT to inform them that we had opened an investigation into the complaints. We also published a Competition Bulletin entry on our website.25

Article 102 TFEU and the Chapter II prohibition

2.32 As noted above, the complaints from THUS and Gamma alleged that BT was abusing a dominant position in breach of the Chapter II prohibition in the Act and Article 102 TFEU (formerly Article 82 EC) by carrying out a margin squeeze.

2.33 The Chapter II prohibition, set out in section 18 of the Act, provides that “any conduct on the part of one or more undertakings which amounts to the abuse of a dominant position in a market is prohibited if it may affect trade within the United Kingdom”.

2.34 Article 102 TFEU is similarly worded, except that it prohibits the abuse of a dominant position where it affects trade between Member States:

“Any abuse by one or more undertakings of a dominant position within the internal market or in a substantial part of it shall be prohibited as incompatible with the internal market in so far as it may affect trade between Member States.

Such abuse may, in particular, consist in:

(a) directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions;

(b) limiting production, markets or technical development to the prejudice of consumers;

(c) applying dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage;


25 http://stakeholders.ofcom.org.uk/enforcement/competition-bulletins/open-cases/all-open-cases/cw_988/
(d) making the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts.” [Emphasis added]

Nature of the alleged abuse

2.35 The allegations made by THUS and Gamma concern margin squeeze. In the Deutsche Telekom case, the ECJ held that:

“margin squeeze is capable, in itself, of constituting an abuse within the meaning of [Article 102] in view of the exclusionary effect that it can create for competitors who are at least as efficient as the appellant.”

2.36 Margin squeeze has been recognised as an independent category of abuse by the European Commission, the General Court, the European Court of Justice, the OFT, the Competition Appeal Tribunal and the Court of Appeal. The European Commission and the OFT have issued guidance on assessing margin squeeze cases. The test for margin squeeze as formulated in the case-law is:

- First, the abusive undertaking must be vertically integrated, i.e. it must operate in related upstream and downstream markets, its upstream operations providing an input both to its competitors and to its own operations in the downstream market.

- Second, an input from the upstream market must be used to participate in the downstream market – an abusive margin squeeze may occur in

26 Case C-280/08 Deutsche Telekom AG v Commission 14 October 2010, at paragraph 183.


30 See for example, BSkyB OFT decision 17 December 2002, No CA98/20/2002; Genzyme OFT decision 27 March 2003, No CA98/3/03.


32 DwrCymru Cyfyngedig v Albion Water [2008] EWCA Civ 536.

circumstances in which a product is not indispensible for supply to the downstream market.\textsuperscript{34}

- Third, the abusive undertaking must enjoy a dominant position in the upstream market.\textsuperscript{35}

- Fourth, the undertaking must be active in the downstream market.

- Fifth, the undertaking must fail to maintain a sufficient margin between its upstream and downstream prices such that it fails to cover downstream costs.

- Sixth, there must be at least the potential for anti-competitive effects in the downstream market as a consequence of the failure to maintain a sufficient margin.\textsuperscript{36}

2.37 As a general matter, the case-law applying Article 102 TFEU and the Chapter II prohibition also makes clear that an undertaking may be able to advance an \textit{objective}

\textsuperscript{34} Albion Water (CA) paragraph 88 – “the need for access to an input from the upstream market in order to operate in the downstream market”; OFT Guidance 417 Competition Act 1998 The application in the telecommunications sector, February 2000, paragraph 7.26; OFT 414a Assessment of Conduct Draft Guidance, April 2004, paragraph 6.1; Guidance on the Commission’s Enforcement Priorities in applying Article 82 to abusive exclusionary conduct by dominant undertakings OJ C 45/7, 24.2.09, paragraphs 80, 82. See also Case C-52/09 Konkurrensverket v TeliaSonera Sverige AB, paragraph 72, case T-336/07 Telefónica v Commission [2012] ECR 00000 (29 March 2012); and Case T-398/07 Spain v Commission, judgment of 29 March 2012, paragraph 76.

\textsuperscript{35} In Napier Brown/British Sugar, British Sugar was found to be dominant in the upstream market of white granulated sugar for both retail and industrial sale in Great Britain (paragraphs 50-60). The Commission found that British Sugar was dominant in both the upstream (industrial sugar) and downstream (retail sugar) markets, and that the margin between the prices British Sugar charged for industrial sugar and retail sugar was not enough to enable a reasonably efficient competitor to remain in the downstream retail sugar market, since the margin did not cover British Sugar’s own repackaging and selling costs. The Commission found that: “The maintaining, by a dominant company, which is dominant in the markets for both a raw material and a corresponding derived product, of a margin between the price which it charges for a raw material to the companies which compete with the dominant company in the production of the derived product and the price which it charges for the derived product, which is insufficient to reflect that dominant company’s own costs of transformation … with the result that competition in the derived product is restricted, is an abuse of a dominant position.” In National Carbonising Company, the Commission, while rejecting the complaint that was made, accepted that margin squeeze could amount to an abuse at paragraph 226: “an undertaking which is in a dominant position as regards the production of a raw material… and therefore able to control its price to independent manufacturers of derivatives… and which is itself producing the same derivatives in competition with these manufacturers, may abuse its dominant position if it acts in such a way as to eliminate the competition from these manufacturers in the market for derivatives. From this general principle the…Commission deduced that [the dominant undertaking] may have an obligation to arrange its prices so as to allow a reasonably efficient manufacturer of the derivatives a margin sufficient to enable it to survive in the long term.” In Deutsche Telekom, Deutsche Telekom was found to be dominant in the market for access to local fixed networks at the wholesale level (see paragraphs 96 -101) (decision upheld by the ECJ). In Genzyme, the abusive undertaking was found by the OFT to be dominant upstream and this was upheld by the Tribunal on appeal (at paragraphs 285-286).

\textsuperscript{36} Deutsche Telekom, ECJ Judgment at paragraphs 252 to 255. TeliaSonera at paragraphs 60 to 66; Spain v Commission at paragraphs 89-93.
justification for conduct that would otherwise be considered abusive.\textsuperscript{37} There is no
exhaustive list of justifications set down in the case-law. Whether an undertaking’s
conduct is objectively justified will depend on the circumstances of the case. A key
consideration, however, is whether the conduct is/was necessary and proportionate
to achieving its claimed aim. The burden of proof for demonstrating that conduct is
objectively justifiable lies with the undertaking under investigation.

2.38 The European Court of Justice has defined a dominant position as:

\textit{“…a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by giving it the power to behave to an appreciable extent independently of its competitors, customers and ultimately of consumers.”}\textsuperscript{38}

2.39 For the purposes of the Chapter II prohibition and/or Article 102 TFEU, dominance is
assessed within a relevant market.\textsuperscript{39} Ofcom has therefore considered in Section 4
the relevant markets in this case, before considering the extent to which BT may be
dominant in one or other of those markets in Section 5.

2.40 As set out in more detail in Sections 6 and 7, in considering the extent to which an
abuse of a dominant position may have occurred, Ofcom has assessed whether BT
has engaged in a margin squeeze which might have the effect of foreclosing
competition on a downstream market. Ofcom’s analysis first sets out the test it has
employed in determining whether or not a margin squeeze has occurred.

2.41 In considering whether BT has engaged in a margin squeeze contrary to the Chapter
II prohibition and Article 102, Ofcom has considered whether the quality of evidence
before it is sufficient to meet the standard required to support an infringement finding,
that is the civil standard of proof, that on the balance of probabilities the undertaking
breached competition law.\textsuperscript{40}

\textsuperscript{37} For example, see Centre Belge d’Etudes de Marche Telemarketing v CLT ([1985] ECR 3261,
[1986] 2 CMLR 558 paragraph 26) where the ECJ held that an undertaking would be guilty of an
abuse where there was no objective necessity for such behaviour; Genzyme where the Tribunal said
that at the stage of the decision, the OFT is bound to consider the issue of objective justification
(paragraph 577); Case no. 1044/2/1/04 Burgess v OFT [2005] CAT 25 where the Tribunal concluded
in light of the case law (Case 27/76 United Brands [1978] ECR 207; Advocate General Jacobs opinion
in Case C-7/97 Oscar Bronner GmbH v Mediaprint [1998] ECR I-7791) that an abuse of a dominant
position may occur where an undertaking without objective justification refuses to supply an
established existing customer in certain circumstances (paragraph 43); and Case C-209/10 Post
Danmark AS v Konkurrenceradet, judgment of 27 March 2012, at paragraph 42.


\textsuperscript{39} OFT 2004 competition law guideline, Market Definition
notice on the definition of the relevant market for the purposes of Community competition law, OJ

\textsuperscript{40} See Napp Pharmaceutical Holdings Limited and Subsidiaries v Director General of Fair Trading
paragraph 16 and Re B [2008] UKHL 35 per Lord Hoffmann at paragraph 13.
2.42 In JJB Sports the CAT held that:

“In these circumstances, in applying the balance of probabilities in a case involving penalties, the Tribunal must be satisfied that the quality and weight of the evidence is sufficiently strong to overcome the presumption that the party in question has not engaged in unlawful conduct. For example, if in a borderline case the decision is finely balanced and the Tribunal finds itself to-ing and fro-ing, the correct analysis is that the evidence is not sufficiently strong to satisfy the Tribunal on the balance of probabilities that the infringement occurred.”  

41

2.43 In the event that an infringement is established, Ofcom has a number of powers to remedy the infringement, including a power under section 36 of the Act to impose financial penalties on BT of up to 10% of turnover for the preceding year. Ofcom’s conclusions are set out in Section 8.

Information gathered during the investigation

2.44 In order to investigate the THUS and Gamma allegations, we gathered evidence from a number of parties. We obtained information from BT and third parties in connection with our investigation via:

- Formal Notices under section 26 of the Act;
- Follow-up questions to responses to section 26 Notices;
- Informal requests for information; and
- A survey of resellers.

2.45 In addition, BT and third parties voluntarily provided information concerning the investigation.

Evidence gathered from BT

2.46 During the initial period of our investigation, we sent BT nine section 26 Notices, as set out below:

- 1st section 26 Notice sent on 26 August 2008.
- 2nd section 26 Notice sent on 15 October 2008.
- 3rd section 26 Notice sent on 24 October 2008.


42 Section 26 of the Act provides Ofcom with the power to require the provision of specified information or documents that relate to any matter relevant to an investigation under section 25 of the Act (i.e. an investigation into alleged breaches of the Chapter I or Chapter II prohibitions).
• 6th section 26 Notice sent on 19 December 2008.
• 7th section 26 Notice sent on 10 June 2009.
• 8th section 26 Notice sent on 1 July 2009.
• 9th section 26 Notice sent on 17 August 2010.

2.47 We asked BT for a number of clarifications to BT’s responses to Notices under section 26 of the Act.

2.48 We discussed with BT various aspects of our investigation, either face to face or by telephone, on a number of occasions throughout the investigation.

2.49 In addition, BT made a number of other submissions that we have taken into account in our decision. BT on its own initiative provided written submissions to us to clarify and correct information that BT had provided earlier in response to section 26 Notices and also on its views on the merits of the investigation.

2.50 After assessing the initial data provided by BT (and other CPs), we reached a provisional conclusion as to whether BT had earned negative margins. Given the significant and detailed financial assessment we had conducted based upon a large volume of data received from BT, we considered it appropriate to ensure the accuracy of that data. We therefore put this data back to BT in August 2010 to ensure that the data was accurate and up-to-date and that there was no additional data which might be relevant to our assessment. BT’s comments on the accuracy or otherwise of the data on which the assessment was based were considered and reflected in the Statement of Objections where appropriate. The comments made by BT led to some changes to the financial assessment, however, they did not affect our provisional conclusion that BT was engaging in a margin squeeze. We therefore issued BT with a Statement of Objections on 20 December 2010.

2.51 BT requested and was given access to the file in accordance with the Competition Act 1998 (Office of Fair Trading’s Rules) Order 2004.

2.52 On 9 June 2011 BT provided a detailed response to the Statement of Objections, refuting Ofcom’s claims that it had contravened the Chapter II prohibition or Article 102 TFEU, and providing additional evidence. BT additionally made oral representations in relation to the Statement of Objections at a meeting held on 20 September 2011. BT’s comments are discussed in greater detail in Sections 4 to 7 of this document and have, where appropriate, been taken into consideration by Ofcom in reaching its decision.

2.53 In light of BT’s response to the Statement of Objections, we sought additional information from BT using our powers under section 26 of the Act:

• 10th section 26 notice sent on 2 November 2011.
• 11th section 26 notice sent on 19 December 2011.

2.54 On 23 March 2012, BT on its own initiative provided further information and analysis carried out by CRA, in relation to credit notes that had not previously been disclosed to Ofcom. Our initial analysis suggested that this would not have a material impact on our overall conclusions, and given our overall finding on anti-competitive effects we
have not considered it necessary to gather further information to carry out a full analysis (see paragraph 6.333 below).

Evidence gathered from C&W/THUS

2.55 Prior to issuing the Statement of Objections, we sent C&W/THUS three section 26 Notices:

- 1\textsuperscript{st} section 26 Notice sent to THUS on 16 December 2008.\textsuperscript{43}
- 2\textsuperscript{nd} section 26 Notice sent on 10 June 2009.
- 3\textsuperscript{rd} section 26 Notice sent on 7 August 2009.

2.56 As a complainant, C&W/THUS was provided with a non-confidential version of the Statement of Objections and given an opportunity to comment. C&W/THUS provided written representations on 15 April 2011.

2.57 Following the Statement of Objections, we sent C&W a 4\textsuperscript{th} section 26 notice on 2 November 2011.

Evidence gathered from Gamma

2.58 Prior to issuing the Statement of Objections, we sent Gamma three section 26 Notices:

- 1\textsuperscript{st} section 26 Notice sent on 8 December 2008.
- 2\textsuperscript{nd} section 26 Notice sent on 10 June 2009.
- 3\textsuperscript{rd} section 26 Notice sent on 7 August 2009.

2.59 As a complainant, Gamma was also provided with a non-confidential version of the Statement of Objections and given an opportunity to comment. Gamma provided written representations on 15 April 2011.

2.60 Following the Statement of Objections, we sent Gamma a 4\textsuperscript{th} section 26 notice on 2 November 2011.

Evidence gathered from third parties

2.61 Prior to issuing the Statement of Objections, we gathered information from third parties as follows:

- On 10 June 2009 we sent an identical section 26 Notice as that sent to BT, C&W/THUS and Gamma on that date to the following CPSOs: Opal; Virgin Media, Verizon, Telstra, KCOM, COLT, Swiftnet, Global Crossing and Spitfire.
- On 7 August 2009, we sent section 26 Notices to COLT, Opal, Global Crossing, KCOM, Swiftnet, Telstra, Verizon and Virgin.

\textsuperscript{43} This Notice was sent prior to the completion of the acquisition of THUS by C&W.
2.62 [çek] requested a copy of the non-confidential version of the statement so that they could consider whether to provide comments. Verizon provided written representations on 15 April 2011. [çek] chose not to provide written representations in response to the Statement of Objections.

2.63 Following the Statement of Objections, we sent section 26 notices to [çek] and Verizon on 2 November 2011.

**Ofcom survey of SME reseller customers**

2.64 We commissioned Prodata Partners Ltd to conduct research during July-September 2009 among UK calls resellers as identified from responses to the 10 June 2009 section 26 Notices sent to BT and CPSOs. The aim of the research was, as part of the analysis of theories of harm, to understand better the impact of any reduction in competition between BT Wholesale and CPSOs in the supply of wholesale calls. This involved conducting primary qualitative and quantitative research among resellers to understand:

- the customers they sell to;
- whether any type of customer might be more adversely affected by a permanent loss of competition in the upstream supply of wholesale calls; and
- the relative impact of factors such as price, value-added products and quality of service, on resellers’ choice of supplier.

A copy of the report we have produced summarising this research (the “Prodata Report”) is at Annex 2 to this document. We note that BT raised a number of concerns about the way in which this survey was conducted and the weight which can be attached to its results (see paragraphs 4.27 to 4.29 for more detail).

**Responses to our draft final decision following the investigation**

2.65 Following our assessment of all the evidence, we drafted a document setting out our final decision. We shared our findings with BT, the complainants and interested third parties by providing them with a draft decision on 18 December 2012. We received responses from BT, C&W, Gamma and Verizon on 31 January 2013.

2.66 C&W, Gamma and Verizon took issue with the proposed conclusions in our draft final decision, and raised a number of points in their responses. The points they raised concerned the alleged effects of BT’s conduct, and so we consider them in Section 7 where appropriate.44

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44 C&W Response to Draft Final Decision; Gamma Response to Draft Final Decision and Verizon Response to Draft Final Decision (all dated 31 January 2013).
Section 3

Background on the provision of wholesale end-to-end calls in the UK

3.1 As summarised in Section 1, we have investigated allegations made by THUS and Gamma that BT has abused a dominant position by operating a margin squeeze in the provision of wholesale end-to-end calls.

3.2 Before assessing these complaints in detail, we set out the following:

(i) detail of the relevant products that were the subject of our investigation and the regulatory background relating to wholesale end-to-end calls;

(ii) the factual background in relation to contracts won by BT; and

(iii) trends in the supply of wholesale end-to-end calls.

The relevant product and regulatory background

Introduction

3.3 As set out in Section 2, wholesale end-to-end calls are bundles of the elements of fixed line calls, which are purchased by resellers for onward sale to end users.

3.4 Wholesale end-to-end calls are supplied to resellers either by CPSOs through CPS or by BT by way of its Wholesale Calls product. Each call consists of call origination, core network services and call termination and is conveyed over BT’s network and (to a greater or lesser extent depending on the CP involved) over the network of the CPSO. The call may be terminated on a different network (for example, mobile, cable etc).

3.5 The provision of wholesale end-to-end calls is one of the key enablers of competition at the retail level for the supply of fixed voice calls to business and residential consumers. Resellers who purchase wholesale end-to-end calls compete with BT Retail and other CPs in selling calls services to end users, often bundled with other related services. Some resellers also act as aggregators; purchasing wholesale end-to-end calls to sell on to other resellers.

3.6 Competition in the provision of wholesale end-to-end calls only really began to develop from 2000, with the introduction of CPS.

The introduction of CPS and LLU

3.7 Prior to April 2000, there were two sources of competition to BT\(^45\) in the provision of fixed voice calls at the retail level:

\(^{45}\) Kingston Communications Ltd (part of the KCOM Group plc) (“KCOM”) has historically enjoyed a network monopoly in the Kingston-upon-Hull area, however this investigation focuses on the behaviour of BT, whose network covers the rest of the UK.
• CPs who used Indirect Access (“IA”), a regulated origination product which is purchased by CPs from BT. It enables the end user with a BT line to select an alternative CP to supply its calls by dialling a short code before the number they wish to call.

• CPs who built their own local access networks so they could offer end user customers a telephone line independent of BT’s network (for example, the cable network built by a number of regional operators and now owned by Virgin Media).

3.8 CPS was introduced after IA and is another mechanism that allows end users who have a BT line to select alternative CPs to carry some or all of their calls, but without having to dial a prefix code.\(^\text{46}\) CPS routes the call from the end user’s telephone through BT’s DLE to the nearest point of interconnection with the relevant CPSO’s network. The call is then routed over the CPSO’s network to its point of handover for termination.

3.9 The regulatory aim of IA, and then CPS, has been to stimulate competition at the retail level in the absence of alternative local access networks that can compete with the geographic footprint of BT’s network.

3.10 CPS has been a regulated product since 1 April 2000\(^\text{47}\) when BT and KCOM (in the Hull area) were required to provide CPS at the request of any CP customer on a cost-orientated basis and to provide relevant wholesale interconnection facilities to CPs on cost orientated terms. A number of BT’s charges, including those for call origination and call termination, are also the subject of charge controls.

3.11 The prices of BT’s regulated products such as CPS are published on its website, in a document called the Carrier Price List (“CPL”).\(^\text{48}\)

\(^{46}\) When CPS was first introduced, customers could subscribe to the services of one or more CPS service provider and choose the type of calls (e.g. national calls, international calls or all calls) to be routed through the network of a CPSO. Today, however, most CPS customers are on an ‘all calls’ package and many CPS service providers do not offer any other option.

\(^{47}\) EC Directive 98/61/EC (‘the Amending Interconnection Directive’) came into force on 3 October 1998 and required Member States to ensure that CPS was made available from 1 January 2000 throughout the European Union by those providers with Significant Market Power (“SMP”) in the provision of fixed telephony.

In the UK, the Director General for Telecommunications determined that BT and KCOM were required to provide CPS. As BT’s switches could not be upgraded to enable switch-based CPS within the EC’s deadline, BT first made CPS available from 1 April 2000 in the form of interim CPS. Permanent CPS (which uses intelligent switching at the DLE to route calls to the CPSO’s network) was made available in phases from 12 December 2000 when CPS for either or both of international and national calls was made available. CPS for all calls (i.e. national, international, local and mobile) was introduced on 12 December 2001.

BT’s obligation to provide CPS has been reinforced through implementation of the ‘EC Communications Framework Directives’, the Communications Act 2003 and reflected in the consequent move from a licensing regime to a general authorisation regime.

3.12 A simplified illustration of how CPS-based calls are transited compared to a call routed across BT’s network in its entirety (which would apply to calls made using BT’s Wholesale Calls product) is set out in Figure 3.1 below.

Figure 3.1: Simplified diagram of CPS and BT’s calls

Source: Ofcom / BT
Note: This diagram assumes that the receiving end user is connected to the BT network and that the CPSO has interconnection at the relevant BT DLEs.

3.13 Our 2009 statement on the fixed narrowband services wholesale markets\(^49\) confirmed that BT’s CPS (and IA) obligations should be retained.\(^50\) BT and KCOM are required to continue to provide CPS on request and to ensure that regulated charges are set according to a forward looking long run incremental cost model.

3.14 As a complement to CPS and other wholesale means of delivering retail products, in 2002, BT was required to provide Wholesale Line Rental (“WLR”). This remedy was introduced with the aim of enhancing competition to BT at the retail level, where BT Retail was the dominant supplier in narrowband calls and line rental. WLR allows CPs to lease exchange lines on wholesale terms and decide how best to route the customer’s calls. WLR can be used in conjunction with both CPS-based wholesale


\(^{50}\) Our review of fixed narrowband services led us to conclude that the existence of CPS as a wholesale remedy has facilitated competition in the retail environment and that it is necessary for Ofcom to ensure that CPS continues to be available. It is the existence of these underlying wholesale remedies that led to the finding that BT no longer has SMP in the retail market (see http://stakeholders.ofcom.org.uk/consultations/retail_markets/statement/). As we found BT to hold SMP in call origination, we considered it proportionate to require BT to continue to supply CPS on regulated terms. This is consistent with the obligations placed on Ofcom by the Universal Service Directive. We note that the Universal Services Directive was subsequently amended by Directive 2009/136/EC.
calls and BT’s Wholesale Calls product to allow CPs to offer line rental and calls via the BT network. The end user then receives one bill for their telephony services, rather than one bill from the calls provider and another from BT for line rental.

The structure of CPS

3.15 By definition, all end-to-end calls made over a BT line originate on BT’s network and therefore use BT call origination. As such, BT call origination is a necessary input for all CPS calls which originate on a BT line.

3.16 As shown in Figure 3.1 above, a CPS-based call is routed over BT’s network until the nearest point of interconnection with the CPSO, where it is handed over to the CPSO’s network (usually at the DLE closest to the originating caller). If the call is to a customer on BT’s network,\textsuperscript{51} then the CPSO routes the call through its network to the point of interconnection with BT that is closest to the destination of the call and BT routes the call over the final leg to the end user.\textsuperscript{52}

3.17 CPSOs wishing to supply wholesale end-to-end calls through CPS therefore need to purchase a number of upstream inputs from BT Wholesale in order to provide an end-to-end call service to resellers. Specifically, CPSOs must purchase interconnection services from BT Wholesale, including call origination, call termination and interconnection circuits. As explained above, these interconnection services are supplied on regulated terms.

3.18 Resellers purchasing wholesale end-to-end calls as a product for onward sale from BT or from CPSOs add the necessary elements (e.g. billing, call barring, customer support) or bundle the calls with other products to transform the wholesale end-to-end calls product into a retail product supplied to their end users.

Local Loop Unbundling

3.19 In addition to the IA, CPS and WLR wholesale remedies, BT is obliged to give CPs access to the copper wire in its local exchanges (this remedy is known as ‘local loop unbundling’ (or ‘LLU’)).\textsuperscript{53} The aim of LLU is to allow infrastructure competition to develop as far as is economically viable in the supply of narrowband telephony and broadband services. LLU enables CPs to install and operate their own equipment in

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\textsuperscript{51} CPSOs also interconnect with other CPs’ networks for termination and with BT for transit to those networks where the CPSO does not have a direct interconnection.

\textsuperscript{52} As explained in more detail at paragraphs A4.57 to A4.62 in Annex 4, Ofcom introduced in 2004 a remedy, known as ‘CPS SAD’ (CPS Same or Adjacent DLE) to address the higher costs faced by CPSOs due to differences between their network architectures and that of BT, which resulted in higher local tandem transit costs when compared with BT’s costs. See paragraph 4.12 of ‘Addressing the Local Call Disadvantage, A CPS Local Calls Option’, 4 June 2004: http://stakeholders.ofcom.org.uk/binaries/consultations/cps_option/summary/cps_local.pdf.

\textsuperscript{53} On 16 December 2004, Ofcom published its Review of the wholesale local access market statement, in which it concluded that BT held SMP in the market for wholesale local access in the UK (excluding the Hull area). As a consequence, Ofcom issued directions requiring BT to provide specified LLU services on regulated terms. See http://stakeholders.ofcom.org.uk/binaries/consultations/rwlam/statement/rwlam161204.pdf.

In a statement published on 7 October 2010 on the Review of the wholesale local access market, Ofcom has concluded that these requirements on BT should continue. See http://stakeholders.ofcom.org.uk/binaries/consultations/wla/statement/WLA_statement.pdf.
BT’s local exchange buildings. The Metallic Path Facility (“MPF”) form of LLU allows a CP to wholly lease a customer’s access line and to connect it to its own network equipment in the BT local exchange building in order to provide voice services together with broadband internet services directly to the customer.

3.20 LLU operators (“LLUOs”) seeking comprehensive geographic customer access remain reliant on BT for the supply of wholesale call origination as it is unlikely to ever be economically viable for an LLUO to deploy equipment in every BT local exchange. There were around 23 LLUOs active in the UK during the relevant period of investigation, including some CPSOs. The LLUOs vary in size and coverage.

3.21 In Section 4 we consider the relevant markets for this decision and discuss the extent to which the provision of services by CPs through LLU and wholesale access technology remedies such as IA and WLR, can be considered to be part of the same market as BT’s Wholesale Calls and/or CPS-based wholesale end-to-end calls.

**BT’s Wholesale Calls Product**

3.22 Wholesale Calls is an end-to-end voice product offered by BT to resellers in competition with the provision of wholesale end-to-end calls by CPSOs to resellers. There are two variants of BT’s Wholesale Calls product - WCLA (‘line associated’) and WCLI (‘line independent’). The BT Wholesale ‘Wholesale Calls Product Handbook’ describes the difference as follows:

“Wholesale Calls Line Independent (WCLI) is a calls only telephony product that enables CPs to offer their own branded telephony service to their customers. It is available on either a BT Retail line or a WLR line.”

“The Wholesale Calls Line Associated (WCLA) product is the default calls package supplied with a WLR Line. However the WCLI variant can be applied to a WLR line overriding the WCLA product as an additional call package option allowing CPs to offer telephony services, but without operating their own network.”

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54 Local exchanges differ from DLEs. BT has around 5,600 exchange buildings across the UK. In small towns and rural areas they house main distribution frames and concentrators. Around 300 of BT’s exchange buildings also house approximately 700 DLEs, the PSTN switching units which detect whether a call is bound for another number served by the same exchange, or for another exchange.

55 MPF is also known as ‘full LLU’. MPF is to be contrasted with Shared MPF (“SMPF”) or Shared or Partial LLU – which only carries broadband.

56 See Section 4 for further details.


3.23 For both of these variants, calls are originated on and routed over BT’s network to the recipient, or the recipient’s network provider. The routing of these calls is therefore the same as for a call supplied to an end user by BT Retail.

3.24 The various channels for supplying retail calls to end users with a BT line, whether that supply comes through BT Wholesale Calls or CPS-based calls, and whether the end user relationship is with BT Retail, CPSOs or through resellers, are illustrated in Figure 3.2 below.

**Figure 3.2: Channels for delivery of wholesale end-to-end calls to end users via CPS and BT’s Wholesale Calls product using BT upstream products**

![Diagram](source: Ofcom)

*Note: Services provided using LLU have been excluded from the diagram.*

**Previous reviews and investigations into BT’s pricing of wholesale end-to-end calls**

3.25 In addition to the ex ante requirements on BT aimed at fostering competition in the supply of fixed line calls services (such as to supply IA, CPS and WLR), BT’s activities in the supply of its Wholesale Calls product have been subject to a number of Ofcom ex ante reviews and ex post investigations. These are summarised below.

**Ofcom’s 2004 market review of wholesale calls**

3.26 In early 2004, we started work on a market review to consider whether BT should be required to make wholesale end-to-end calls available on cost-based terms to all CPs.
3.27 In June 2004, in the context of other narrowband remedies being developed, we announced that we would not proceed with the review. We gave two reasons for the decision:

- Requiring BT to offer a cost-based wholesale calls product would have undermined investment by competitors in voice competition;\(^{59}\)
- BT had voluntarily undertaken to publish its prices for its Wholesale Calls product and to adhere to them. The effect of these voluntary undertakings was that:\(^{60}\)
  - BT would publish its prices for wholesale end-to-end calls on the day after any change was made;
  - BT would not offer discounts which were not specified in the price list; and
  - BT would ensure that prices published in its price list were not unduly discriminatory.

3.28 We stated at that time that in the event that BT breached the undertakings, we would consider a range of possible actions, including the possibility of re-opening the market review.

The 2005 ‘Gamma Telecom’ investigation

3.29 On 8 October 2004, BT announced that it would be reducing the prices of wholesale local, national, fixed to mobile and fixed international direct dialling calls from 1 December 2004. The reduced prices would apply to both the base rates\(^{61}\) and the discounted rates offered under the Wholesale Calls Commitment Package (“WCCP”). The WCCP contains tiers of spending which CPs taking Wholesale Calls could commit to in order to receive a discount on pence per minute call charges; the higher the annual spending commitment, the larger the discount. The tiers and discounts were published in line with BT’s voluntary undertakings.

3.30 Following BT’s announcement, Gamma Telecom made a formal complaint under the Act alleging that BT’s revised Wholesale Calls tariff structure represented an anti-competitive margin squeeze. Gamma complained that it would not be able to compete effectively with BT in the provision of wholesale end-to-end calls to resellers as a result of insufficient margin between BT’s revised wholesale call tariff and the regulated wholesale price that it had to pay BT for call conveyance. Further, Gamma

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\(^{59}\) See paragraph 4.12 of the *Addressing the Local Call Disadvantage, A CPS Local Calls Option*, statement, 4 June 2004: [http://stakeholders.ofcom.org.uk/binaries/consultations/cps_option/summary/cps_local.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/cps_option/summary/cps_local.pdf)

\(^{60}\) The BT voluntary undertakings were summarised in Ofcom’s Statement on the Discontinuation of conditions and directions continued in July 2003 from Licences made under the Telecommunications Act 1984, except for certain provisions; issued 11 November 2004. See [http://stakeholders.ofcom.org.uk/binaries/consultations/Prop1984tele/statement/Discontinuation.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/Prop1984tele/statement/Discontinuation.pdf)

\(^{61}\) BT’s base rates are the prices offered to BT’s Wholesale Calls customers who do not want to make any volume commitment or those using the WCLA variant of the Wholesale Calls product (i.e. where an end user’s line is supplied through WLR but CPS is not active on their line). See paragraph 3.22 for more details.
alleged that the effect of BT restructuring its wholesale call tariff would be to foreclose the market(s) for the provision of wholesale end-to-end calls to resellers.

3.31 No evidence was found of a margin squeeze. We applied sensitivity analyses to our results and found that the results were robust to plausible changes in the underlying assumptions. Consequently, we published a no grounds for action decision on 13 June 2005 (the ‘Gamma Telecom’ decision).62

**Withdrawal of BT’s voluntary undertakings for Wholesale Calls**

3.32 In November 2006, BT wrote to us stating that the voluntary undertakings it gave in 2004 with regard to its Wholesale Calls product had served their purpose and should be discontinued.

3.33 In an open letter to providers of CPS-based calls dated 16 November 2006, we explained that we were minded to agree to BT’s request and believed that it was not appropriate to carry out a review of the market at that time for the following reasons:

- The market for wholesale end-to-end calls had significantly changed since 2004. In particular, there had been significant consolidation both at the wholesale and retail level; and
- BT’s Wholesale Calls product did not appear to have had the detrimental impact feared by some market entrants. For example, CPS had grown from 3.5 million lines in June 2004 to 6.4 million lines by September 2006.

3.34 Following consultation with stakeholders, we wrote to BT on 11 January 2007.63 Our letter informed BT that, for the reasons set out above, we considered that it was not necessary to ask that these undertakings be continued and that it was not appropriate to carry out a review of the market at that time. We noted in the letter that BT was subject to the Competition Act 1998 and that we had previously carried out a Competition Act investigation into BT’s pricing of its Wholesale Calls product.

**Changes to BT's pricing and key contracts won by BT**

**Introduction of bespoke pricing and adjustments to the WCCP tiers**

3.35 In 2005, while subject to the voluntary undertakings, BT offered wholesale calls based on nine levels of minimum spend commitment ranging from £100,000 to £50 million per year. By April 2007, bespoke pricing had been introduced for WCCPs above £0.75 million and £3 million was now the highest tier (in other words, a CP had to commit to spending £3 million rather than £50 million in order to receive the lowest standard rates).

3.36 BT explained to us that in August 2007, although the tiers structure remained unchanged, BT gave its sales team a level of discretion. Customers providing spend commitments could be offered the call price discounts associated with higher spend

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62 Ofcom decision of 13 June 2005 into the case ‘Complaint from Gamma Telecom Limited against BT Wholesale about reduced rates for Wholesale Calls from 1 December 2004’. See http://stakeholders.ofcom.org.uk/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw_802/

63 http://stakeholders.ofcom.org.uk/binaries/telecoms/groups/whole/wcplettter110107.pdf.
commitments, even if the customer did not commit to the level of spend associated with the higher tier.\textsuperscript{64}

3.37 BT explained that further changes to the WCCP were introduced in September and November 2008.\textsuperscript{65} In September BT increased the number of tiers from six to seven, named them A to G and adjusted the minimum spend commitments. The September changes also reinstated the link between minimum spend commitment and call prices associated with the tier. Two months later BT once again relaxed the spending commitments required. Table 3.3 below shows the guidelines provided to BT’s sales team in November 2008 as to what level of commitment was required in order to obtain each pricing tier.

Table 3.3: WCCP Minimum spend commitment pricing tiers (November 2008)

\begin{tabular}{|c|}
\hline
| Source: BT |
\hline
\end{tabular}

3.38 These changes did not affect bespoke pricing being offered for commitments above £[\times].

\section*{BT major contract wins between 2007 and 2008}

3.39 Having implemented a number of changes to its pricing for Wholesale Calls, including bespoke pricing, in 2007 and 2008 BT went on to negotiate and win the following substantial contracts:

- A contract with [\times] was signed on [\times];
- A contract with [\times] was signed on [\times];
- A contract with [\times] was signed on [\times];
- A contract with [\times Company 1] was signed on [\times]; and
- A contract with [\times Company 2] was signed on [\times].

3.40 The two largest contracts wins were those for [\times Company 1 and Company 2]. Their importance to BT in terms of revenue is evident from their size, as set out in Table A.3.2.

[\times Company 1]

\textbf{Contract details}

3.41 Prior to signing a Wholesale Calls contract with BT, [\times Company 1] self-supplied its wholesale calls needs using a combination of [\times].

3.42 In 2007, [\times Company 1] was one of the UK’s largest CPS operators, selling call minutes to [\times] as well as supplying a large variety of resellers.

\textsuperscript{64} [\times].

\textsuperscript{65} BT response dated 17 July 2009, Batch 2, Q5, 8\textsuperscript{th} section 26 Notice.
3.43 A contract for the provision of Wholesale Calls by BT to [✗ Company 1] was signed [✗]. It is not clear who initiated the discussions between BT and [✗ Company 1] that ultimately led to [✗ Company 1] signing the contract. BT claims that it was [✗ Company 1] that first approached it: “The [✗ Company 1] bid arose out of an approach by [✗ Company 1] to BT to “outsource” its requirements for wholesale end-to-end calls”. [✗ Company 1], however, has a different recollection: “[✗]”.

3.44 [✗ Company 1] informed us during a meeting in November 2008 that the Wholesale Calls deal was agreed with BT [✗] and that BT was the only provider considered by [✗ Company 1]. [✗ Company 1] viewed the deal as a means of cutting [✗ costs]. The deal was originally viewed by both BT and [✗ Company 1] as [✗] and [✗ Company 1] informed us that they would not have agreed the deal had BT’s prices been [✗] higher (i.e. close to the EEO cost floor) but would instead have continued to self-supply its wholesale calls needs through [✗].

3.45 [✗ Discussion of contract terms].

3.46 [✗ Discussion of contract terms].

[✗ Contract 2]

Contract details

3.47 On 9 March 2007, [✗ Company 2] sought bids from [✗], [✗], [✗], [✗] and [✗] for the provision of wholesale end-to-end calls services to enable it to offer residential telephony services (known as [✗]) to its residential customers. At the time, [✗ Company 2]’s wholesale calls services were provided by [✗]. Bidders were asked to provide detailed proposals as to how they proposed to meet (or exceed) the requirements set out by [✗ Company 2] in its Request for Proposal (“RFP”) document.

3.48 [✗ Company 2] explained to us that it analysed the responses it received to the RFP and that [✗ discussion of Company 2’s criteria for assessing the bids].

3.49 [✗ Company 2]’s initial evaluation led to more expensive bids from [✗] and [✗] being dismissed [✗]. On the basis of internal documents provided to us by [✗ Company 2], [✗ discussion of Company 2’s evaluation of the bids].

3.50 A recommendation was put to [✗ Company 2]’s board [✗] that BT should be the preferred supplier [✗ discussions of Company 2’s reasons for selecting BT].

3.51 This recommendation was accepted by the board and led to exclusive contract negotiations taking place between [✗ Company 2] and BT. [✗ Company 2] and BT

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66 See paragraph A.12 of BT’s Response.

67 [✗].

68 [✗ Company 1] has confirmed [✗] that it did not approach any other CP in relation to the provision to it of wholesale end-to-end calls services.

69 [✗].

70 [✗].
signed a contract on [§] for the provision of Wholesale Calls. [§ Discussion of the terms of Contract 2].

3.52  [§ Discussion of the terms of Contract 2].

**Trends in the supply of wholesale end-to-end calls**

**Trends in the take-up of CPS**

3.53  After BT introduced ‘all calls’ CPS in December 2001, its adoption by network operators, CPs and end users was rapid. Figure 3.4 below shows that the number of CPS-enabled BT lines peaked at nearly 6.5 million lines in June 2006.

**Figure 3.4: Number of CPS lines (all CPS variants)**

Source: Ofcom

3.54  The decline in CPS lines after June 2006 coincided with the introduction of competition from LLU in the provision of exchange lines and the launch by Carphone Warehouse Group (now TalkTalk Group) in April 2006 of its ‘free broadband’ offer (to residential customers), which had the effect of attracting customers to MPF-based services.

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71 [§].

72 [§].

73 Based on CPS data provided by BT on a monthly basis.

Figure 3.4 also reflects the impact of BT beginning to win more Wholesale Calls contracts from 2007 onwards which led to a consequent reduction in CPS lines as those contracts transferred from CPSOs. [\(\times\)].

Traffic volumes for CPS also increased rapidly over the same period as that shown in Figure 3.4. In the year from April 2001 to March 2002, CPS generated 57.8 million minutes. By the end of the first six months of the financial year 2002/2003, call minutes had grown to 932 million. Despite the fall in CPS lines since the end of 2006, by 2007/08 CPS and IA jointly generated over 35 billion minutes, with the majority of this traffic being CPS traffic. After 2007, however, sales of BT’s Wholesale Calls product took volume from CPS. This is discussed in more detail in Section 5 of this document.75

Trends in the take-up of BT’s Wholesale Calls product

Figure 3.5 below, which is taken from an internal BT presentation,76 shows BT’s projections for the increase in lines using BT’s Wholesale Calls (WCLI variant) in [\(\times\)], when it was finalising [\(\times\) Contract 1 and Contract 2].

Figure 3.5: BT forecasts for growth in Wholesale Calls lines, [\(\times\)]

Source: BT

Data that we have gathered from BT during the course of this investigation suggests that BT’s forecasts were fairly accurate in the short term but tended to over-estimate the take-up of Wholesale Calls in the longer term. Table 3.6 below sets out the actual take-up of Wholesale Calls and demonstrates that the number of lines peaked at just over [\(\times\)] million lines in [\(\times\)].

Figure 3.6: BT growth in Wholesale Calls lines, [\(\times\)]

Source: BT’s responses to the 8th and 10th section 26 notices.

Figure 3.7 below tracks the growth of BT’s revenues from Wholesale Calls since 2005.77 It shows how the addition of [\(\times\) Company 1] and [\(\times\) Company 2]’s customers resulted in a [\(\times\)] rise in BT’s revenues from [\(\times\)] 2008 onwards. [\(\times\)].

Figure 3.7: Growth of Wholesale Calls billed revenues since 2005

Source: Ofcom analysis of BT data.

Note: From May 2009, the revenues shown are those calculated in our modelling of BT’s historical margins (see Annex 4). These revenues are shifted by one month to reflect the fact that billed revenues are recorded in the month in which

75 See paragraphs 5.36 to 5.47.

76 Wholesale Calls Product Story: What happens after you turn a product around dated [\(\times\)]; Owners: [\(\times\)] Head of Wholesale Calls. Doc ID 32416.

77 Revenue figures used for this chart are from BT’s responses to section 26 Notices.
the bill was sent to the customer, which is the month following the one in which actual usage occurred. Billed revenues also include lump sum rebates and credits to customers’ accounts

Resellers and the targeting of end users

3.60 In the following paragraphs, we describe the consumption of wholesale end-to-end calls by both vertically integrated retail operations and by resellers who are independent of BT and the CPSOs. We go on to identify the major contracts which CPSOs and BT compete for in the downstream market.

3.61 Some CPSOs have vertically integrated retail operations for marketing their calls to end users (in the way that BT Retail sells calls to end users), while others choose to sell CPS-based wholesale end-to-end calls to third party resellers who then sell the calls to end users. TalkTalk for example is the residential consumer sales arm of the TalkTalk Group (though Opal, which is part of the TalkTalk Group, also sells to external resellers).

3.62 There are currently around 900 companies operating as resellers of wholesale end-to-end calls in the UK. These companies vary in size and sophistication and in the customers they seek to serve.

3.63 Resellers target potential end users with a BT line to try to sell them a calls product, sometimes bundled with other communications products or services. Some resellers also act as aggregators, selling wholesale end-to-end calls to a number of smaller resellers. (A small proportion of wholesale end-to-end calls are also purchased directly by large companies for their own consumption.)

3.64 The community of resellers can be broadly characterised as a small number of very large resellers, mainly focused on the residential sector, and a large number of smaller resellers mainly (but not exclusively) serving small and medium sized enterprises (“SMEs”).

3.65 In view of the very large number of resellers active in targeting the SME sector, we commissioned a survey of those resellers to inform our decision. In particular, we wished to gain a better understanding of the benefits that the complainants maintained that resellers bring to SME end users of voice calls and how these benefits might be negatively affected by the alleged margin squeeze. The report from this research is at Annex 2 of this document. We note that BT raised a number of concerns about the way in which this survey was conducted and the weight which can be attached to its results (see paragraphs 4.27 to 4.29 for more detail).

3.66 There are indications that the number of resellers has decreased over recent years due in part to consolidation and the emergence of a small number of very large residential resellers, as explained below. In addition, our survey of SME resellers found that a number of respondents in the qualitative survey sample (around one in six) stated that they had recently pulled out of the residential sector.

3.67 Whether the supply of wholesale end-to-end calls to the different categories of end users (i.e. residential customers and SMEs) fall within separate markets or are part of the same market is discussed in Section 4. However, we set out below the broad trends in the supply of wholesale end-to-end calls to these categories of end users.

78 An SME is defined as a business which employs between one and 250 employees.
Trends in the supply of calls to the residential sector

3.68 The residential reseller sector has undergone increased concentration and growth since 2005. By April 2009, the top five wholesale end-to-end calls reseller contracts (by both revenue and volume) were to supply resellers focused on residential sales. Those top five contracts represented over 50% of all wholesale end-to-end calls supplied in the UK as a whole.\(^7^9\) This growth in size of residential resellers reflected the increasing competition in the supply of fixed telephony with improved wholesale products sold at lower prices and consumers increasingly purchasing voice calls bundled with other products such as television and broadband. As a result, BT Retail’s legacy customer base declined.\(^8^0\)

3.69 Table 3.8 below is a snapshot of the top 15 reseller contracts by value and volume in April 2009. These 15 contracts accounted for nearly 58% of the overall merchant supply by revenue and 68% by minutes that month. BT’s contracts with [\(\times\) Company 1 and Company 2] together accounted for around [\(\times\) 21%-40%] of the total revenue and [\(\times\) 41-60%] of the total minutes.

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<tr>
<td>16</td>
<td>Others</td>
<td>Various</td>
<td>41.8%</td>
<td>31.6%</td>
</tr>
</tbody>
</table>

Source: CPSO section 26 responses; BT section 26 response based on BBFA data

Note: These figures include some IA minutes and revenues. These are not significant enough affect the rankings.

3.70 By August 2011, the picture had not changed significantly. [\(\times\) Company 1 and Company 2] remain the largest contracts, though now account for a smaller (though

\(^{79}\) See Table 3.8 for details.

still substantial) share of the overall market. The majority of the top 10 contracts were to supply resellers focused on residential sales.

‘White label’ residential resellers

3.71 Three out of the top [3]<br> reseller contracts in Table 3.8 above – [3]<br>, [3] and [3]<br> - are companies which were not originally CPs, but have used wholesale end-to-end call products as an entry point into the communications market. These are also known as ‘brand extenders’. This reflects the value that these non-traditional CPs see as extractable from the sales of residential calls when marketed through their existing consumer outlets alongside their main consumer products or services.

3.72 These resellers purchase ‘white label’ telephony services from BT or the CPSOs. These services are ‘managed solutions’ with billing and customer relationship management solutions provided by the CPSOs/BT in addition to the basic wholesale end to end calls service.

3.73 Key contracts for these ‘white label’ resellers which BT targeted successfully were [3]<br> and the [3]<br>.

Companies expanding into fixed telephony through wholesale end-to-end calls

3.74 At the same time as these ‘White Label’ resellers have used wholesale end-to-end calls to enter the fixed telephony market as resellers, so too have companies who originally provided other communications services, such as broadband, television and mobile services. As the range of residential media and communications services has grown and technology has converged, calls have become an increasingly common component of bundled packages offered to consumers.

3.75 For example, Sky originally only provided pay-TV services to its customers. In the 1990s, Sky began offering its pay-TV subscribers voice telephony services, initially via IA and later through the use of CPS. In 2006, Sky acquired Easynet Group plc, which had an LLU reach covering 18% of UK homes, and began offering a ‘free’ broadband service (which included SkyTalk voice calls) to its pay-TV customers that were within the range of the LLU network. [3]<br>. Sky is continuing to expand its activities as a network operator with the roll out of its own full MPF (voice and broadband) network.

3.76 Similarly, Tiscali began supplying residential internet services but expanded to CPS-based calls and WLR as well as television services before being purchased by TalkTalk in Autumn 2009.

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82 Provided by its wholly-owned subsidiary Broadsystem Ventures Limited (BVL) (now called News Optimus Limited), initially through a contractual IA-hosting arrangement with Worldxchange and from 2000 through a contract with THUS. After winning an extension to the contract in October 2002, THUS migrated Sky customers to a CPS-based service over the following two years.
83 By May 2010, 700,000 Sky customers were on fully unbundled LLU; source: Enders Analysis ‘All about multi-products: Sky fiscal Q3 2010 results’
84 [3]<br>.
3.77 Key BT contract wins amongst these companies branching out into fixed telephony were the [✈ Company 1], [✈] and [✈ Company 2] contracts.

**Trends in the supply of calls to the SME sector**

3.78 The SME sector was described by the complainants as diverse and difficult for CPSOs to reach and support directly. For these reasons, the sector has attracted a large number of smaller resellers. The complainants maintained that SME customers choose to purchase services from a reseller (as opposed to purchasing directly from a CPSO or BT) as resellers can provide what they referred to as "a broader service wrap" and innovative tailor-made "bundled solutions". Further, THUS maintained that by aggregating the telecoms requirements of many small SME customers, resellers were able to seek better prices and service levels from their wholesale suppliers.

3.79 Our survey of resellers to SMEs (see Annex 2) found that calls are purchased either as a stand-alone product or bundled with other products such as VoIP, broadband access / internet services, mobile services, Call Divert, Call Recording and other related services. Two-thirds of the quantitative survey respondents said that they purchased additional value-added services.

**CPSOs purchasing wholesale end-to-end voice calls from competitors**

3.80 As well as supplying wholesale end-to-end calls through their own networks, CPSOs have also tended to purchase some calls from each other and from BT. This has been done mainly for resilience purposes or to provide a means of meeting an increase in demand which could not be met by self-supply, or to take advantage of a particular strength of a competitor’s network (such as international reach).

3.81 In addition to such supply agreements, THUS considered purchasing Wholesale Calls from BT Wholesale instead of self-supplying. THUS in its complaint stated that it had held various (abortive) discussions with BT Wholesale over 2007 and 2008 concerning possible outsourcing of THUS’ switched voice calls.

3.82 In its complaint, Gamma stated that in 2007 it had considered shutting down its network to become a BT Wholesale reseller and had been in negotiations with BT Wholesale to discuss prices for supply of Wholesale Calls. BT confirmed that, in the context of negotiations in 2007 which did not come to fruition, it had offered prices to Gamma for the supply of Wholesale Calls. Two sets of prices were offered, the first based on Gamma sending all of its traffic to BT with a commitment spend in excess of £5 million per month. The second set of prices was based on a spend commitment of up to £5 million per month.85

3.83 [✈ Contract 1] resulted in [✈ Company 1] moving from self-supply to becoming a BT Wholesale Calls reseller. [✈ Company 1] told us that the contract enabled it to decommission or re-employ excess capacity on its own network and provide network cost savings as BT’s prices were lower than [✈ Company 1]’s own estimate of the cost of self-supply.86

3.84 The different business models of the major CPSOs are discussed in more detail in Annex 1 below.

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85 BT’s response to Question 6 of the section 26 Notice sent to BT on 26 August 2008.

86 [✈].
3.85 We now set out our assessment of whether BT has contravened the Chapter II prohibition in the Act (Sections 4-7) and our overall conclusions (Section 8).
Section 4

Defining the Relevant Markets

Introduction

4.1 As discussed in Section 3, in conducting an assessment of whether or not there has been an abuse of a dominant position, contrary to the Chapter II Prohibition and/or Article 102, it is necessary to assess whether an undertaking is in fact dominant in an upstream market from which it supplies an input which is used to participate in a related downstream market. The undertaking must also be active in that downstream market (but is not required to be dominant in that market).

4.2 It is therefore necessary to conduct an assessment of the boundaries of the relevant upstream market before proceeding to evaluate the market power of an undertaking within that market.

4.3 For the purposes of this decision, it is therefore necessary to consider:

a) the upstream market(s), in which BT may hold a dominant position; and

b) the downstream market, in which BT may be active.

If the downstream market is itself an intermediate market, whose demand is derived from competition in a (further) downstream retail market, we may also need to consider the retail market.

4.4 Given our overall conclusion that there are no grounds for action as a result of our assessment of the effect of BT’s conduct, it is not necessary to conclude on the precise boundaries of the downstream markets. However, as the Competition Appeal Tribunal observed:

“It will often be appropriate for the Director, in rejecting a complaint on the grounds that there is no abuse, to indicate, at least briefly, which market or markets appear to him, at first sight, to be potentially relevant to his investigation, and whether or not he has made any assumption on the issue of dominance on those markets. Such a practice would, in our view, lay a firmer foundation for the analysis of the alleged abuse, and clarify for the parties concerned the starting point of the Director’s reasoning. That is likely to be particularly so in complex sectors such as telecommunications where the alleged dominance may be alleged to exist in one market, and the alleged abuse allegedly takes place in a neighbouring market, whether upstream, downstream or otherwise related. We emphasise, however, that the Director is not required to decide issues which it is unnecessary for him to decide in order to reach a concluded view on a complaint.”

4.5 In this Section we therefore discuss how relevant markets are defined, before turning to consider the markets that we believe are relevant to this decision. We then set out the key points made in relation to market definition by respondents to the Statement

87 Freeserve v Director General of Telecommunications [2003] CAT 5, paragraph 131.
of Objections, however we have not responded in detail to these as we do not consider that it is necessary, given our overall conclusion. It should be noted however, that if further evidence emerges that causes us to change our view that on the balance of probabilities BT’s behaviour has not led, nor was or is likely to lead to a reduction in the intensity of competition, we would need to carry out substantial further analysis on the merits of the points raised by BT in its Response and whether it is therefore appropriate to revise our market definitions.

4.6 In Section 5 we then discuss BT’s position in the relevant markets as defined for the purposes of this Decision, including whether it is dominant in the relevant upstream market and active in the relevant downstream market.

**Identifying relevant markets**

4.7 The relevant market has two dimensions. These dimensions may be broadly defined as follows:

a) the product market - a relevant product market comprises all those goods and/or services which are regarded as interchangeable by any reason of the products’ characteristics, prices and intended use, and

b) the geographic market - the relevant geographic market is the area over which substitution takes place.

4.8 In the following sub-sections we provide an introduction into how these two dimensions are considered in the context of a market definition exercise.

**Identifying the relevant product market**

4.9 The ECJ has indicated that the primary purpose of product market definition is to determine whether there is a sufficient degree of interchangeability between products such that they should be considered as part of the same market. This requires a competition authority to investigate:

“[those] characteristics of the products in question by virtue of which they are particularly apt to satisfy an inelastic need and are only to a limited extent interchangeable with other products.”

4.10 In conducting this assessment, the European Commission considers that products that have materially different characteristics or are not functionally interchangeable

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91 Case 85/76 Hoffman La Roche v Commission [1979] ECR 461, at paragraph 28

will not therefore generally form part of the same product market.\textsuperscript{93} The first step in product market definition is thus to determine which products are potentially interchangeable with the focal product on the basis of their characteristics or functionality.

4.11 Once a basket of potentially interchangeable products has been identified on the basis of characteristics and functionality, it is then necessary to consider the extent to which such products actually exercise a competitive constraint. As the Competition Appeal Tribunal set out in the \textit{Aberdeen Journals} case:

\begin{quote}
\textit{“[t]he key idea is that of competitive constraint: do the other products alleged to form part of the same market act as a competitive constraint on the conduct of the allegedly dominant firm?”}\textsuperscript{94}
\end{quote}

4.12 The European Commission has provided guidance on how it applies the concept of the relevant product market in practice in its Notice on market definition.\textsuperscript{95} The Notice describes the sorts of information that may be used to define relevant product markets. These include product characteristics and intended use, evidence of substitution in the recent past, the views of customers and competitors, consumer preferences, barriers and costs associated with switching demand to potential substitutes and different categories of customers and price discrimination.

4.13 The European Commission Notice also explains that supply-side substitution may also be relevant to a definition of the relevant market, where its effects are sufficient to constrain pricing behaviour within the relevant timescale and without incurring significant additional costs:

\begin{quote}
\textit{“Supply-side substitutability may also be taken into account when defining markets in those situations in which its effects are equivalent to those of demand substitution in terms of effectiveness and immediacy. This means that suppliers are able to switch production to the relevant products and market them in the short term without incurring significant additional costs or risks in response to small and permanent changes in relative prices. When these conditions are met, the additional production that is put on the market will have a disciplinary effect on the competitive behaviour of the companies involved. Such an impact in terms of effectiveness and immediacy is equivalent to the demand substitution effect.”}\textsuperscript{96}
\end{quote}

4.14 The ‘hypothetical monopolist test’ is a useful tool to identify close demand side and supply side substitutes.\textsuperscript{97} The starting point for conducting the test is to take a narrow

\textsuperscript{93} See in particular Case M.3333 Sony/BMG at paragraph 23 in which the European Commission distinguishes between products on the basis of characteristics even if the underlying experience for the end user may be the same.

\textsuperscript{94} \textit{Aberdeen Journals Ltd v DGFT} [2001] CAT 5, at paragraph 97.

\textsuperscript{95} \textit{Commission Notice on the definition of the relevant market for the purposes of Community competition law}, OJ C 372, 3.12.1997, paragraphs 36-43.

\textsuperscript{96} \textit{Aberdeen Journals Ltd v DGFT} [2001] CAT 5, at paragraph 97.

view of the market and then determine whether the market definition should be widened to include other products. A set of products is considered to be in a separate market if a hypothetical monopoly supplier could impose a small but significant, non-transitory relative increase in price (“SSNIP”), in the range of 5% to 10% above the competitive level, without losing sales to such a degree as to make this unprofitable. If such a price rise would be unprofitable because of substitution, then the market definition should be expanded to include the substitute products.

4.15 Demand-side substitution occurs if consumers would switch to other products in response to the price increase. Supply-side substitution occurs if suppliers of other products would begin to compete with the hypothetical monopolist in the supply of the product under investigation in response to the price increase within the relevant timescale and without incurring significant additional costs.

4.16 It is also appropriate to consider whether different customers, services and areas are subject to a common pricing constraint and should therefore also be included in that same market. A common pricing constraint is generally used to define the market when there are indications that there are additional constraints on firms’ behaviour, which override the absence of demand- or supply-side substitutability. Such constraints may exist for example where consumers have a preference for purchasing a bundle of services from a single supplier rather than on a service-by-service basis. Failure to consider the existence of a common pricing constraint could lead to unduly narrow markets being defined.

Identifying the relevant geographic market

4.17 The geographic boundary of the relevant market is defined using the same approach as the product market definition, that is, by using the hypothetical monopolist test to inform judgments as to demand- and supply-side substitutability, and considering evidence as to the existence of a common pricing constraint.

4.18 For geographic markets, the hypothetical monopolist test asks whether a price increase in the narrowly defined area would encourage operators outside the area to begin to offer services to customers in the area and/or whether customers could switch to suppliers located outside the area. The existence of a common pricing constraint can also be relevant to the consideration of relevant geographic market boundaries.

4.19 Also relevant is paragraph 56 of the European Commission’s Guidelines on market analysis and the assessment of market power, which states that in cases where there is a sufficient degree of variety in competitive conditions between areas, distinct local markets should be defined. To the extent that competitive conditions in different areas are sufficiently homogeneous, different areas are to found to be in the same relevant geographic markets.


99 Such consumer preferences can lead to what are known as demand side economies of scope, and lead to the definition of ‘cluster’ markets.

100 Commission Guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services (2002/ C 165/03) [link to PDF].
4.20 Even where competitive conditions do differ between areas, it can be the case that uniform pricing constraints exist across geographic areas, such that a single price emerges to reflect competitive conditions. In this scenario, the uniform pricing constraint would lead to a finding of a broader geographic market, where competitive conditions differing by area would otherwise imply a narrower geographic market definition.

**Markets relevant for this decision**

**Introduction**

4.21 As discussed in Section 2, THUS and Gamma have alleged that BT is abusing its position in the markets for fixed call origination, conveyance and call termination in the UK (excluding the Hull area) and that this has affected competition in the downstream market for wholesale end-to-end calls among resellers of wholesale end-to-end calls.\(^{101}\) The market for wholesale end-to-end calls is not, however, the ultimate downstream market on which the services are consumed, as these services are ultimately used to supply calls to residential and business customers (i.e. end users).

4.22 We therefore begin our assessment of the relevant markets by considering the markets in which the following products are supplied:

(i) upstream products: call origination, call termination and the provision of core network services;

(ii) downstream products: wholesale end-to-end calls; and

(iii) further downstream products: retail calls, from which the demand for wholesale end-to-end calls is derived.

4.23 The upstream and downstream markets relevant for this decision are ultimately derived from the demand for retail calls. In the following sub-sections we therefore:

(i) define the (further downstream) market in which retail calls are supplied;

(ii) define the downstream market; and

(iii) define the upstream market(s).

4.24 We define the upstream market(s) last since it is necessary to know what the products in the relevant downstream market are before it is possible to determine those products which may be used in the supply of downstream products.

4.25 In its response to the Statement of Objections, BT raises a number of concerns about Ofcom’s approach to market definition. In particular BT considers that the downstream markets should be more widely defined and identifies a number of what it considers to be defects in Ofcom’s approach to the definition of the downstream and further downstream markets, which it considered also led to defects in the theories of harm set out in the Statement of Objections.

\(^{101}\) See paragraphs 2.18 to 2.25 (THUS) and paragraphs 2.26 to 2.28 (Gamma).
4.26 BT’s arguments are summarised below alongside our analysis of each of the relevant markets, for the purposes of transparency. However, as noted above, given our overall conclusion that there are no grounds for action, we have not responded to each of these as we do not consider that it is necessary for the purposes of this decision.

4.27 BT also raises concerns with the evidence used by Ofcom to support its market definition analysis. In particular, BT argues that the Prodata report evidence is partial and unfit for purpose. As part of its Response, BT employed Alix Partners to review the way in which the Prodata report had been prepared and the findings that flowed from it. Alix Partners claim that there are problems with the way in which the survey sample was selected and the omission from it of residential resellers. They also suggest that the survey fails to apply the SSNIP test properly and that the results of the survey have been wrongly interpreted.

4.28 We identify in the discussion below where BT/Alix Partners have claimed that there are problems with the evidence from the Prodata report that we used in the Statement of Objections to support our market definition and market power analysis. We note BT’s comments that we did not follow the Competition Commission and OFT’s Guidelines on “Good practice in the design and presentation of consumer evidence in merger enquiries”.

4.29 We recognise that the issues that BT identified with the survey are significant, and could imply that there were deficiencies in the survey evidence. Had we considered that BT’s behaviour has had or is likely to have an anti-competitive effect, we would have had to review the survey evidence in detail, and consider how to remedy any defects in the evidence, before reaching a final decision in this case. However, given our overall conclusions (based on a narrower market definition), we do not consider it necessary to address each of the specific points that they raise. This should not, however, be taken as indicating that we necessarily agree with every point made by BT/Alix Partners in respect of the Prodata survey.

4.30 In its response, C&W supported Ofcom’s reasoning when determining the upstream and downstream markets.

Further downstream markets: The supply of retail calls

Ofcom’s provisional views in Statement of Objections

4.31 As discussed in Section 3, services from the call origination and call termination markets are used as inputs to provide wholesale end-to-end calls. These services are in turn eventually used as inputs into the provision of retail fixed-line voice calls to residential and business customers.

4.32 Ofcom has already carried out a number of detailed assessments of the markets in which retail fixed-line voice calls are supplied, in exercise of our powers (and as we are required to do) under the Communications Act 2003 and the Framework

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102 The report from Alix Partners forms Annex 2 to BT’s Response to the Statement of Objections.


104 See paragraph 3.1 of C&W’s response to the Statement of Objections.
Directive. The European Commission’s Guidelines on market analysis under the Directives makes clear that “markets will be defined and SMP will be assessed using the same methodologies as under competition law”.

The Commission added that as a result, “The use of the same methodologies ensures that the relevant market defined for the purpose of sector-specific regulation will in most cases correspond to the market definitions that would apply under competition law.”

4.33 When carrying out market reviews under the Framework Directive, we are required to take account of the European Commission’s Recommendations and Guidelines, and to define the relevant markets appropriate to national circumstances, in particular relevant geographic markets within the UK, in accordance with the principles of competition law.

4.34 We therefore carried out our assessment of market definition in these reviews in accordance with the principles set out in the Framework Directive, and applied the general principles of competition law, using the approach to market definition generally used by UK competition authorities. This same approach is used to define relevant markets for the purposes of investigations under the Act.

4.35 Ofcom first examined the market for fixed retail voice calls in its review of the markets for fixed narrowband retail services of 2003. In this review, we identified a number of separate retail product markets, including those for residential local calls, residential national calls, business local calls and business national calls. Separate geographic markets were identified for the UK excluding the Hull area and the Hull area.

4.36 We carried out a second review of the retail calls market as part of our 2009 review of the fixed retail narrowband market. We issued a consultation document in March 2009 and a subsequent statement in September 2009.

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105 For more information on the legal framework and background to the market review, see Chapter 1 of the Fixed Narrowband Retail Services Market consultation, 26 August 2003: http://www.ofcom.org.uk/static/archive/oftel/publications/eu_directives/2003/fix_narrow_retail0803.pdf. Directive 2009/140/EC made a number of changes to the Framework Directive, however these do not affect the approach taken to market definition in this case, as the relevant EU Guidelines and approach to market definition remain the same.

106 See paragraph 24 of the Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services, (2002) OJ C 165/03.

107 See paragraph 25 of the Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services.


4.37 In the 2009 statement we concluded that there is now a single residential fixed narrowband analogue calls market, rather than separate markets for different call types (i.e. local, national, international). The split between residential and business markets remains, so that we have defined a separate business fixed narrowband analogue calls market. Separate geographic markets were again defined for the UK excluding Hull, and the Hull area.

4.38 In defining the markets, we observed that:

(i) Bundling of access and calls is increasing, but that retail calls and retail access (exchange line rental) are in separate markets and are likely to remain in separate markets;

(ii) Competition between fixed narrowband and mobile calls is increasing, but that retail narrowband and mobile calls are in separate markets and are likely to remain in separate economic markets;

(iii) All fixed retail call types, including international, are now in the same product market;

(iv) Managed voice over broadband (“VOB”) is in the same market as fixed narrowband calls as it offers similar product characteristics. However, VoIP products such as Skype are perceived by consumers to be of lower quality and are excluded from the market;

(v) The different conditions of competition suggested that business and residential customers are in separate economic markets; and

(vi) The different conditions of competition in Hull suggested that separate geographic markets should continue to be defined for Hull, and the UK (excluding Hull).

4.39 Given the extensive and recent/contemporaneous nature of the market definition exercise carried out in this review, which considered evidence of the characteristics of the market between 2003 and 2009 (i.e. the period under investigation), we proposed in the Statement of Objections to follow the market definition assessment laid out in that document, for the purposes of this case.

BT’s representations

4.40 In its response to the Statement of Objections, BT argues that the further downstream market is wider than that defined by Ofcom. BT suggests that calls

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113 At the time of the Statement of Objections, we did not consider that we had seen evidence which would cause us to alter this assessment of market definition for the purposes of this case.

114 See paragraphs C.44 to C.78 of the BT Response.
originating on mobile networks, fibre access circuits and VoIP calls should also be included in the product market, as should calls bundled with other services (e.g. access or broadband).

4.41 BT notes that the volume of mobile voice minutes has increased as the volume of fixed minutes has decreased, suggesting a degree of substitution between the two. Moreover, BT notes that the pence per minute price of fixed and mobile calls are converging.

4.42 BT further notes that the 2009 review of the fixed retail narrowband market had concluded that “mobile calls are (just) outside the market for fixed calls”, arguing that if mobile calls were just outside the market in 2009 then Ofcom should consider whether they are now within the market.

4.43 BT claims that Ofcom has provided no evidence to support its view in the Statement of Objections that VoIP services should be excluded from the further downstream market because they “are perceived by consumers to be of lower quality”. In addition Ofcom should have considered whether business grade IP voice telephony services (often based on fibre access) should be included within the market.

4.44 BT suggests that VoIP services, such as Skype, are potential substitutes for long distance or international calls and for calls within the youth market. The low cost of such calls (BT argues that they are free as between Skype users) and ability to combine with a webcam outweigh any reduction in voice call quality.

4.45 BT refers to public statements from C&W116 and Gamma117, about the availability, quality and supply of their IP-based services to business calls customers in support of its view that IP voice services should be included in the further downstream market.

4.46 BT also highlights the number of packages offered to, and taken up by, residential and business customers that bundle voice calls with other services. BT argues that the prices of these bundles constrain the ability of the hypothetical monopolist of voice-only services to raise prices above the competitive level, noting that it is unnecessary for every end user to take a bundle in order to be protected from a SSNIP as services are priced nationally. On this basis, BT argues that the market should be broadened to reflect the constraints provided by bundled voice services. Even if bundles are excluded from the further downstream market, the call elements of the bundles should be included when calculating market shares and assessing effects.

4.47 BT argues that even if the various types of voice calls outlined above are excluded from Ofcom’s definition of the further downstream (retail) market, Ofcom has not


properly considered the effect of these services as indirect constraints on the defined markets and on BT in particular. In addition, BT notes that customer preferences and the retail market are evolving rapidly which means that alternative products and services provide an increasing constraint on any monopoly supplier of the focal product.

Ofcom’s conclusions on the further downstream market definition

4.48 BT’s arguments can be broadly summarised as being that Ofcom has inappropriately excluded services from the further downstream (retail) market. Moreover, even if these were correctly excluded from the further downstream market, Ofcom has failed to adequately assess the extent to which they act as constraints on the pricing of wholesale end-to-end calls in its assessment of the effect of BT’s conduct.

4.49 Our analysis of effects in Section 7, which is based on the narrower downstream market definition set out in the Statement of Objections, concludes that we are not satisfied that the evidence demonstrates that, on the balance of probabilities, BT’s conduct has had an adverse impact on competition (or that it was or is likely to have such an effect). Any widening of the further downstream market definition would not change our conclusions as anti-competitive effects would not be more likely than under the narrower definition.

4.50 In light of this, we do not consider that it is necessary for Ofcom to conclude definitively on the precise boundaries of the further downstream markets in this case. However, for the purposes of this decision we have proceeded on the basis set out in the Statement of Objections that the relevant further downstream markets are those for:

(i) the supply of residential fixed narrowband analogue calls in the UK (excluding the Hull area); and

(ii) the supply of business fixed narrowband analogue calls in the UK (excluding the Hull area).\footnote{We do not consider retail markets in Hull as BT has no significant presence in these markets (KCOM is the incumbent PSTN operator).}

Downstream market: the supply of wholesale end-to-end calls

Introduction

4.51 We next consider the downstream market on which end-to-end calls are supplied at the wholesale level.

4.52 We did not define the market in which wholesale end-to-end voice calls are supplied in our reviews of the fixed retail and wholesale narrowband markets as these reviews were focussed on the markets identified by the European Commission as being relevant for review.\footnote{http://eur-lex.europa.eu/LexUriServ/site/en/oj/2007/l_344/l_34420071228en00650069.pdf.} It has therefore been necessary for us to define from first principles the market in which wholesale end-to-end calls are supplied.
There are five main steps to our market definition exercise:

(i) **Identification of the relevant focal product:** This involves taking into account the extent to which products display similar characteristics and functionality so as to be considered interchangeable.

We then go on to consider the extent to which the downstream product market should be extended to include other products. This process involves considering whether it would be profitable for a hypothetical monopoly supplier of the focal product to permanently raise prices by a small but significant amount. The profitability of such a price rise depends upon the extent to which substitution would occur between the focal product and the product being considered for inclusion in the relevant market definition.

(ii) **Assessment of direct substitution:** Resellers facing an increase in the price of the focal product could respond by switching to alternative wholesale products. The key drivers of this direct substitution are the extent to which the potential alternative products are interchangeable with the focal product, and the extent to which the alternative wholesale products are available to resellers.

(iii) **Assessment of indirect substitution:** End users (i.e. the reseller’s customers) could respond by switching to alternative retail products. Therefore, even if there are only limited direct substitutes for the focal product, a hypothetical monopolist may nevertheless find it unprofitable to increase the price of the focal product above competitive levels because of the threat that end users may switch to substitute retail products. The potential set of substitute products that would be available to end users is in this specific case broadly the same as that set faced by resellers.

(iv) **Assessment of self-supply:** This involves taking into account whether the market should include self-supplied products or should be limited to the supply of products to third parties (i.e. on the “merchant market”). This will depend upon whether a vertically integrated supplier would switch self-supplied capacity into the merchant market in response to a price rise.

(v) **Identification of the geographic scope of the market:** Once we have defined the downstream product market, we then consider the geographic scope of that market.

We repeat below the market analysis that we included in the Statement of Objections in relation to each of these five steps and set out the comments that BT made in respect of each step of this analysis. For the purposes of transparency, we set out BT’s response in detail, to allow all parties to see the arguments and evidential issues raised by BT. It would however, take a considerable amount of further information gathering and analysis to address and finally determine each of these issues. We consider that to be unnecessary for the purposes of this decision, because (as explained above) our conclusions in Section 7 mean that it is unnecessary for us to reach a definitive view on market definition in this case. The downstream market definition that we use for the purposes of this decision is set out in paragraph 4.180 below.
The relevant focal product

Ofcom’s provisional views in the Statement of Objections

4.55 Our starting point for identifying the focal product in the Statement of Objections was the product under investigation. In this case, that was the supply of wholesale end-to-end calls.

4.56 The focal product is usually the narrowest feasible definition of the relevant market. However, where products are primarily sold as part of a bundle it may be appropriate to narrow or extend the focal product to include the individual products that are sold as part of the bundle.

4.57 Wholesale end-to-end calls can be thought of as a bundle in two distinct respects. First, wholesale end-to-end calls are sold as a bundle of individual end-to-end call types (i.e. local and national calls, international calls, calls to mobile, non-geographic calls, etc.). It is possible to purchase individual end-to-end calls bundled in three separate ways: all domestic calls (including all call types except international calls), all international calls, or all international and domestic calls. We therefore considered whether the focal product should be defined more narrowly, e.g. by individual call type, or more widely, e.g. all domestic, or all domestic and international call types.

4.58 Second, wholesale end-to-end calls are sometimes sold as part of a wider bundle of communication products. We therefore considered whether it was appropriate to extend the focal product to include products that may be bundled with wholesale end-to-end calls, such as wholesale broadband products.

4.59 In addition to the issues relating to bundling above, we also considered:

- whether the focal product included both wholesale calls supplied by BT’s Wholesale Calls product and wholesale calls supplied using CPS; and
- whether the focal product included wholesale end-to-end calls provided to both residential and business customers.

a) The relevant focal product includes all call types

4.60 CPS technology requires a CPS reseller to choose between having all call types supplied by one CPSO, or having separate suppliers for domestic and international calls. It is not technically possible for a CPS reseller to choose different suppliers for different call types within these two broad categories, e.g. a reseller could not choose (for example) BT for geographic calls, and a CPSO for calls to mobile. As a consequence, suppliers compete on the basis of the value for money offered by their overall calls package.

4.61 It is less certain whether the sale of end to end national and international calls should be considered as one focal product, or separate focal products. Our 2009 wholesale narrowband market review found that prior to 2008, CPSO resellers tended to

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purchase domestic and international calls from the same CPSO. However, responses by CPSOs to the section 26 Notices indicated that resellers now often choose separate international and domestic call suppliers.\footnote{122 Responses to the section 26 Notices, issued to various CPs on 10 June 2009 (see Section 3 for details of the CPs to which the Notices were sent).}

4.62 Although resellers may choose different suppliers for domestic and international calls, the conditions of competition in each of these segments appear to be very similar. In particular, all the major suppliers of wholesale end-to-end calls offer domestic calls and international calls packages (both separately and as a bundle), and there are no apparent barriers to supply-side substitution between international and domestic calls.

4.63 For these reasons, we took the view in the Statement of Objections that the most appropriate focal product included all end-to-end call types (i.e. both international and domestic calls).\footnote{123 A small number of specific call types (e.g. Timeline and reverse charges) are not included in the basket of call types that can be routed over CPS. Rather, these calls are provided by the end-user’s line provider. As these particular call types are not part of the bundle for which Wholesale Calls and CPSOs compete (i.e. they are not provided by CPSOs in their CPS call packages), they are excluded from both our definition of the focal product and our assessment of BT’s Wholesale Calls margins (as discussed in Section 6). See BT’s CPS Product Handbook and CPS Technical FAQ for further details on the specific call types that are excluded from CPS: http://www.btwholesale.com/pages/downloads/Products/Converged_Voice/CPS_Product_Handbook_V2.doc and http://www.btwholesale.com/pages/downloads/service_and_support/Network_Resources/cps_documentation/cps_faqs.doc.}

\textit{b) The relevant focal product should not include products that are bundled with wholesale end-to-end calls}

4.64 We explained in the Statement of Objections that responses to our reseller survey indicated that wholesale end-to-end calls is primarily purchased as a stand-alone product. For example, 79\% of respondents indicated that they purchased wholesale end-to-end calls as a stand-alone product, with only 18\% indicating that they purchase calls as part of a bundle with other communication products or value-added services.\footnote{124 See paragraph 3.15 in the market research on resellers of wholesale end-to-end calls, set out in Annex 2 below.} Additionally, all the major residential contracts that we have seen (which include the largest Wholesale Calls contracts) indicated that wholesale end-to-end calls are purchased as a stand-alone product.\footnote{125 Based on evidence supplied by BT in response to the 1\textsuperscript{st} and 2\textsuperscript{nd} section 26 Notices and the CPSOs in response to the section 26 Notices we issued on 7 August 2009.}

4.65 As bundling appeared not to be widespread (i.e. the bundle is not the narrowest feasible product) we took the view in the Statement of Objections that the focal product should not be extended to include products or services that are sometimes sold in conjunction with wholesale end-to-end calls.
c) The relevant focal product should include wholesale end-to-end calls provided both by CPS and BT’s Wholesale Calls product

4.66 Although there are some technical differences, from an end-user’s perspective wholesale end-to-end calls supplied by a reseller using BT’s Wholesale Calls product and those supplied by a reseller using CPS are functionally equivalent and fully interchangeable. This can readily be seen through BT’s reasons for ceasing to publish Wholesale Calls prices and its success at winning a large number of contracts from CPSOs in both the residential and SME sectors.

4.67 Responses to our SME reseller quantitative survey also indicate that Wholesale Calls and CPS are very close substitutes. When asked the question: “Do any of your voice call customers have any preference for Wholesale Calls over CPS?”, 81% of respondents indicated that none of their customers had a preference, with 15% indicating that some customers have a preference.

4.68 Similarly, in the qualitative elements of the survey, 26 of the 38 respondents questioned consider Wholesale Calls and CPS to be fully interchangeable.

4.69 Taken together this evidence suggests that for the overwhelming majority of customers, CPS and Wholesale Calls are essentially perfect substitutes. We therefore included the supply of wholesale end-to-end calls using both CPS and Wholesale Calls in the focal product defined in the Statement of Objections.

d) The relevant focal product should include wholesale end-to-end calls provided to both residential and business customers

4.70 As part of our 2009 review of the fixed retail narrowband market, Ofcom considered the supply of fixed narrowband calls in the UK (excluding the Hull area) to be split into two separate retail markets for residential and business end users. However, as we explain below, due to both the similarities in demand and the substitutability of supply for wholesale end-to-end calls between residential and business sectors, we took the view in the Statement of Objections that the relevant focal product for this case should include wholesale end-to-end calls provided to both residential and business customers in aggregate.

4.71 Resellers supplying the residential and business sectors demand an almost identical product. Both require national UK coverage, a reliable service, and for prices to be as low as possible. There is also often a common requirement for both business and residential sectors for more frequently dialled numbers, such as geographic calls and calls to mobiles, to be charged at lower wholesale margins than less frequently dialled numbers.

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126 See the discussion at paragraph 6.13 below.

127 See paragraphs 3.61 to 3.63 above.

128 See paragraph 6.14 in the market research on resellers of wholesale end-to-end calls, set out in Annex 2 below.

129 See paragraph 6.20 in the market research on resellers of wholesale end-to-end calls, set out in Annex 2 below. Only six of the 38 respondents questioned did not consider Wholesale Calls and CPS to be fully interchangeable. When asked for the reasons why Wholesale Calls and CPS might not be fully interchangeable, the main reason provided was price (not functionality).
Furthermore, there do not appear to be any significant supply-side barriers that would prevent BT and CPSOs from moving between supply to residential and business reseller sectors in response to a change in relative prices at the downstream level. Indeed, all the large CPSOs and BT are active in both sectors. One reason for this is that there are significant economies of scope in supplying residential and business customers, e.g. business and residential use of networks is often at different times of day.

In addition, we also noted in the Statement of Objections that the provider of wholesale end-to-end calls may not know, for any given reseller customer, whether that customer intends to supply calls to the residential or business sector. Indeed, some resellers may supply both types of customer simultaneously through the same wholesale end-to-end calls contract.

Taken together this evidence suggests that the provision of wholesale end-to-end calls to residential and business sectors is highly comparable in terms of both the nature of demand and the substitutability of supply. We therefore included the supply of wholesale end-to-end calls to both residential and business sectors in the focal product defined in the Statement of Objections.

**BT’s representations on the relevant focal product**

BT argues that Ofcom has been unclear in relation to its conclusions on bundles as to whether it is adopting the position that, for the purposes of calculating market shares, products bundled with wholesale end-to-end calls should be excluded, or whether Ofcom is going further and adopting the position that stand-alone wholesale end-to-end calls products are not constrained by bundled offers that include wholesale end-to-end calls.

BT reserves its position as to whether the downstream market was comprised of:

(i) a series of markets for different wholesale products;

(ii) a single market for bundles of wholesale products; or

(iii) both individual and bundled product markets.

BT suggests that, when competitive effects are properly analysed, nothing should turn on which market definition was used. BT notes that if Ofcom defines a market based around calls rather than bundles, it should include calls sold within bundles within that market.

BT argues that bundled offerings provide an important competitive constraint to stand-alone offerings of wholesale end-to-end calls. Most resellers sell more than voice services alone, so a hypothetical monopolist of stand-alone wholesale end-to-end calls would not be able profitably to achieve a SSNIP due to the constraint imposed by bundled offers.

As discussed in paragraphs 4.27 to 4.28 above, BT argues that the Prodata report is defective and cannot be used to help inform the focal product analysis.

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130 See paragraphs C.87 to C.96 of BT’s Response.

131 Paragraph C.91 of BT’s Response.
Conclusions on the relevant focal product in this case

4.79 Contrary to BT’s apparent understanding, it is not our position that the call elements of product bundles that contain wholesale end-to-end calls should be excluded from our focal product. We recognise that such bundled offers may act as a constraint on stand-alone wholesale end-to-end calls products and that the calls elements of these bundles should be included in our analysis. It is the other (non-wholesale end-to-end calls) products that are sold as part of the bundle that we exclude from our focal product. Thus, although calls, broadband and subscription TV services may be sold in a bundle together, it is only the calls element that is part of the focal product as the other two elements are not substitutes for calls.

4.80 We therefore proceed on the basis that the relevant focal product is ‘the supply of wholesale end-to-end calls’, incorporating both the supply of national and international calls, the supply using both CPS and Wholesale Calls, and the supply to both residential and business resellers. The focal product does not include other products or services that are sometimes sold in conjunction with wholesale end-to-end calls.

Direct substitutes for wholesale end-to-end calls

4.81 Direct substitution occurs if, in response to a small but significant non-transitory increase in the price (“SSNIP”) of the focal product, resellers switch to alternative wholesale products.

4.82 In the Statement of Objections we considered the extent to which there is sufficient potential for direct substitution from wholesale end-to-end calls to alternative wholesale products to suggest that the downstream market should be wider than just the focal product. We made this assessment by considering a SSNIP test for each of the possible wholesale alternatives.

4.83 The extent to which direct substitution could arise in this case is principally determined by two key factors:

- Comparability of alternatives - the extent to which substitution to alternative products will occur in the face of a price rise for wholesale end-to-end calls will depend, in large part, on the extent to which the alternatives are functionally comparable or interchangeable. In the extreme, if two alternatives are functionally equivalent, then we would anticipate a high degree of substitution. However, as the degree of the comparability of the products declines, we would expect the level of substitution to also decline; and

- Availability of alternatives - the extent to which wholesale products are available (or would be available if wholesale end-to-end calls prices rose) to resellers. The availability of alternatives depends on two factors; whether it is physically possible for an alternative to be provided at the wholesale level, and whether the firm that could provide the alternative wishes to do so.

133 The SSNIP test generally considers price increases of 5% to 10% above the competitive level.

134 We note that if it is technically possible that an alternative product could be provided to a reseller as a wholesale service, but the willingness of existing providers is a constraint on the ability of the reseller to switch to that alternative, it is conceivable that some resellers may consider moving vertically up the supply chain to self-supply the wholesale alternative (e.g. to become an LLU operator). However, such new entry would typically require significant investment (much of which is
While a firm may not currently wish to provide an alternative, it may be that it would in response to a 5% to 10% increase in the price of wholesale end-to-end calls. This should be taken into consideration when assessing the scope for substitution.

4.84 Our assessment of the extent to which the potential alternatives to wholesale end-to-end calls represent sufficiently strong substitutes so as to render a 5% to 10% price increase in wholesale end-to-end calls unprofitable for the hypothetical monopolist therefore focused on considering these two factors. Specifically, the failure of an alternative product to be either sufficiently comparable or available would be enough to suggest it is not a sufficiently strong substitute and, therefore, should be outside the downstream market definition.

4.85 We started by conducting the SSNIP test on the basis described above for each of the following potential alternative products:

- IA;
- LLU;
- VoIP;
- Cable; and
- Mobile.

4.86 We then went on to consider whether the individual direct substitutes which are too weak to be included in the market on their own, are, when taken together, sufficiently powerful to warrant inclusion in the relevant economic market.

4.87 We concluded that direct substitution constraints appeared to be weak, even when considered cumulatively, and that they would not be sufficient to prevent a hypothetical monopoly supplier of wholesale end-to-end calls raising prices by 10%.

4.88 In its Response BT does not raise objections to the general approach to considering direct constraints adopted by Ofcom (and outlined above), but does disagree with the evidence (including, as discussed at paragraphs 4.27 and 4.28 above, the Prodata report) that we used in our assessment of direct constraints and the conclusions that we reached as to the strength of these direct constraints. BT argues that the downstream market should be defined more widely.

4.89 We repeat below the analysis that we set out in the Statement of Objections in relation to each of the potential alternative products identified above and set out BT's representations on this analysis. However, given Ofcom's final conclusion on the basis of a narrower market definition is that the evidence does not support a finding that BT engaged in abusive conduct during the period investigated, it is unnecessary to define the precise boundaries of the downstream market for the purposes of this decision.

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likely to be sunk) and time to achieve for the majority of resellers. In our view such self-supply is therefore not relevant to defining the downstream market in this case. Rather, to the extent that it is relevant, it is more applicable to the assessment of downstream market power.

135 Paragraph C.98 of the BT Response.
4.90 As noted above, we recognise that the issues that BT identified with the survey are significant, and could imply that there were deficiencies in the survey evidence. Had we considered that BT’s behaviour has had or is likely to have an anti-competitive effect, we would have to review the survey evidence in detail, and consider how to remedy any defects in the evidence, before reaching a final decision in this case. However, given our overall conclusions (based on a narrower market definition), we do not consider it necessary to address the points raised by BT in relation to the way in which the survey evidence was used in defining the downstream market.

a) Does Indirect Access provide an effective substitute for wholesale end-to-end calls?

**Ofcom’s provisional views in the Statement of Objections**

4.91 IA shares many of the features of CPS. Specifically, it allows an independent CP to obtain access to calls that originate on BT’s network. These calls can then be conveyed and transited in part or in whole over the CP’s core network, allowing competition to take place both at the core network level and in the supply of wholesale end-to-end calls.

4.92 Reflecting the supply-side similarities of IA and CPS-based services, many of the suppliers of wholesale IA services are the same firms that supply CPS-based wholesale services.

4.93 The key difference between wholesale end-to-end calls and IA from an end-user’s perspective is that while wholesale end-to-end calls allows a customer to dial a number directly, calls that use IA require the customer first to dial a prefix or install and use a pre-dialler. We noted in the Statement of Objections that this factor makes IA a much less attractive proposition to residential consumers in particular, although for larger SMEs it may be possible to use a programme to allow the prefix to be dialled automatically. This customer preference has been reflected in the rapid growth of CPS and Wholesale Calls at the expense of IA.

4.94 While consumers have switched from IA to wholesale end-to-end calls over time, we considered that this need not imply that consumers would be prepared to switch back to IA from wholesale end-to-end calls in response to a change in relative prices, particularly should customers consider IA to be an inferior or a legacy product.

4.95 Our SME reseller survey asked resellers directly what they would be likely to do if the price of wholesale end-to-end calls increased permanently by 10%. Of those that indicated they would either cease to offer wholesale end-to-end calls to new customers or switch all consumers over to another product (11 out of 207 respondents), only one respondent (i.e. less than 1% of total respondents) indicated that they would choose IA.\(^{136}\)

4.96 On this basis, it appeared to us that while wholesale IA-based services may be available to resellers in the event of a wholesale end-to-end calls price rise, the extent to which end users, and therefore resellers, would be likely to consider the two products interchangeable or comparable is limited.

\(^{136}\) See paragraph 6.9 of the market research on resellers of wholesale end-to-end calls, set out in Annex 2 below.
4.97 Taken together this evidence suggested to us that it is unlikely that the threat of a reseller switching to an IA-based alternative wholesale service would be sufficiently extensive or credible to prevent a hypothetical monopoly supplier of wholesale end-to-end calls from raising prices above the competitive level. As such, we concluded that IA should not be included in the downstream market definition.

**BT’s representations**

4.98 BT questions Ofcom’s exclusion of IA-based wholesale end-to-end calls from the downstream market. BT argues that in light of the Prodata report being defective and in the absence of any convincing empirical evidence to the contrary, Ofcom’s assessment that IA shares many of the features of CPS and that there are supply-side similarities between the services raises a strong case for including IA-based wholesale end-to-end calls in the downstream market. Consequently it acts as a real constraint on the provision of wholesale end-to-end calls.

4.99 BT notes that Ofcom’s key reason for excluding IA-based calls appeared to be that IA is regarded as an inferior or legacy product to CPS because of the need to dial a prefix or install and use an pre-dialler. BT questions whether this is really the case:

(i) Ofcom had recognised that this view may not hold for larger SMEs, who may be able to use a programme to automatically dial the prefix.

(ii) IA suppliers could offer cheap devices to retail users to automatically dial the prefixes were a hypothetical monopolist for wholesale end-to-end calls to raise prices above the competitive level.

4.100 BT additionally notes IA systems offer greater flexibility than CPS (which Ofcom had not recognised) in that they allow business customers’ own Private Branch Exchanges (“PBXs”) to route calls intelligently to least-cost providers, reducing the time needed to switch providers.

b) Does LLU provide an effective substitute to wholesale end-to-end calls?

**Ofcom’s provisional views in the Statement of Objections**

4.101 In the Statement of Objections, Ofcom concluded that LLU was unlikely to provide a sufficient competitive constraint to warrant inclusion in the relevant economic market.

4.102 We identified that in April 2009 around 1.8 million phone lines in the UK were fully unbundled, which represented 6% of all lines in the UK. This compared to around 1.6 million fully unbundled lines in April 2008 (5% of UK lines).

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137 See paragraphs C.101 to C.107 of BT’s Response.

138 It is worth noting, however, that an internal BT document from June 2006 (to the key sign-off body for Wholesale Calls business decisions) discussed the addressable market for Wholesale Calls in terms of it being for CPS enabled lines. It did not include calls made using IA. The main competitors to BT were identified as the CPSOs: C&W, THUS (both now part of Vodafone), Gamma, MCI (now Verizon), Telstra and Opal (part of the TalkTalk Group). (Programme Paper for Wholesale Calls. V7, dated 15 June 2006. Author [X]. Doc ID 10601.)

4.103 Under full LLU (i.e. MPF), the whole exchange line is transferred to a CP allowing it to provide voice and data products directly to consumers. This allows a CP to provide a calls product while bypassing both BT’s wholesale call origination and BT’s core network in respect of the retail customer. Unbundling the local loop requires a retailer or wholesaler to install access equipment, including a digital supplier line access multiplex (“DSLAM”) or multiple-service access node (“MSAN”), in or close to the DLE. This incurs a significant sunk cost.

4.104 Most LLU operators have used LLU to provide their customers with a broadband-only product (SMPF). During the period covered by this investigation (i.e. from March 2008 to April 2009), only two CPs, TalkTalk and Tiscali, offered a combined broadband and voice telephony service using MPF.

4.105 While LLU-based retail services have grown rapidly, we identified two significant limitations on the extent to which LLU-based wholesale services could provide an interoperable or comparable service to wholesale end-to-end calls:

- No voice-only offer – currently there is no voice-only LLU service available (nor was there during the period of investigation). To the extent that LLU is used for voice services, it is as part of a bundle with broadband (i.e. as part of MPF). This means that in Q1 2008 LLU was not an option for the 42% of UK households who did not purchase broadband services (this reduced to 35% by Q1 2009 and Q1 2010). In addition, even for those households that consume broadband, LLU can only be used to convey voice calls where a consumer wishes to purchase calls products as a bundle with their broadband product. This may not be an attractive proposition for all customers as their requirements may be better met through separately sourcing calls and broadband.

- Lack of ubiquitous service - at the end of 2008 LLU was only technically available at local exchanges covering 84% of the UK population (85% at the end of 2009). LLU-based wholesale services would therefore be unable to achieve the level of national service coverage that wholesale end-to-end calls is able to achieve.

4.106 Ofcom explained that these constraints on the extent to which LLU and wholesale end-to-end calls can be substitutable was evidenced by the fact that [<>] providers of

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140 Communications Market Report 2010, 19 August 2010, section 5.2: http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/CMR_2010_FINAL.pdf. By April 2010, the number of fully unbundled lines in the UK had increased to 2.9 million (see: Review of the wholesale fixed analogue exchange lines markets consultation, 15 October 2010, Table 4.1 and paragraph 4.5: http://stakeholders.ofcom.org.uk/binaries/consultations/review-wholesale-fixed-exchange/summary/main.pdf).

141 Ofcom Communications Market 2010, Figure 5.63, page 335. Available at http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/CMR_2010_FINAL.pdf.

142 Ofcom Communications Market 2010, page 312 (Figure 5.33). Available at http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/CMR_2010_FINAL.pdf.

143 Although it is possible that, at the margin, a 5% to 10% increase in the price of wholesale end-to-end calls may make it viable to extend the geographic footprint of LLU, we do not consider it likely that such an expansion would be widespread, it certainly seems highly unlikely to be sufficient to close that coverage gap to the level of coverage achieved by wholesale end-to-end calls.
LLU-based [X] services, [X] and [X], were also [X] resellers of wholesale end-to-end calls. This requirement for wholesale end-to-end calls is to meet the demand for calls from customers where either LLU is not available or where customers do not wish to purchase a broadband product (or who did not wish to purchase broadband from their telephony provider). \textsuperscript{144} Ofcom was of the view that this consumption pattern not only illustrated the limitations on the degree of substitutability between LLU and wholesale end-to-end calls, it also suggested a degree of complementarity between the products for resellers.

4.107 In addition to these significant constraints on the extent to which LLU-based services and wholesale end-to-end calls would be comparable or interoperable, Ofcom identified in the Statement of Objections that the degree of substitutability between the potential alternatives was also significantly constrained by the lack of wholesale alternatives. There were two factors driving this lack of availability:

- Infeasibility of providing a voice-only service –there are currently no voice-only LLU-based services. While technically LLU could be used to provide a customer with calls only, it is unlikely to be economic to unbundle a line unless a customer purchases broadband, even if the price of wholesale end-to-end calls was to increase by 5% to 10%.
- No wholesale offering – Ofcom was unaware of any existing LLU operator providing a wholesale service based on MPF to third party resellers. It seemed unlikely that LLU operators would be willing to start providing such wholesale products in response to a 5% to 10% increase in wholesale end-to-end calls.

4.108 We noted in the Statement of Objections that it may be possible for larger resellers (including those who target residential retail customers) to invest in their own LLU network (i.e. to move vertically up the supply chain). We concluded that while this may be a plausible strategy the sunk costs that would need to be made in access equipment and the time taken for such investments to come on stream,\textsuperscript{145} suggested this possibility was better considered as one of new entry or potential competition and, therefore, was not relevant to the definition of the downstream market.\textsuperscript{146} We noted that, even if it were relevant, the investment decisions in LLU are primarily based on the expected demand for broadband services.\textsuperscript{147} As such, we were of the

\textsuperscript{144} [X].

\textsuperscript{145} For details of some of the costs faced by CPs wishing to invest in LLU see: http://www.openreach.co.uk/orpg/pricing/loadProductPrices.do?data=%2Bs55xT91%2FPruY0Pxyi4HV

\textsuperscript{146} The European Commission explains in paragraph 24 of its Notice (OJ C 372/03) that: “The third source of competitive constraint, potential competition, is not taken into account when defining markets, since the conditions under which potential competition will actually represent an effective competitive constraint depend on the analysis of specific factors and circumstances related to the conditions of entry. If required, this analysis is only carried out at a subsequent stage, in general once the position of the companies involved in the relevant market has already been ascertained, and when such position gives rise to concerns from a competition point of view.”

view that the residential and business fixed narrowband analogue calls market in
general, and the price of wholesale end-to-end calls in particular, played no
significant role in that investment decision. Furthermore, even if such new entry was
feasible on the basis of an increase in wholesale end-to-end call prices, the extent to
which it would address the limitations on LLU’s substitutability with wholesale end-to-
call would still be restricted by the product comparability issues.

4.109 To apply the SSNIP test we considered whether resellers would switch to either
wholesale or self-supplied LLU services in sufficient numbers to prevent a
hypothetical monopoly supplier of wholesale end-to-end calls raising prices by 5% to
10%. To examine this question, our SME reseller survey asked what resellers would
do in response to a 10% increase in the price of their wholesale end-to-end calls
product. Just 11 respondents (5% of total respondents) replied that they would cease
to retail wholesale end-to-end calls altogether. Of these 11, just two respondents (1%
of the total respondents) said they would offer services based on LLU as an
alternative.148 Furthermore, when asked which product they would be most likely to
use when their current wholesale end-to-end calls contract ended, only 2% of
respondents indicated that they would turn to services based on LLU.149

**BT’s representations**150

4.110 In its written response to the Statement of Objections, BT disagrees with Ofcom’s
exclusion of LLU-based services from the downstream market. BT argues that Ofcom
has failed to properly address whether a hypothetical monopolist of Ofcom’s focal
product would be able to profitably raise prices above the competitive level given the
constraints imposed by LLU-based services. BT notes that LLU-based services are
similar in nature to wholesale end-to-end calls services (and are indistinguishable
from the reseller and end user perspectives), and that both Sky and Opal are
substituting away from using wholesale end-to-end call services to using LLU-based
services.151

4.111 BT rejects Ofcom’s arguments that high sunk costs from investing in LLU mean that
the constraint from LLU-based services should be considered as one of new entry or
potential competition, rather than as being part of the same market. BT argues that
some operators already use LLU to supply voice calls and so could respond to a
SSNIP in relation to the focal product by increasing their supply of LLU-based calls.
The fact that other operators who had not already unbundled local exchanges would
need to incur sunk costs to provide LLU-based services is therefore not relevant to
the question of whether LLU acts as a constraint on wholesale end-to-end calls. In
addition, as the investments made by other operators demonstrate, the time and
investment needed to roll out LLU are not prohibitive.

148 See Figure 22 and paragraphs 6.8 and 6.9 of the market research on resellers of wholesale end-
to-end calls, set out in Annex 2 below.

149 See Figure 24 in the market research on resellers of wholesale end-to-end calls, set out in Annex 2
below.

150 See paragraphs C.108 to C.149 of BT’s Response.

151 This is consistent with BT’s view during the period covered by the investigation. The June 2006
paper identified that calls provided over alternative technologies (including LLU and VoIP) would pose
a ‘significant threat’ over the next five years.
Although agreeing that there is currently no voice-only LLU-based service available, BT questions the significance of this as LLU-based voice calls are offered as a bundle with broadband services and these bundles have the ability to constrain the prices of wholesale end-to-end calls. BT notes, however, that Ofcom has failed to consider how many consumers currently purchase calls as part a bundle and would be willing to buy a bundle of calls and broadband in response to a SSNIP in relation to wholesale end-to-end calls. This means that Ofcom cannot correctly assess the extent to which LLU-based bundles act as a constraint.

BT also questions Ofcom’s assertion that the lack of ubiquitous service coverage limits the extent to which LLU-based services could constrain the prices of wholesale end-to-end calls. BT argues that the fact that only 15% of the population live in areas not covered by LLU-based services means that LLU services are available to the majority of the population. Given that wholesale end-to-end calls are priced at the national level, rather than the local level, a hypothetical monopolist supplier of such services would be unable to price discriminate between areas with LLU coverage and those without. LLU-based services therefore act to constrain the prices of wholesale end-to-end calls as any benefits gained from non-LLU areas as a result of an increase in price of the focal product would be more than offset by losses resulting from the migration to LLU-based services in LLU areas. BT additionally notes that Ofcom has previously included LLU-based services within markets despite the lack of ubiquitous coverage.\(^{152}\)

BT notes that while Ofcom stated in the Statement of Objections that it was unaware of any existing LLU operator providing a wholesale service based on MPF to third party resellers, Opal has been supplying wholesale end-to-end calls to resellers since 2006.

BT also questions Ofcom’s assertion that there was “a degree of complementarity” between LLU-based services and wholesale end-to-end calls services (rather than substitutability), arguing that simply because [\(<\) Company 1 and Company 2] use both Wholesale Calls and LLU-based services does not mean that they are not to a large extent substitute products. BT argues that the Prodata report that Ofcom used to support its position is defective and cannot be relied on (see paragraphs 4.27 and 4.28 above).

c) Does VoIP provide an effective substitute to wholesale end-to-end calls?

**Ofcom’s provisional views in the Statement of Objections**

In the Statement of Objections, Ofcom provisionally concluded that VoIP-based services were unlikely to provide a sufficiently strong substitute to warrant inclusion in the relevant downstream market for the supply of wholesale end-to-end calls, based on the apparent lack of quality of VoIP products and the lack of substitutability with wholesale end-to-end calls.

There are a number of ways in which voice calls can be provided over Internet Protocol (“IP”), but, for the purposes of this investigation, the key element they share

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is that they allow wholesale providers or resellers the possibility of bypassing both BT call origination and its core network. We therefore assessed whether they were a potential substitute for wholesale end-to-end calls.

4.118 We noted that the use of VoIP for voice calls, like LLU, requires customers to have a broadband connection. As a consequence, we concluded that VoIP-based call services were therefore not a viable substitute for end-users that do not have a broadband connection.

4.119 We also identified that in the residential sector, quality and reliability issues associated with access to public broadband networks meant that many residential VoIP users also continued to demand calls provided over a PSTN line. This suggested that VoIP was a complement to PSTN-based calls.

4.120 In addition, there appeared to be no real possibility for retailers to switch from supplying calls using wholesale end-to-end calls to VoIP as VoIP calls can only be accessed by customers that have a broadband connection. Even for a retailer that chooses to specialise in serving broadband customers, VoIP calls were perceived by residential retailers as largely complementary to analogue calls.153

4.121 We explained in the Statement of Objections that the attractiveness of VoIP to the business sector depended largely on the quality of the broadband connection available. For large corporate organisations, who often have fibre installed directly to their building, VoIP can provide as good a quality as PSTN. In contrast, for SMEs that demand VoIP through access to the public broadband network, quality issues can be very significant. This is not least because businesses are likely to attach a relatively high value to system reliability, which public broadband networks cannot always deliver.

4.122 On the basis of both the perceived poorer quality and reliability of VoIP amongst end users, and the requirement for end users to have a broadband connection to use VoIP, we provisionally concluded in the Statement of Objections that there were significant limitations on the comparability, and therefore substitutability, of VoIP for wholesale end-to-end calls.

4.123 In the 2009 retail fixed narrowband market review, we concluded that VoIP did not offer a sufficiently strong competitive constraint to be included in either the residential or the business calls markets (though managed voice over broadband services are included in the markets).154 We reached this view on account of the perceived quality of the product, and, in the residential sector, the fact that most customers using VoIP calls also purchased calls over other networks. As VoIP does not currently provide a sufficient competitive constraint to analogue calls at the retail level, it is unlikely that retailers would switch to providing call products over VoIP in sufficient numbers to prevent a hypothetical monopoly supplier of wholesale end-to-end calls by 5% to 10%.

4.124 To obtain more direct evidence of substitutability between VoIP and analogue calls at the wholesale level, our qualitative survey asked SME resellers whether they considered VoIP to be interchangeable with wholesale end-to-end calls provided by

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153 Fixed Narrowband Retail Services Markets consultation, March 2009, paragraph 4.52. These findings were confirmed in the final statement issued on 15 September 2009.

154 Fixed Narrowband Retail Services Markets consultation, March 2009, paragraphs 4.51 and 4.52. These findings were confirmed in the final statement issued on 15 September 2009.
wholesale end-to-end calls. Only six respondents (out of 38 qualitative respondents) indicated that VoIP was interchangeable with wholesale end-to-end calls. Although very few respondents would cease to retail wholesale end-to-end calls if the price rose by 10% (11 out of 207), VoIP was the most frequently cited alternative (10 out of the 11 respondents) that resellers would switch to.

**BT’s representations**

4.125 Although BT agrees that residential customers who use VoIP services such as Skype were also likely to have a PSTN line for voice calls, it argues that this does not necessarily imply that the two services are complementary, as suggested by Ofcom. The fact that consumers consume two products does not mean that they are not substitutes. BT argues that Ofcom has therefore failed to recognise the potential for VoIP services at the further downstream level to act as an indirect constraint on the prices of wholesale end-to-end calls at the downstream level. BT again argues that the evidence from the Prodata Report used to support Ofcom’s views on this point is defective and cannot be relied on.

4.126 BT notes that there are a number of different means of providing IP telephony services which all fall within Ofcom’s description of “VoIP”. It identifies three main types of IP telephony services:

(i) IP Voice Services – these are business grade voice telephony services, often based on fibre access.

(ii) Voice over Broadband (“VoB”) – telephony services provided over a broadband path with their own dedicated telephone number. The service is not portable and the handset is connected to the customer’s broadband router.

(iii) VoIP – more akin to content services provided over a broadband connection (e.g. Skype). They are not linked to a particular end-user’s location and can be accessed from any broadband connection.

4.127 BT argues that resellers may consider these different IP telephony services to be substitutable for wholesale end-to-end calls, depending on the type of customer they were serving. For example, an SME reseller faced with a SSNIP on the price of wholesale end-to-end calls might be willing to switch to high grade IP Voice Services, but would be unlikely to be willing to switch to VoB or VoIP based services.

4.128 BT claims that IP Voice Services are a real and growing option for voice communication for businesses in particular, noting that many network operators (including Opal, Gamma, C&W and BT) provide these services to resellers in order for them to develop communication solutions for business customers. BT argues that these services should be included in the downstream market as they provide a direct

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155 See paragraph 6.21 in the market research on resellers of wholesale end-to-end calls, set out in Annex 2 below.

156 See paragraph 6.9 of the market research on resellers of wholesale end-to-end calls, set out in Annex 2 below.

157 See paragraphs C.150 to C.161 of the BT Response.

158 See paragraphs 4.27 and 4.28 above.
constraint on wholesale end-to-end calls. BT suggests that Ofcom itself recognises
this at paragraph 4.89 of the Statement of Objections where we stated that: “for large
corporate organisations, who often have fibre installed directly to their building, VoIP
can provide as good a quality as PSTN”.

4.129 BT additionally claims that VoIP and VoB services provide real alternatives to certain
types of traditional voice calls for residential customers. VoIP services are becoming
increasingly more popular amongst the youth market and as an alternative for making
international calls. The fact that VoIP and VoB require customers to have a
broadband connection does not justify excluding them from the relevant market as
approximately 71% of UK households now have a broadband connection. Even if
VoIP and VoB services are not included in the downstream market, they should be
taken into consideration as effective constraints when assessing BT’s market power
and the effects of BT’s conduct.

d) Does Cable provide an effective substitute for wholesale end-to-end calls?

Ofcom’s provisional views in the Statement of Objections

4.130 In the Statement of Objections we provisionally concluded that cable did not provide
a sufficiently strong substitute to be included in the downstream market.

4.131 We identified that the ability of resellers to substitute from wholesale end-to-end calls
to a wholesale end-to-end calls product provided by Virgin Media over its cable
network appeared to be significantly limited by both the comparability and availability
of any wholesale product.

4.132 Firstly, like LLU, we took the view that the interoperability of cable-based wholesale
products is constrained by the cable network’s lack of ubiquitous coverage. Only
around 50% of UK households are within cable’s geographic footprint.159
Furthermore, not only is cable’s footprint highly limited, its share of access lines is
even more limited. For the period of the investigation, only 18% of residential
analogue exchange lines in the UK (excluding Hull) were provided via cable.160

4.133 Secondly, we noted that Virgin Media does not currently (nor did it over the period of
the investigation) offer a wholesale end-to-end calls product to third parties. Although
there are few technical barriers to prevent it from doing so, Virgin Media’s business
model during the period of the investigation was, and has historically, been based on
competing in the retail markets. To date, Virgin Media has not used its cable network
to target any wholesale market and would appear to have little incentive for doing so
if it can provide services to the respective retail market directly. To do so would risk
Virgin Media losing retail customers (from whom it earns higher margins than could
be earned at the wholesale level) to those companies to which it was selling
wholesale services. While Virgin Media may change its business model in response
to a change in relative prices, we considered in the Statement of Objections that this
possibility was best analysed as potential new entry rather than supply-side
substitution.

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159 Fixed Narrowband Retail Services Markets consultation, March 2009, paragraph 5.46. These
findings were confirmed in the final statement issued on 15 September 2009.

160 Fixed Narrowband Retail Services Markets consultation, March 2009, paragraph 5.24. These
findings were confirmed in the final statement issued on 15 September 2009.
BT’s representations

4.134 BT recognises in its response to the Statement of Objections that cable does not impose a direct constraint on the pricing of wholesale end-to-end calls and that it would inevitably fail a SSNIP test in the absence of evidence that Virgin Media would introduce a wholesale product in response to an increase in the price of the focal product.

4.135 BT argues, however, that Virgin Media’s retail call offerings provide an indirect constraint to wholesale end-to-end calls as they are in direct competition with calls originating on the PSTN in the further downstream market. This should be taken into consideration when assessing BT’s market power and the effects of its conduct.

4.136 BT disputes the suggestion that the limited geographic scope of cable services (i.e. that only around 50% of UK households are served by cable) means that cable does not provide a competitive constraint as calls are priced at a national level. BT makes reference to Ofcom’s findings in the 2003 and 2009 Fixed Narrowband Retail Services reviews, where Ofcom included cable in the retail market despite its more limited geographic coverage.

e) Does Mobile provide an effective substitute for wholesale end-to-end calls?

Ofcom’s provisional views in the Statement of Objections

4.137 In the Statement of Objections we provisionally concluded that wholesale mobile calls should be excluded from the downstream market. Our conclusions were based on the 2009 retail narrowband market review, which found that although substitution between fixed and mobile calls was increasing, they remained separate markets at the retail level. The review found that consumers (both residential and business) had a strong preference for purchasing both fixed and mobile minutes. Given the complementary, rather than substitutable, nature of the products at the retail level we considered it unlikely that a reseller of fixed calls would switch to retailing mobile calls in response to a 5% to 10% increase in the price of wholesale end-to-end calls.

BT’s representations

4.138 In its response to the Statement of Objections, BT disagrees with Ofcom’s suggestion that there is a degree of substitutability between fixed and mobile calls simply because retail customers purchase both fixed and mobile calls. BT argues that the empirical evidence available suggests that mobile calls are readily substitutable for fixed line calls. BT makes reference to data published by Ofcom in its 2010 Communications Market report, which suggests that the average fixed and mobile voice call prices have been converging (7.3ppm and 8.8ppm respectively in 2009) and that there appears to be substitution between the two as the volume of mobile voice call minutes has increased as fixed voice call minutes has decreased.

4.139 BT argues that although mobile calls are not direct constraints at the wholesale level, the level of substitutability at the retail level should form an important aspect of any

161 See paragraphs C.162 to C.166 of BT’s Response.

162 Fixed Narrowband Retail Services Markets review, September 2009, paragraphs 4.46 to 4.54.

163 See paragraphs C.167 to C.169 of BT’s Response.
consideration of indirect constraints and the analysis of market power at the downstream level.

**Cumulative effect of individual direct substitutes on the downstream market definition**

**Ofcom’s provisional views in the Statement of Objections**

4.140 In addition to considering whether individual direct substitutes were sufficient to be included in the relevant economic market, we also considered in the Statement of Objections whether the cumulative effect of the alternatives was significant and that the relevant market should therefore be widened.

4.141 To test whether the cumulative effect of direct constraints might be significant we asked SME resellers in our survey (see Annex 2) how their commercial strategy would change were the price of wholesale end-to-end calls to permanently increase by 10%.

**Table 4.1: Effect of 10% price increase of wholesale end-to-end calls**

<table>
<thead>
<tr>
<th>% of respondents (base = 207)</th>
</tr>
</thead>
<tbody>
<tr>
<td>We would continue to offer wholesale end-to-end calls</td>
</tr>
<tr>
<td>We would continue to offer wholesale end-to-end calls but also seek to offer customers alternative products</td>
</tr>
<tr>
<td>We would continue to offer wholesale end-to-end calls but try to provide this service ourselves or sponsor/encourage entry of a new CPS supplier</td>
</tr>
<tr>
<td>We would cease to offer wholesale end-to-end calls to new customers</td>
</tr>
<tr>
<td>We would cease to offer wholesale end-to-end calls to new customers and switch existing customers to an alternative product</td>
</tr>
<tr>
<td>Refused/not stated/don’t know</td>
</tr>
</tbody>
</table>

Source: SME Reseller Study, Prodata
Note that figures rounded to the nearest per cent.

4.142 As Table 4.1 indicates respondents to our survey overwhelmingly indicated that they would continue to offer wholesale end-to-end calls. Only 5% of customers indicated that they would cease to offer wholesale end-to-end calls to either new or existing customers or both.

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164 See Figure 22 in the market research on resellers of wholesale end-to-end calls, set out in Annex 2 below.
4.143 With 84% of respondents indicating that they would continue to purchase wholesale end-to-end calls were prices to increase by 10%, we provisionally concluded in the Statement of Objections that direct substitution constraints are weak, even when considered cumulatively, and that they would not be sufficient to prevent a hypothetical monopoly supplier of wholesale end-to-end calls raising prices by 10%.

**BT’s representations**

4.144 BT argues in its response to the Statement of Objections that the evidence above shows that the cumulative effect of the various potential competitive constraints would constrain a hypothetical monopolist. BT notes that Ofcom’s cumulative effects analysis is reliant on the Prodata report, which it considers is defective and therefore cannot be relied on.

4.145 BT suggests that any increase in the price of the focal product would be likely to lead to a reduction in demand and a corresponding increase in the demand for alternatives such as LLU and IA-based wholesale calls. This substitution would make a SSNIP unprofitable due to the cumulative effects of the constraints. Even if the alternative products were excluded from the downstream market, BT argues that they should be taken into account when assessing BT’s market power and the effects of its conduct.

**Ofcom’s conclusions on direct substitutes**

4.146 BT’s arguments in relation to direct substitutes can be broadly summarised as being that Ofcom has failed to recognise the extent to which alternative products act as direct constraints on wholesale end-to-end calls and, as a result, has inappropriately excluded some of these products from the downstream market definition.

4.147 As set out above, our analysis of effects in Section 7, which is based on the narrower downstream market definition set out in the Statement of Objections has led us to conclude that we are not satisfied that the evidence demonstrates that, on the balance of probabilities, BT’s conduct has had an adverse impact on competition (or that it is likely to have such an effect in the future given the current market conditions). Any widening of the market definition as a result of changing our approach to direct substitutes would not change our conclusions as anti-competitive effects would not be more likely under a wider market definition than under the narrower definition.

4.148 In light of this, we do not consider that it is necessary for Ofcom to conclude definitively on the precise boundaries of the downstream market in this case. For the purposes of this decision we have therefore proceeded on the basis set out in the Statement of Objections that IA, LLU, VoIP, cable and mobile products do not to provide a sufficiently strong substitute to warrant inclusion in the relevant downstream market for the supply of wholesale end-to-end calls.

**Indirect substitutes**

4.149 As explained in paragraph 4.53 above, an indirect substitute to wholesale end-to-end calls is one of a range of call products an end-user (as opposed to a reseller) could

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165 See paragraphs C.170 to C.175 of the BT Response.

166 See paragraphs 4.27 and 4.28 above.
switch to if the price of wholesale end-to-end calls increases. Therefore, even if there are only limited direct substitutes for wholesale end-to-end calls, a hypothetical monopolist may nevertheless find it unprofitable to increase the price of wholesale end-to-end calls above competitive levels because of the threat that end users may switch to substitute retail products.

4.150 We identified in the Statement of Objections that in this case the potential set of substitute products that would be available to end users is broadly analogous to that set faced by resellers (e.g. LLU, VoIP, cable, etc). We therefore provisionally concluded, for similar reasons to those in our assessment of the products as direct constraints, that we would not expect indirect substitution at the retail level to constrain the price charged by a hypothetical monopolist of wholesale end-to-end calls to the competitive level. We noted that, even if we were to conclude that indirect substitutes were sufficiently strong to warrant widening the downstream market definition, this would not alter our conclusion that BT is active in the downstream market.

4.151 In its response to the Statement of Objections, BT argues that Ofcom’s analysis of indirect substitutes is “manifestly inadequate” as many of the considerations used by Ofcom to dismiss direct constraints are of little relevance to the question of whether those products impose indirect constraints at the further downstream level. Using cable and mobile services as examples, BT argues that even if these services are not direct constraints, at the retail level they constrain the prices of the focal product. BT notes that Ofcom had recognised cable as an indirect constraint when defining the call origination market in the 2009 Fixed Narrowband Services Wholesale market review.167

**Ofcom’s conclusions on indirect substitutes**

4.152 As set out above, our analysis of effects in Section 7, which is based on the narrower downstream market definition set out in the Statement of Objections has led us to conclude that we are not satisfied that the evidence demonstrates that, on the balance of probabilities, BT’s conduct has had an adverse impact on competition (or that it is likely to have such an effect given the current market conditions). Any widening of the market definition as a result of changing our approach to indirect substitutes would not change our conclusions as anti-competitive effects would not be more likely under a wider market definition than under the narrower definition.

4.153 In light of this, we do not consider that it is necessary for Ofcom to conclude definitively on the precise boundaries of the downstream market in this case. In this decision we have retained the view set out in the Statement of Objections that indirect substitution at the retail level is not expected to constrain the price charged by a hypothetical monopolist of wholesale end-to-end calls to the competitive level.

**Self-supplied sales of wholesale end-to-end calls should be excluded from the downstream market definition**

4.154 Having considered whether the relevant downstream product definition should be wider than the focal product, the Statement of Objections then considered whether it includes the supply of wholesale end-to-end calls to third parties only (i.e. sales to the “merchant market”) or whether it also includes self-supplied products.

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167 Paragraphs C.176 to C.185 of BT’s Response.
4.155 If a vertically integrated provider would switch capacity used by its downstream arm into the merchant market in response to a 5% to 10% price rise, then this self-supply should be included in the relevant downstream market.

4.156 BT is by far the largest self-supplier of wholesale end-to-end calls. It is active in the downstream market irrespective of whether or not self-supply is included in the market definition. Our preliminary conclusions in the Statement of Objections were not therefore sensitive to the treatment of self-supply when defining the market. As a consequence, we did not undertake a full assessment of whether or not self-supply should be included in the relevant downstream market definition. Rather, we concluded that self-supply should be excluded for the reasons set out in the paragraphs below. We consider our approach of focussing only on the merchant market is prudent when investigating an alleged breach of the Act that has, or may have, given rise to foreclosure.

4.157 Most of the leading CPSOs have some presence in the downstream reseller market. Gamma, for example, owns reseller Uniworld, while [\text{Company 1}]’s resale business uses [\text{\ldots}].

4.158 In the Statement of Objections we considered that the substitution possibilities were likely to vary between different vertically integrated resellers. We therefore looked at the substitution possibilities first for BT, and then separately considered whether self-supply by CPSOs should be included in the market definition.

4.159 BT Retail purchases the necessary inputs for the provision of its retail calls business from BT Wholesale and does not currently make any significant purchase of wholesale end-to-end calls in the merchant market. While it is technically feasible for BT to switch from self-supply to purchasing calls from the merchant market, in reality this is unlikely to happen. Given that BT is the hypothetical monopolist, it requires BT to compete with itself to defeat a price rise in the merchant market.

4.160 For these reasons the Statement of Objections considered that self-supply by BT was unlikely to constrain the supply of wholesale end-to-end calls in the merchant market and should not be included in the relevant downstream merchant market for the purposes of this investigation. BT did not dispute this point in its Response.

**CPSOs**

*Ofcom’s view in the Statement of Objections*

4.161 In the Statement of Objections we provisionally concluded that supply-side substitution was unlikely to provide a significant competitive constraint as, like BT, CPSOs were already active in the merchant market and bidding for contracts. The extra capacity that CPSOs may allocate to the merchant market was unlikely to have any significant impact on price as their networks were not subject to capacity constraints at the time\(^{168}\) and therefore any additional capacity allocated to the merchant market would not need to be diverted from self-supply.

4.162 Most CPSOs reseller operations, like BT, generally meet their wholesale needs through self-supply (i.e. through their wholesale CPS operation) rather than by making purchases on the merchant market. As such, this self-supply would not

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\(^{168}\) As noted in paragraphs 3 and 52 of CRA International’s report for BT *Do the Gamma and Thus Complaints provide a plausible theory of harm?* (13 March 2009).
generally provide any significant demand-side constraint on the price of wholesale end-to-end calls in the merchant market.\textsuperscript{169}

4.163 We recognised in the Statement of Objections that [\textgreater\textless] Company 1 was an important exception. Prior to 2008, [\textgreater\textless] Company 1 met its retail requirements through self-supply ([\textgreater\textless]). Now it is [\textgreater\textless] purchaser of wholesale end-to-end calls in the merchant market, after contracting with BT Wholesale to purchase Wholesale Calls in 2008 instead of using CPS.\textsuperscript{170} The strategic decision to withdraw in part from self-supplying minutes was taken largely on account of the declining prices in the merchant market, and, in particular, the low rates offered by BT.\textsuperscript{171} Accordingly, it seemed plausible that if prices in the merchant market were to subsequently rise, [\textgreater\textless] Company 1] could increase the proportion of its wholesale end-to-end call requirements that were met from self-supply.

4.164 However, while the threat to return to self-supply offers [\textgreater\textless] Company 1] some individual protection from any attempt at monopolising the merchant market, we considered in the Statement of Objections that it was unlikely to provide wider protection to resellers who do not have a credible threat to self-supply. The reason for this was that suppliers of wholesale end-to-end calls could readily price discriminate, offering lower prices to those customers who had the most credible outside options.

4.165 For the above reasons, we considered in the Statement of Objections that CPSO self-supply did not constrain the supply of wholesale end-to-end calls in the merchant market and should not be included in the relevant downstream merchant market.

\textit{BT's representations}\textsuperscript{172}

4.166 It its representations in response to the Statement of Objections, BT identifies two forms of self-supply that it considers relevant to market definition in this case. The first is where a downstream competitor avoids buying call origination as an upstream input by integrating upstream and owning its own access network. The second form of self-supply is where a competitor in the further downstream (retail) market avoids using a third party’s wholesale end-to-end call service by using its own network or by purchasing call origination (both of which would be done in combination with its own or a third party's core network and with call termination).

4.167 BT suggests that there are three separate questions that should be asked in an assessment of whether self-supply is part of the relevant market:

(i) In response to a SSNIP in the downstream market, would firms that are currently self-supplying divert capacity from self-supply to serve the merchant market to such an extent as to make the SSNIP unprofitable?

\textsuperscript{169} The same applies to Virgin Media which self-supplies over its cable network but does not provide any services to the merchant market.

\textsuperscript{170} [\textgreater\textless] continues to provide some telephony services using CPS [\textgreater\textless].

\textsuperscript{171} [\textgreater\textless].

\textsuperscript{172} See paragraphs C.186 to C.196 of the BT Response.
(ii) In response to a SSNIP in the downstream market, would customers in the merchant market divert their demand to self-supply to such an extent as to make the SSNIP unprofitable?

(iii) Does the supply at the further downstream (retail) level by firms that self-supply act as an indirect constraint on supply in the downstream market?

4.168 BT argues that Ofcom has only asked the first of these questions in the Statement of Objections and that the wrong conclusions are drawn from this analysis. Having recognised that the downstream market is characterised by excess capacity, Ofcom should have concluded that this would necessarily constrain any future attempt to raise prices.

4.169 BT further argues that the second and third questions identified above are the most important in this case and that on the facts they provide strong arguments that self-supply should be included in the downstream market.

(i) It appears that some resellers (particularly [Company 1 and Company 2]) would shift to self-supply on a sufficiently large scale so as to render any price increase unprofitable. The fact that Wholesale Calls volumes are falling as [Company 1 and Company 2] self-supply more of their call requirements also supports this position.

(ii) Self-supplying operators (e.g. those using LLU or their own fibre for call origination, in conjunction with call termination and their own or third party core networks) compete for customers in the further downstream (retail) market with operators who have purchased wholesale end-to-end calls. The prices charged by resellers whose products are based on wholesale end-to-end calls are thus inevitably constrained by resellers who can self-supply. Any increase in price at the downstream market level would increase the input costs at the further downstream level and the therefore the retail prices charged to customers. This would lead customers to switch to retail calls provided by self-supplying operators.

Conclusions on self-supply

4.170 BT’s arguments in relation to self-supply can be broadly summarised as being that Ofcom has inappropriately excluded types of self-supply from the downstream market that act as constraints on the pricing of wholesale end-to-end calls.

4.171 However, as noted above, given our overall conclusion that there are no grounds for action, we do not consider that it is necessary to conclude on the precise boundaries of the downstream market. We therefore proceed on the basis that the relevant downstream market definition for this investigation should relate only to sales to the merchant market for wholesale end-to-end calls and not include self-supplied sales.

Geographic market definition

4.172 In Ofcom’s 2009 review of the wholesale fixed narrowband markets, we concluded that there is a single market in the UK outside of Hull for exchange lines and call origination. We proposed a separate market for the same services in the Hull area.

4.173 In arriving at these conclusions, we recognised that there are some variations in the competitive conditions due to the presence of cable and/or LLU in some parts of the UK. While there may be some difference in competitive conditions between areas
with and without cable, and with and without LLU, competing CPs are unable to offer a national service without having access to BT’s network. Since competition on the supply side of the market takes place at the national level with uniform pricing and national marketing campaigns, it seems appropriate to define a single national market within the UK excluding Hull.

4.174 Based on similar considerations, we identified in the Statement of Objections that there is likely to be a single geographic market for the supply of wholesale end-to-end calls in the UK (excluding the Hull area). All UK suppliers provide (and resellers demand) a complete UK wide (excluding Hull) network coverage. While no supplier is able to offer such complete network coverage on its own, CPSOs are able to offer complete coverage through infrastructure sharing agreements and transit agreements.

4.175 In the Hull area, the fixed telephone network is owned by KCOM. Wholesalers can only provide a service through negotiating access to KCOM’s network and there have been very limited examples of this occurring. Given the separate geographic markets and that the investigation is focussed on the conduct of BT and not KCOM, we considered in the Statement of Objections that this area was outside the scope of our investigation.

4.176 In its response to the Statement of Objections BT agrees with Ofcom’s position in relation to the relevant geographic markets. We therefore conclude that the relevant geographic market is a national market, but excludes the Hull area.

Conclusions on the downstream market

4.177 As set out above, BT raises a number of issues with our downstream product market definition. We have set these out in detail, in the interests of transparency, to allow all parties to see the arguments and evidential issues raised by BT. It would take a considerable amount of further information gathering and analysis to address and finally determine each of these issues. We consider that to be unnecessary for the purposes of this decision.

4.178 Our analysis of effects in Section 7, which is based on the narrower downstream market definition set out in the Statement of Objections has led us to conclude that we are not satisfied that the evidence demonstrates that, on the balance of probabilities, BT’s conduct has had an adverse impact on competition (or that it is likely to have such an effect given the current market conditions). Any widening of the market definition would not change our conclusions as anti-competitive effects would not be more likely than under the narrower definition.

4.179 Our conclusion that BT is active on the downstream market would not change if the boundaries of the downstream market were widened.

4.180 Accordingly, we do not need to establish the precise boundaries of the downstream market in this case. For the purposes of this decision we have retained our findings in the Statement of Objections i.e., that the relevant downstream market is the market for wholesale end to end calls in the UK (excluding the Hull area).

173 See paragraph C.197 of BT’s Response.
Upstream markets

4.181 As described in paragraph 2.12 necessary inputs for the provision of a wholesale end-to-end call include call origination, core network services and call termination. As set out below, call origination and termination are regulated inputs which BT is required to provide over its own network by regulation.

4.182 Ofcom has already carried out a number of detailed assessments of the markets in which call origination, call termination and core network services are supplied, in exercise of our powers (and as we are required to do) under the Communications Act 2003 and the Framework Directive.174

4.183 We first reviewed these markets in 2003, publishing statements setting out our conclusions on 28 November 2003.175 We further reviewed the markets in 2009. On 19 March 2009, we published a single consultation document outlining our proposals for the appropriate definition of all these markets.176 This was followed by a Statement on 15 September 2009.177 While the Statement contains Ofcom’s conclusions, these two documents should be read in conjunction as the 19 March 2009 consultation sets out Ofcom’s original analysis in full.

4.184 As noted above, when carrying out market reviews under the Framework Directive, we are required to take account of the Commission’s Recommendations and Guidelines, and to define the relevant markets appropriate to national circumstances, in particular relevant geographic markets within the UK, in accordance with the principles of competition law.178

4.185 We carried out our assessment of market definition in this review in accordance with the principles set out in the Framework Directive, and applied the general principles of competition law, using the approach to market definition generally used by UK competition authorities. In particular, we used the approach set out in the OFT’s

174 For more information on the legal framework and background to market reviews, see Chapter 1 of the Review of the fixed narrowband wholesale exchange line, call origination, conveyance and transit markets statement, 28 November 2003: http://stakeholders.ofcom.org.uk/binaries/consultations/750148/fixednarrowbandstatement.pdf.


guidelines on Market Definition. This same approach is used to define relevant markets for the purposes of investigations under the Act.

**Wholesale Call Origination**

4.186 “Call origination” refers to the conveyance of all signals (including relevant control signals) originating on an end-user customer’s exchange line to the first point in the network where those signals can be accessed by another CP. Call origination can only be provided by the network to which a customer’s exchange line is physically connected.

4.187 A CP can obtain wholesale call origination in two main ways:

(i) Self-supply call origination; e.g. through owning/renting the customer’s exchange line (including through LLU, PPCs, cable and fibre to buildings); or

(ii) Purchase wholesale call origination from the owner of the exchange line.

4.188 Ofcom first reviewed the call origination markets in 2003 as part of its review of the fixed narrowband wholesale exchange line, call origination, conveyance and transit markets. Call origination was defined as being:

“…the service that conveys calls originating on a customer’s exchange line from the remote concentrator to and over the local exchange.”

4.189 In relation to call origination, we identified two separate markets; call origination on fixed public narrowband networks in the UK excluding the Hull area and call origination on fixed public narrowband networks in the Hull area. BT was designated with SMP in the market for call origination on fixed public narrowband networks in the UK excluding the Hull area.

4.190 Our 2009 review considered whether BT wholesale call origination was in the same market as origination provided over rival networks. Ofcom found that competition between BT and non-BT call origination was very limited. For example:

“This substitution [between BT and non-BT call origination] has, to date, been unlikely to be either sufficiently strong or sufficiently timely to impose anything other than a weak competitive constraint.”

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180 For more information on the approach taken see Section 4 of the Review of the fixed narrowband services wholesale markets statement, 15 September 2009.


183 See Chapters 2 and 3 of the Review of fixed narrowband wholesale exchange line, call origination, conveyance and transit markets statement, 28 November 2003.
This constraint may increase if more CPs chose to deploy LLU capable of providing narrowband services.”

4.191 Our 2009 review found that the relevant market product market for call origination is “wholesale call origination on a fixed narrowband network”. However, we concluded that while call origination on alternative fixed networks may or may not impose a constraint on BT’s pricing of wholesale call origination, for clarity they should be included in the relevant product market.

4.192 Similarly we considered in that review that although some variations in conditions exist due to the presence of cable and/or LLU in some parts of the UK, conditions are sufficiently homogenous to result in a single market for the UK outside Hull. This was due to the uniform national voice pricing and because CPs are reliant on BT’s network for full national and geographic product competition.

4.193 The two reviews of call origination book-end the period which was the main focus of our investigation into BT’s Wholesale Calls pricing, providing a consistent market definition across the period. Given the extensive and recent/contemporaneous nature of the market definition exercise carried out in the most recent review, the fact that it was carried out using the same methods as would be used for a market definition exercise under the Act, and considering evidence of the characteristics of the market between 2003 and 2009 (i.e. the period in which BT carried out the pricing behaviour about which we are concerned) we proposed in the Statement of Objections to follow the market definition assessment laid out in that document, for the purposes of this investigation. We do not repeat the full assessment, but refer to the consultation document and Statement.

4.194 In its response to the Statement of Objections, BT notes that the call origination market defined by Ofcom in the two market reviews was not limited to BT call origination but included call origination over LLU and cable. BT agrees with this position and suggests that this is entirely consistent with its arguments as to how the downstream and further downstream markets should be defined. BT additionally argues that mobile call origination represents an indirect constraint on the supply of wholesale end-to-end calls.

4.195 Having considered the points made by BT in relation to the proposed call origination market definition that we set out in the Statement of Objections, we remain of the view that the market should be defined in the manner laid out in the 2003 and 2009 market review documents. For the reasons set out in those documents, we believe that mobile call origination does not fall within the same market as that for call origination on fixed lines. We do not consider that any evidence we have seen during the course of this investigation would cause us to alter this assessment of market definition for the purposes of this decision.

184 Review of the fixed narrowband services wholesale markets consultation, 19 March 2009, paragraph 6.64: http://stakeholders.ofcom.org.uk/binaries/consultations/review_wholesale/fnwm.pdf. This was confirmed in the Review of the fixed narrowband services wholesale markets statement, 15 September 2009.

185 See paragraph 6.14 of the Review of the fixed narrowband services wholesale markets consultation, 19 March 2009.

186 See paragraph C.200 of BT’s Response.
4.196 We therefore consider that call origination is supplied on the market for wholesale call origination on a fixed narrowband network in the UK (excluding the Hull area). As call origination (specifically BT call origination) is an essential input into the supply of wholesale end-to-end calls, this is a relevant upstream market for the purposes of our decision.

Core Networks

4.197 Providers of wholesale end-to-end calls usually use their own core network (in whole or in part) to convey calls. Where they are unable to use their own networks, they will purchase conveyance or transit services from other CPs.

4.198 Ofcom first reviewed the markets for conveyance and transit in 2003\textsuperscript{187} and identified three different product markets:

(i) Local-tandem conveyance and transit on fixed public narrowband networks;

(ii) Inter-tandem conveyance and transit on fixed public narrowband networks; and

(iii) Single transit\textsuperscript{188} on fixed public narrowband networks.

We refer to these three markets collectively as the core network markets.

4.199 Ofcom reviewed the local-tandem and inter-tandem markets again in 2005.\textsuperscript{189} We concluded that the market definition for local-tandem conveyance and transit remained unchanged since the 2003 market review.\textsuperscript{190} In relation to inter-tandem conveyance and transit, we also concluded that the market definition remained unchanged.\textsuperscript{191}

4.200 More recently, Ofcom carried out a further review of the core network markets in 2009/10. In the statement and further consultation of September 2009, we concluded that the local-tandem conveyance market should be defined on the same terms as previously.\textsuperscript{192} Our February 2010 statement concluded that the inter-tandem conveyance and transit market and the single transit market should be defined on the same terms as in the 2003 statement.

4.201 The 2003 and 2009/10 reviews of the core network markets book-end the period over which we investigated BT’s Wholesale Calls pricing, providing consistent market


\textsuperscript{188} Single transit is the conveyance of calls which originate and terminate at the same DLE.


\textsuperscript{190} Paragraphs 3.14 to 3.16 of the Review of BT’s network charge controls, 18 August 2005.

\textsuperscript{191} See paragraphs 3.17 to 3.19 of the Review of BT’s network charge controls, 18 August 2005.

definitions across the period. These three separate core network markets (defined in paragraph 4.195 above) are therefore relevant markets for our decision. BT makes no comment in its response to the Statement of Objections in relation to our core network market definitions.

Wholesale call termination

4.202 Call termination is analogous to call origination in that it relates to the conveyance of signals from the terminating customer’s exchange line to the first point in the network where those signals can be accessed by another CP. Like call origination, call termination can only be provided by the network to which the customer’s exchange line is physically connected.

4.203 The originating caller needs to be able to connect with people who are on other fixed and mobile networks. A wholesaler of the end-to-end calls product therefore needs to ensure that calls can flow seamlessly between all networks, which requires it to purchase call termination from all network providers.

4.204 There are therefore numerous upstream call termination inputs required to produce wholesale end-to-end calls (e.g. mobile call termination, international call termination, etc). Ofcom has considered on a number of occasions the markets in which these termination services are provided, for example:

- Review of the fixed geographic call termination markets (November 2003);\textsuperscript{193}
- Review of the wholesale unmetered narrowband Internet termination services market (November 2003);\textsuperscript{194}
- Review of wholesale mobile voice call termination (June 2004,\textsuperscript{195} March 2007\textsuperscript{196}); and
- Review of wholesale international services markets (July 2006).\textsuperscript{197}

4.205 While there are numerous upstream termination services (and therefore markets) consumed by wholesale end-to-end calls, for the purposes of this investigation into an alleged abuse of a dominant position by BT, the relevant termination markets are those in which BT operates in and therefore could be dominant. We have therefore focussed the discussion below on fixed narrowband call termination provided by BT.

4.206 Ofcom first reviewed the call termination markets in 2003 in its review of fixed geographic call termination markets.\textsuperscript{198} We concluded that there were no direct

\textsuperscript{193} \url{http://stakeholders.ofcom.org.uk/binaries/consultations/750148/Eureviewfinala1.pdf}.

\textsuperscript{194} \url{http://stakeholders.ofcom.org.uk/binaries/consultations/750148/internet_term_uk_ex_hull.pdf}.

\textsuperscript{195} \url{http://stakeholders.ofcom.org.uk/binaries/consultations/mobile_call_termination/statement/Statement_on_Wholesale_Mobi1.pdf}.

\textsuperscript{196} \url{http://stakeholders.ofcom.org.uk/binaries/consultations/mobile_call_term/statement/statement.pdf}.

\textsuperscript{197} \url{http://stakeholders.ofcom.org.uk/binaries/consultations/wsidd/statement/statement.pdf}.

\textsuperscript{198} \textit{Review of fixed geographic call termination markets}, 28 November 2003: \url{http://stakeholders.ofcom.org.uk/binaries/consultations/750148/Eureviewfinala1.pdf}.
substitutes to call termination on individual networks at the retail level, including that call termination on mobile networks did not provide an effective demand-side substitute due to cost differences. As the demand for wholesale call termination is derived from the demand for retail call termination, it was concluded that a series of individual markets existed for fixed geographic call termination on the networks of those CPs listed in the market review.

4.207 Our 2009 market review of wholesale fixed narrowband services, again found that there were no direct substitutes to wholesale call termination on individual networks, and that indirect competitive constraints were insufficient to warrant inclusion in the relevant market. As set out in the review, an originating network demanding call termination services has no alternative than to demand it from the network of the subscriber to whom the call has to be delivered. This implies that, once a call has been made, the network of the subscriber to whom the call has to be delivered has a monopoly on terminating that call, and hence faces no direct constraint at the wholesale level on the price it charges for terminating that call. The review therefore concluded that the relevant market was for “wholesale fixed geographic call termination on each individual network”.

4.208 The two reviews of call termination book-end the period which was the main focus of our investigation into BT’s Wholesale Calls pricing, providing a consistent market definition across the period. Again, given the extensive and recent/contemporaneous nature of the market definition exercise carried out in the most recent review, the fact that it was carried out using the same methods as would be used for a market definition exercise under the Act, and considering evidence of the characteristics of the market between 2003 and 2009 (i.e. the period in which BT carried out the pricing behaviour about which we are concerned) we proposed in the Statement of Objections to follow the market definition assessment laid out in that document, for the purposes of this investigation. We do not repeat the full assessment, but refer to the consultation document and Statement.

4.209 BT makes no comment in its response to the Statement of Objections in relation to our call termination market definition and we do not consider that any evidence we have seen during the course of this investigation would cause us to alter this assessment of market definition for the purposes of this decision.

4.210 We therefore consider that wholesale call termination is supplied on separate markets for each individual network. As we explain above, we consider that fixed geographic call termination on BT’s network is a relevant upstream market for the purposes of our investigation.

Conclusions on upstream markets

4.211 Given the detailed analysis carried out to conduct the wholesale narrowband review and that the analysis overlapped with the period in which BT carried out the pricing


200 Review of the fixed narrowband services wholesale markets consultation, March 2009, paragraph 7.42
behaviour with which we are concerned, we adopt the market definitions made in the wholesale narrowband market review. The relevant upstream markets are therefore:

- The supply of wholesale call origination on fixed narrowband networks in the UK excluding Hull;
- The supply of the three core networks services:
  (i) Local-tandem conveyance and transit on fixed public narrowband networks;
  (ii) Inter-tandem conveyance and transit on fixed public narrowband networks; and
  (iii) Single transit on fixed public narrowband networks; and
- The supply of wholesale fixed geographic call termination on BT’s network.

**Conclusions on the relevant markets**

4.212 As a result of our assessment of the products and markets relevant to the complaints brought by THUS and Gamma, we have identified three different levels of markets that are relevant to our investigation.

4.213 At the upstream level, we have identified and defined the wholesale markets for fixed narrowband call origination, core network services and call termination in the UK (excluding the Hull area). It is in these markets that we will need to assess whether BT is dominant in order for the Chapter II prohibition and Article 102 TFEU to apply.

4.214 We consider it unnecessary to reach a definitive view on the precise boundaries of the downstream and further downstream markets for the purposes of this decision. Our analysis of effects in Section 7, which is based on the narrower downstream market definitions set out in the Statement of Objections, has led us to conclude that we are not satisfied that the evidence demonstrates that, on the balance of probabilities, BT’s conduct has had an adverse impact on competition (or that it was or is likely to have such an effect). Any widening of those market definitions would not change our conclusions as anti-competitive effects would not be more likely than under the narrower definition.

4.215 For the purposes of this decision, we therefore proceed on the basis of the downstream market definition used in the Statement of Objections i.e. the market for the supply of wholesale end-to-end calls to the merchant market in the UK (excluding the Hull area). We note that in any event, our conclusion that BT is active on the downstream market would not change if the boundaries of the downstream market were widened.

4.216 Similarly, at the further downstream level we proceed on the basis that the markets are those for retail fixed-line voice calls to residential and to business customers in the UK (excluding the Hull area).

4.217 We would note however, that if further evidence emerges that causes us to revise our view that, on the balance of probabilities, BT’s behaviour has not led, nor was or is likely to lead to a reduction in the intensity of competition, we would need to carry out substantial further analysis on the merits of the points raised by BT in its Response and whether it is therefore appropriate to revise our market definitions.
4.218 In Section 5 we move to consider BT’s position in these markets. We assess whether BT is dominant in the upstream markets and consider the extent to which it is active in the downstream market.
Section 5

BT’s position in the Relevant Markets

Introduction

5.1 For the purposes of the Chapter II prohibition and Article 102 TFEU, dominance is assessed within a relevant market.201

5.2 As set out in detail in Section 2, to demonstrate that a margin squeeze has occurred, it is necessary to demonstrate that an undertaking is in fact dominant on an upstream market and supplies an input which is used to participate in a related downstream market. European jurisprudence makes it clear that an abusive margin squeeze may occur where a wholesale product is not indispensible for the supply of a retail product.202

5.3 It is therefore necessary to establish that the undertaking is active in the downstream market on which the input is supplied. It is not, however, required to be dominant in that market.

5.4 The European Court of Justice has defined a dominant position as:

“…a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by giving it the power to behave to an appreciable extent independently of its competitors, customers and ultimately of consumers.”203

5.5 As set out in Section 4, Ofcom has carried out regular reviews of a number of the markets relevant to this case, in accordance with the Framework Directive. As required by that Directive, in these market reviews we have assessed whether BT has SMP in each of these markets.

5.6 The Framework Directive makes it clear that SMP is equivalent to the competition law concept of dominance set out by the European Court of Justice. Article 14(2) states:

“An undertaking shall be deemed to have significant market power if, either individually or jointly with others, it enjoys a position equivalent to dominance, that is to say a position of economic strength affording

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202 Albion Water (CA) paragraph 88 – “the need for access to an input from the upstream market in order to operate in the downstream market”; OFT Guidance 417 paragraph 7.26; OFT Assessment of Conduct Draft Guidance 414a paragraph 6.1; Guidance on the Commission’s Enforcement Priorities in applying Article 82 to abusive exclusionary conduct by dominant undertakings OJ C 45, 24.2.09, paragraphs 80, 82. See also the ECJ in Case C- 52/09 TeliaSonera at paragraph 72; and the General Court in Case T-398/07 Spain v Commission at paragraph 76.

it the power to behave to an appreciable extent independently of competitors, customers and ultimately consumers.\textsuperscript{204}

5.7 As with the assessment of market definition, the Framework Directive and associated Guidelines\textsuperscript{205} require Ofcom to rely on competition law principles and methodologies when it defines markets and assesses whether or not undertakings have SMP.

5.8 In the Statement of Objections we identified that BT is dominant in each of the upstream markets for call origination and call termination and that it supplies inputs from these markets which are necessary for participation in the related downstream market. We additionally established that BT is active in that relevant downstream market - the supply of wholesale end-to-end calls to the merchant market.\textsuperscript{206}

5.9 In its Response, BT criticises the level of analysis carried out by Ofcom in relation to BT’s position in the upstream, downstream and further downstream markets. BT claims that Ofcom has sought simply to identify whether BT is dominant in the upstream market and active in the downstream market, rather than assess the conditions of competition at all three market levels.

5.10 We summarise below the analysis of BT’s market position that we included in the Statement of Objections and include details of the specific points that BT made in its Response in relation to each market. We then address, where appropriate, those points before reaching a conclusion on BT’s position in the relevant markets.

Assessment of dominance in the upstream markets: Ofcom’s provisional views in the Statement of Objections

5.11 In Section 4 we have identified the relevant upstream markets for the purposes of this investigation. These are the same markets as we proposed in the Statement of Objections. The markets identified are those for:

- The supply of wholesale call origination on fixed narrowband networks in the UK excluding Hull;

- The supply of the three core networks services:
  - (i) Local-tandem conveyance and transit on fixed public narrowband networks;
  - (ii) Inter-tandem conveyance and transit on fixed public narrowband networks;
  - (iii) Single transit on fixed public narrowband networks; and

- The supply of fixed geographic wholesale call termination on BT’s network.

\textsuperscript{204} Article 14(2), Directive 2002/21/EC. Article 14(2) was unaffected by amendments to the Framework Directive made by Directive 2009/140/EC.

\textsuperscript{205} Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services (2002/C 165/03).

\textsuperscript{206} In its response to the Statement of Objections, C&W agrees with Ofcom’s proposed findings in relation to BT’s position on the relevant markets.
5.12 In the Statement of Objections, we looked at each of these markets in turn and assessed whether:

(i) an input supplied on this market is indispensable for participation in the relevant downstream market (the supply of wholesale end-to-end calls to the merchant market in the UK, excluding the Hull area), and

(ii) whether BT has a dominant position on that relevant upstream market.

The use of Wholesale Call Origination on the downstream market

5.13 Wholesale end-to-end calls are comprised of three complementary upstream inputs: wholesale call origination, wholesale call termination and core network conveyance/transit.

5.14 In the Statement of Objections we identified that the relevant downstream market consists of the supply of wholesale end-to-end calls to the merchant market in the UK, excluding Hull. Wholesale end-to-end calls can be provided either using CPS, or via BT’s Wholesale Calls product. Given that both CPS and Wholesale Calls originate on BT’s network, we provisionally concluded that BT wholesale call origination is necessary for the supply of wholesale end-to-end calls.

5.15 We further identified that even if the downstream market definition was expanded to include wholesale call products provided using IA and LLU, BT wholesale call origination was still likely to be a necessary upstream input in the supply of wholesale calls to the merchant market. This is self-evident for IA as these calls also originate on BT’s network. As regards LLU, while BT wholesale call origination can be bypassed where a CP has access to an LLU network, the CP would nevertheless need to purchase BT wholesale call origination both in geographic areas where they do not have access to LLU, and to supply those customers who either do not have a broadband connection or who do not wish to purchase calls and broadband from the same provider. We noted that the dependency on BT wholesale call origination was illustrated by the fact that [\(<\) Company 1 and Company 2] were \([\geq\) purchasers of BT’s Wholesale Calls product during the period under investigation (see Section 4). On this basis, Ofcom provisionally concluded in the Statement of Objections that wholesale call origination is an indispensable upstream input in the supply of wholesale end-to-end calls to the merchant market.

Assessment of dominance

5.16 In the Statement of Objections, we provisionally concluded that BT was dominant in the supply of wholesale call origination on fixed networks in the UK, excluding Hull in the period relevant to this investigation. Our conclusions were based on the findings that we made in our 2003\(^{207}\) and 2009\(^{208}\) reviews of the fixed narrowband services wholesale markets. In both reviews we concluded that BT had SMP in the supply of wholesale call origination due to, among other things, its high market shares, the


existence of relatively high barriers to entry and the lack of countervailing buyer power.

5.17 Given the extensive and recent/contemporaneous nature of the market power assessment exercise carried out in those reviews, and the absence of any evidence to contradict that assessment, we considered it was appropriate to rely on the conclusions of those reviews to assess BT’s market power during the period of the investigation. In particular, the fact that they were carried out using the same methods as would be used for a dominance assessment under Article 102 and the Act, and considering evidence of the characteristics of the market between 2003 and 2009 (i.e. the period under investigation) mean that the conclusions are relevant to this case. We do not repeat the full assessment here but refer to the consultation documents and Statements.

Core Networks

Use of core networks

5.18 As discussed in Section 4, the use of core networks allows calls to be conveyed and transited from call origination to call termination.209

5.19 In our various reviews of the core network conveyance and transit markets210 we identified three separate markets which collectively comprise core network services.211 These are:

- Local tandem conveyance and transit;
- Inter-tandem conveyance and transit; and
- Single transit.

5.20 In the Statement of Objections we identified that there are a number of CPs that are capable of providing these three network services, both through the use of their own network and those of other CPs. Indeed, one of the main purposes of CPS was to allow competition in the supply of core network services to develop. We noted that this had been successful to the extent that BT no longer has SMP in the supply of either local tandem conveyance/transit or inter-tandem conveyance/transit. We therefore provisionally concluded that access to BT’s three core network services is therefore generally not indispensable for competition in the supply of wholesale end-to-end calls.

5.21 The only aspect of core network services which we identified as being potentially indispensable for competition was the supply of BT single transit. We noted, however, that while BT retains SMP in single transit, only a very limited number of

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209 Some calls originate and terminate at the same DLE.


211 See paragraphs 4.197 to 4.201 above.
calls are routed using single transit. In particular, BT single transit only tends to be utilised where: (1) a call needs to be switched from one tandem to another; (2) the CP does not have a sufficient level of interconnectivity at the tandem layer; and (3) the level of traffic on the route is too low to make it economic to purchase inter-tandem conveyance/transit. In addition, the cost of single transit, at 0.0375ppm (including PPP), is only one third of the cost of inter-tandem conveyance and transit.

5.22 Given the low volumes of calls that are routed using BT single transit, and the low price of this upstream input, we provisionally concluded in the Statement of Objections that for the purposes of this investigation, BT single transit is not indispensable to the supply of wholesale end-to-end calls.

Assessment of dominance

5.23 Whilst single transit is subject to a regulatory obligation to supply, our conclusions that the product is not indispensable to the supply of wholesale end-to-end calls led us to provisionally conclude in the Statement of Objections that it would not be appropriate to pursue a margin squeeze abuse assessment against BT resulting from the provision of core network services alone. As a result, we considered it unnecessary to conduct an assessment of dominance for BT in the single transit market.

Call Termination on BT’s network

Use of Wholesale Call Termination on the downstream market

5.24 In order to provide a retail end-to-end calls product, a reseller needs to be able to provide its customers with an opportunity to make calls (or send data) to all retail customers irrespective of the network to which they are connected. A reseller will therefore need to purchase (and a wholesaler needs to offer) call termination on BT’s network as well as other fixed and mobile networks.

5.25 A reseller may be able to reduce its dependency on BT wholesale call termination through self-supplying call origination as the more customers that originate calls on non-BT networks, the more calls are likely to terminate on non-BT networks. However, a reseller would still need to purchase wholesale fixed geographic call termination on BT’s network to allow customers to connect to retail customers who have a BT exchange line.

5.26 We therefore concluded in the Statement of Objections that fixed geographic wholesale call termination on BT’s network is necessary for the supply of wholesale end-to-end calls.

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213 We note that European jurisprudence has made it clear that an abusive margin squeeze can occur in circumstances where a product is not indispensable for supply to the downstream market (see Case C-52/09 Konkurrensverket v TeliaSonera at paragraph 72).
Assessment of dominance

5.27 In the Statement of Objections, we provisionally concluded that BT was dominant in the supply of fixed geographic wholesale call termination on its own network for the period of this investigation. Our conclusions were based on the findings that we made in our 2003\(^{214}\) and 2009 reviews of the call termination markets\(^{215}\). In both reviews we concluded that BT has SMP in the supply of fixed geographic wholesale call termination on its own network due to, among other things, its 100% share of the market, the existence of technical barriers to entry and the absence of strong countervailing buyer power.

5.28 Given the extensive and recent/contemporaneous nature of the market power assessment exercise carried out in those reviews, and the absence of any evidence to contradict that assessment, we considered it appropriate to rely on the conclusions of those reviews to assess BT’s market power during the period of the investigation. In particular, the fact that they were carried out using the same methods as would be used for a dominance assessment under the Chapter II and Article 102 prohibitions, and considering evidence of the characteristics of the market between 2003 and 2009 (i.e. the period under investigation) mean that the conclusions are relevant to this case. We do not repeat the full assessment here but refer to the consultation documents and Statements.

BT’s representations on the upstream markets and BT call origination as a necessary input for participation in the downstream market

5.29 In its Response, BT does not dispute that it was dominant on the upstream markets for both the supply of wholesale call origination of fixed networks in the UK (excluding Hull) and the supply of fixed geographic wholesale call termination on the BT network.\(^{216}\)

5.30 BT argues that consideration of market power should not be limited to the satisfaction of jurisdictional requirements alone, but is also important in assessing the effects of any behaviour. BT suggests that the greater the extent to which an upstream input is not indispensable for competition on the downstream market, the lower the likelihood that the pricing of that input will have an exclusionary effect.\(^{217}\) It argues that despite its high market share in the upstream market for call origination, it has increasingly faced direct constraints from self supply via LLU and fibre and indirect constraints from the retail level, in particular from calls over cable and mobile networks.\(^{218}\)


\(^{216}\) Paragraph C.216 of BT’s Response. BT makes no comment in relation to the upstream market for core networks.

\(^{217}\) Paragraph C.217 of BT’s Response.

\(^{218}\) Paragraph C.218 of BT’s Response. BT notes, for example, that the 2009 Fixed Narrowband Services Wholesale Markets review included cable, fibre and LLU in the call origination market and
5.31 BT argues that these constraints weaken its market power in respect of customers and competitors who are capable of self supplying a high proportion of their requirements for call origination (such as Opal, Sky and C&W/THUS). BT call origination is therefore not an indispensable input for the provision of wholesale end to end calls, as competitors are able to bypass BT’s call origination. BT does, however, recognise that some regulated inputs will be required for the foreseeable future in order to provide a comprehensive UK-wide service.

Conclusion on BT’s position in the upstream markets and BT call origination as a necessary input for participation in the downstream market

5.32 BT does not dispute that the jurisdictional requirement of dominance is fulfilled in this case – in that it is dominant on the upstream markets for both the supply of wholesale call origination of fixed networks in the UK (excluding Hull) and the supply of fixed geographic wholesale call termination on the BT network. BT however argues that Ofcom’s analysis did not provide a sound basis for the analysis of abuse and exclusionary effects.

5.33 We have therefore concluded that BT is dominant in the supply of wholesale call origination on fixed networks in the UK, excluding the Hull area, and in the supply of fixed geographic wholesale call termination on its own network.

5.34 As noted at paragraph 4.195, for the purposes of this decision, we have proceeded on the basis that the relevant downstream market consists of the supply of wholesale end-to-end calls to the merchant market in the UK, excluding Hull. Given that both CPS and Wholesale Calls originate on BT’s network, we consider BT wholesale call origination is necessary for the supply of wholesale end-to-end calls. However, even if the downstream market were expanded to include wholesale call products provided using IA and LLU, BT wholesale call origination would be a necessary input in the supply of wholesale calls to the merchant market, for the nationwide provision of wholesale end-to-end calls. In any event, the ECJ is clear that even where a product is not indispensible for the supply of the retail product, a pricing practice which causes a margin squeeze can have an anti-competitive effect on the market concerned.

Downstream market

5.35 We have identified above that BT is dominant in the upstream call origination and call termination markets. We have also demonstrated that access to services in these markets is indispensable for competition in the downstream wholesale end-to-end calls market and that those products are subject to a regulatory obligation to supply. As discussed in Section 2, in order to identify whether a margin squeeze is feasible in the downstream wholesale end-to-end calls market, we need to consider whether BT is active in this market. In this section we therefore consider BT’s presence in the

that according to Ofcom’s Telecommunications Market Data Tables for Q4 2010, nearly one third of fixed line calls did not include BT call origination.

219 Paragraph C.218 of BT’s Response.

220 Paragraph D.172 of BT’s Response.

221 Case C-52/09 TeliaSonera AB v Konkurrensverket, paragraph 72; Case T-398/07 Spain v Commission, paragraph 76.
downstream market for the supply of wholesale end-to-end calls to the merchant market. We begin by summarising the analysis that we included in the Statement of Objections, updating it where we have more recent data. It is common ground between Ofcom and BT that BT is active in the downstream market. We have however, set out BT’s response on market power in detail, in the interests of transparency. We then reach a conclusion on BT’s position in the downstream market.

**Market size**

5.36 In the Statement of Objections we identified that for the 12 month period between May 2008 and April 2009, the overall size of the wholesale end-to-end calls merchant market was approximately £472 million per annum, with 24.6 billion minutes supplied.

5.37 The market grew substantially in the two year period between 2008 and 2010. This was mainly driven by two factors. First, in 2008 [Company 1] switched a proportion of its wholesale end-to-end call needs from self-supply to BT’s Wholesale Calls product. This had the effect of increasing the volume of wholesale end-to-end calls by [11-30%]. Second, retailers using wholesale end-to-end calls, such as Sky, had been winning market share at the expense of BT Retail. For example, between 2003 and 2010, BT’s share of the residential calls market fell from 69% to 49% of revenues (71% to 43% of minutes), while other fixed CPs saw their combined share rise from 12% to 34% of revenues (11% to 41% of minutes).222

5.38 The overall size of the wholesale end-to-end calls merchant market, however, started to decline after 2010. Based on data available for the month of April 2011, we estimate that in 2011 the overall size of the wholesale end-to-end market was around £343 million per annum, with around 20 billion minutes supplied.223 This decline was mainly driven by [<>].

5.39 We also identified in the Statement of Objections that there had been substantial growth in demand from SME resellers. For example, excluding the largest 20 (mainly residential) contracts, the remainder of the market had grown from £180 million in March 2008 to £228 million in March 2009.224 The number of minutes supplied saw a similar pattern of growth. Residential minutes increased from around 0.75 billion a month in January 2007 to over 1.5 billion a month in April 2009, while minutes sold to the SME sector experienced a more modest growth from around 0.40 billion per month to approximately 0.6 billion per month over the same period (see Figure 5.1 below).225

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223 BT and CPSOs’ responses to section 26 Notices, November 2011. Data for April multiplied by 12 to generate an estimate of the annual totals.

224 Note that these values include revenues from Indirect Access.

225 To obtain an estimate of BT’s share of the residential and SME sectors, we have assumed wholesale end-to-end contracts with monthly average revenues in excess of £350,000 represent sales to the residential sector, and the remaining contracts are sales to the SME sector.
5.40 The market then experienced a similar growth trend between 2009 and 2010, with minutes sold to residential and SME customers amounting to, respectively, around 1.4 billion and 0.7 billion a month in April 2010. In 2011, however, minutes sold to both sectors declined again. The sharpest decline was in residential minutes, which fell to 1 billion a month in April 2011. Minutes sold to the SME sector fell to around 0.6 billion a month.226

5.41 In the Statement of Objections we identified that between May 2008 and April 2009, BT’s share of supply to this market was [≥ 31-50%] by revenue, and [≥ 41-60%] by minutes (see Table 5.2 below).

5.42 BT’s market share grew rapidly over this period, with its share of minutes rising from [≥ 21%-30%] in April 2008 to [≥ 61%-70%] by April 2009. BT’s market share by value showed a similar pattern, increasing from [≥ 21%-30%] to [≥ 61%-70%] over the period.

5.43 By April 2009 BT was, by some distance, the largest supplier in the market, its closest competitors (by volume of minutes supplied) being C&W ([≥ 0%-10%]), Gamma ([≥ 11%-20%]), and Opal ([≥ 0%-10%]). Verizon ([≥ 0%-10%]) was the only other competitor with a market share in excess of 1%.

226 BT and CPSOs’ responses to section 26 Notices, November 2011.
5.44 BT was successful in winning market share from all of its major competitors as illustrated in Figure 5.3 below. In particular, three of BT’s largest rivals, Gamma, C&W and Verizon, all saw their market share fall by around [20%–50%] between March 2008 and April 2009, while Opal saw its market share fall by [20%–50%]. In addition, THUS ceased operating as an independent supplier following its acquisition by C&W (shortly after the loss of [Contract 2]), though remains active supplying wholesale end-to-end calls as a brand of C&W. We consider the significance of the changes in market share further in Section 7 in the context of considering the effects on competition associated with BT’s pricing behaviour for Wholesale Calls.

Figure 5.3: Share of supply of wholesale end-to-end call revenues to the merchant market

Note: Market shares are reported on a monthly frequency.

5.45 BT’s rapid increase in market share was largely due to it winning two major contracts, [Contract 1 and Contract 2], which together accounted for [31–40%] of the merchant market (by value).227

5.46 Over the last two years, BT’s market shares have remained broadly constant. BT’s market share by revenue dropped slightly to [51–60%] in April 2010 but rose again to [51–60%] in April 2011. BT’s market share by volume was [61–70%] in April 2010 and [61–70%] in April 2011.

5.47 BT increased its market share in all segments of the market, and remains the leading supplier to both the residential and SME sectors of the merchant market. We estimated that in April 2009 BT had a [71–80%] share of supply of the residential sector, while in the SME sector BT’s market share had increased from [21–30%] in March 2008 to [31–40%] in April 2009. This is illustrated in Figure 5.4 below. Since April 2009, BT’s share of supply to both sectors has fluctuated somewhat. BT’s share of supply to the residential sector was [71–80%] in April 2010 and [71–80%] in April 2011, while its share of supply to the SME sector was [31–40%] in April 2010 and [31–40%] in April 2011.228

Figure 5.4: Share of wholesale end-to-end call revenues to the merchant market (SME sector)

Note: Excludes [✓] whose market shares were less than 1% over the period. Market shares are reported on a monthly frequency.

227 Revenue market shares at April 2009.
228 BT and CPSOs’ responses to section 26 Notices, November 2011.
BT's share under alternative market definitions

5.48 For completeness, in the Statement of Objections we considered BT's market shares under two alternative market definitions:

(i) Wholesale end-to-end calls + indirect access (i.e. wholesale call products sold to third parties that originate on BT’s network); and

(ii) Wholesale end-to-end calls + indirect access + self-supply (i.e. all wholesale call products sold to resellers).229

5.49 Table 5.5 below sets out BT’s average market share of minutes between May 2008 and April 2009 under these alternative market definitions. Over this period, indirect access accounted for a further £70.5 million of revenue and 3.4 billion minutes. If indirect access is included in the market definition, BT’s average market share in the period falls from [≥ 51-60%] to [≥ 41-50%]. Extending the market definition to include indirect access therefore reduces BT’s market share, but it nevertheless remains substantial.

5.50 Extending the boundaries of the relevant market to include self-supply substantially increases BT’s already high market share. For example, if self-supply is included, BT’s market share rises to [≥ 61-70%], or to [≥ 61-70%] when indirect access is excluded. This reflects BT’s high share of the retail market (51%).230 Table 5.5 also shows BT’s market shares in the months April 2010 and April 2011 under these alternative market definitions. Under all alternative market definitions, BT’s market shares increased in 2010 and 2011.

Table 5.5: BT’s market share of minutes, May 2008 to April 2011

<table>
<thead>
<tr>
<th>Market Definition</th>
<th>May 2008 to April 2009</th>
<th>April 2010</th>
<th>April 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BT (%)</td>
<td>Total market size, billion minutes</td>
<td>BT (%)</td>
</tr>
<tr>
<td>Wholesale end-to-end calls</td>
<td>[≥ 50-60%]</td>
<td>[≥ &lt;25]</td>
<td>[≥ 60-70%]</td>
</tr>
<tr>
<td>Wholesale end-to-end calls + indirect access</td>
<td>[≥ 40-50%]</td>
<td>[≥ &lt;30]</td>
<td>[≥ 60-70%]</td>
</tr>
<tr>
<td>Wholesale end-to-end calls + Self-supply</td>
<td>[≥ 60-70%]</td>
<td>[≥ &lt;120]</td>
<td>[≥ 80-90%]</td>
</tr>
<tr>
<td>Wholesale end-to-end calls + indirect access + self-supply</td>
<td>[≥ 60-70%]</td>
<td>[≥ &lt;120]</td>
<td>[≥ 80-90%]</td>
</tr>
</tbody>
</table>

Sources: CPSOs responses to section 26 Notice, August 2009, and BT responses to section 26 Notice, July 2009; BT and CPSOs responses to November 2011 section 26 Notices; and Table 3 of the Telecommunications Market Data Update – Q3 2011, February 2012: http://stakeholders.ofcom.org.uk/binaries/research/cmr/telecoms/Q32011TelecomsDataTables.pdf.

229 Self-supply is comprised of the supply of wholesale calls within vertically integrated retailers. This includes self-supply that originates on BT’s network, as well as self-supply using LLU and cable networks.

230 Retail narrowband market review, Ofcom, March 2009.

231 Note that the figures for April 2010 and April 2011 are based on data collected from only those CPs which had a market share in excess of 1% in April 2009 (see paragraph 7.158).
BT’s representations on the downstream market

5.51 BT does not dispute that it is “active” in the downstream market and agrees that it is not necessary to be dominant on the downstream market for a margin squeeze to be made out.  

5.52 BT emphasises that the degree of market power is a highly relevant factor for the overall assessment of the likelihood of exclusionary effect and denies that it has any significant market power in the downstream market under any market definition.  

5.53 BT refers to its arguments that Ofcom has defined the downstream market too narrowly (see Section 4), and claims that under the broader market definition that it proposes it has a far lower market share. BT estimates that its market share was \[\geq 31-40\%\] in 2008 and that this fell to \[\geq 21-30\%\] in 2010.  

5.54 BT also argues that even on the basis of the narrow market definition set out by Ofcom in the Statement of Objections, it does not in reality have any significant market power.  

5.55 BT notes that significant market power or dominance implies an ability to act independently of competitors and customers, and in particular to raise prices above competitive levels. BT states that it does not and has not enjoyed such ability at any time relevant to the investigation, highlighting five main reasons for this view.  

(i) There are a number of strong competitors in the supply of wholesale end-to-end calls (including C&W/Thus, Opal and Gamma) who have extensive networks. The costs of those competing networks are largely sunk so these competitors can offer their wholesale end-to-end calls at close to marginal costs.  

(ii) The principal variable cost element in the supply of wholesale end-to-end calls are BT’s upstream charges (call origination and call termination) which are regulated and other inputs which are either supplied competitively or can easily be self supplied.  

(iii) In the event CPSOs were excluded and BT raised its prices of Wholesale Calls to an anti-competitive level, the excluded CPSOs with core networks would have both the ability and incentive to re-enter the supply of wholesale end-to-end calls market using their core networks, regulated call origination and call termination inputs.

232 Paragraph C.209 of BT’s Response.  
233 Paragraph C.210 of BT’s Response.  
234 Paragraph C.210 of BT’s Response.  
235 Paragraphs C.211 and C.212 of BT’s Response.  
236 BT’s estimates are based on the sum of BT Retail call minutes and BT Wholesale Calls minutes as a proportion of the total of “world minutes”, including calls over MPF, fibre, cable and mobiles.  
237 Paragraph C.214 of BT’s Response.
(iv) BT had no market power with respect to either [Contract 1 or Contract 2],
which is demonstrated by the countervailing buyer power of these two very
large customers which forced BT to price close to the CPSO cost floor. In
particular, BT highlights that [Contract 1] is indefinite and [Company 2] con tinues to have substantial buyer power and can expect to achieve very low
prices in its next tenders.

(v) End consumers have a range of retail alternatives to supply from resellers
using Wholesale Calls (including cable, mobile, IP Voice Services, VoB and
VoIP). These retail alternatives act as indirect constraints which reinforce the
direct constraints above and further undermine the likelihood of harm to
competition or consumers.

Conclusions on BT's position in the downstream market

5.56 It is common ground between Ofcom and BT that BT is active in the downstream
market and we conclude that this is the case.

5.57 BT's other representations relate to the extent of its position in the downstream
market and to the extent to which it is able to affect competition in the downstream
and further downstream markets. We consider BT's arguments on this issue in
Section 7 where appropriate.

Conclusions

5.58 On the basis of the analysis that we have set out in this Section and previous
Sections, it is clear that the first four requirements of our margin squeeze test are
met:

(i) BT is a vertically integrated undertaking that operates in upstream and
downstream markets;

(ii) An input from the upstream market(s) (i.e. those for call origination and
termination) is necessary to provide a UK-wide service in the downstream
market (regardless of how it is defined);

(iii) BT is dominant in some of the upstream markets; and

(iv) BT is active in the downstream market (regardless of how it is defined).

5.59 The conditions therefore exist under which a margin squeeze could take place. In
Section 6 we consider whether BT's pricing conduct in the downstream wholesale
end-to-end calls market failed to maintain a sufficient margin between its upstream
and downstream prices such that it failed to cover the downstream costs of its
Wholesale Calls product (i.e. whether the fifth requirement of our margin squeeze
test is met). We go on to consider anti-competitive effects in Section 7 (i.e. the sixth
and final requirement of our test).
Section 6

BT’s margins on Wholesale Calls

Introduction

6.1 In this Section, we first consider the evidence on BT’s strategy, and governance process (including its margin model) for the Wholesale Calls product. This is important to understand the background to the changes in BT’s pricing, and whether BT had a deliberate strategy to exclude competitors (which may assist in the assessment of the effect of BT’s conduct\(^\text{238}\)).

6.2 We then go on to consider whether BT failed to maintain a sufficient margin between its upstream and downstream prices such that it failed to cover the downstream costs of its Wholesale Calls product.

BT’s strategy for Wholesale Calls

6.3 As set out in Section 2, the ECJ requires that all the circumstances of the case be taken into account in considering whether an undertaking has carried out an abusive margin squeeze. In *TeliaSonera*, it stated that “where an undertaking introduces a pricing policy intended to drive from the market competitors who are perhaps as efficient as that dominant undertaking but who, because of their smaller financial resources, are incapable of withstanding the competition waged against them, that undertaking is, accordingly, abusing its dominant position (see to that effect Deutsche Telekom v Commission, paragraph 199)”\(^\text{239}\).

6.4 The complainants alleged that the reductions in BT’s prices were “aimed at eliminating or weakening competition in the market” and that BT had “consciously decided to target wholesale calls in order to force out competitors.”\(^\text{240}\)

6.5 As part our investigation, using our powers under section 26 of the Act,\(^\text{241}\) we asked BT to provide documents explaining its strategy for the Wholesale Calls product during the relevant period. We also carried out an extensive document review of BT’s internal documents, looking for evidence that it had deliberately intended to carry out a margin squeeze.

6.6 We reviewed a very large number of internal documents related to the Wholesale Calls business. This included business plans and other internal documents relating to the Wholesale Calls business, and documents produced for the internal governance process, which involved senior individuals such as the Chief Finance Officer, the Director for BT Wholesale Markets and the General Counsel. We also looked at documents generated for or by senior BT personnel with responsibilities for decisions

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\(^{238}\) See Commission’s *Article 82 Guidance*, paragraph 20; *TeliaSonera* paragraphs 45, 65 and 66.

\(^{239}\) *TeliaSonera*, paragraph 40.

\(^{240}\) Gamma complaint 17 June 2008, paragraph 21; THUS complaint, 5 June 2008, paragraph 3.32

\(^{241}\) Section 26 of the Act provides Ofcom with the power to require the provision of specified information or documents that relate to any matter relevant to an investigation under section 25 of the Act (i.e., an investigation into alleged breaches of the Chapter I or Chapter II prohibition).
on Wholesale Calls. This included the following individuals: the BT Wholesale Chief Executive Officer; the Head of Wholesale Calls, the Director of Product Management at BT Wholesale, and the Managing Director for Products at BT Wholesale.

6.7 We found no evidence that BT had deliberately intended to carry out an abusive margin squeeze.

6.8 BT provided us with explanations and documents relating to its governance processes for the approval of bids prior to the signing and entering into force of a contract for Wholesale Calls. BT stated that its governance process, including use of margin models, evolved from Ofcom’s June 2005 Gamma Telecom decision.

6.9 During the period of investigation, there were three tiers of approval for BT’s Wholesale Calls contract bids, depending upon the size of the bid. A body called the “Commercial Investment Board” (“CIB”), and its predecessor the “Commercial Investments Meeting” (“CIM”), comprising senior BT Group officials including was the key sign-off body for approving Wholesale Calls contract bids. In addition, major proposed contracts for Wholesale Calls were also to be submitted to the BT Group for authorisation. For example, BT stated that its bid in 2008 to sell wholesale end-to-end call services to Company 2 was signed off by the CIB and BT Wholesale’s CEO at the time, but was also put to the BT Group Operating Committee.

6.10 To speed up the authorisation process for smaller bids, BT also introduced a ‘devolved authority’ system which delegated CIB authorisation to two senior individuals. Bespoke pricing in bids subject to devolved authority were also subject to margin modelling, as set out below. BT documents indicate that “the cost basis for the CPSO floor or BT floor needs to be redetermined”, or if one of the delegated signatories requested full CIB sign-off.

6.11 BT has explained to us that its commercial strategy for its Wholesale Calls product was driven by the fact that it had only a share of the supply of wholesale end-to-end calls in 2006, which it felt reflected that it was not being at all successful in obtaining new business in competition with its established rivals. BT was losing revenue to CPSOs and to other CPs as competition in retail markets developed and

242 Letter from (BT) to Ofcom, 26 June 2006.
243 BT Wholesale Commercial Governance Policy, November 2006, supplied by BT in response to the 1st section 26 Notice.
244 BT Response dated 9 September 2008 to Q24 of 1st section 26 Notice.
245 These individuals were (Head of Wholesale Calls) and (Commercial Finance – Head of Wholesale Products). See BT internal document dated 2 July 2007 titled ‘Follow up on CIB paper No: 74/2007 – Abolition of Wholesale Calls Pricing Tiers’. DOC ID 10887.
246 The term ‘CPSO floor’ was defined by BT as being “BT’s estimate of the cost floor of an adjusted equally efficient CPS operator” (BT response dated 9 September 2008, Q25 of the 1st section 26 Notice).
248 BT Response, paragraph B.17.
new technologies such as LLU and VoIP became more common. A Wholesale Calls product plan submitted to us by BT249 (dated September 2006) noted that there were 26 million BT lines in the UK. Of this total, CPS accounted for 5.93 million lines whereas the WCLI and WCLA products had only around [>] lines. WLR was stimulating further CPS take-up, leading to a decline in BT’s share of call minutes on WLR lines. The document also identified further threats to BT Group’s revenue from mobile, LLU, VoIP and CPS competitors and “MNOs bundling to offer multi services”.250

6.12 BT considered251 that because of the publication of its Wholesale Calls prices, pursuant to the voluntary undertakings, CPSOs had been able systematically to undercut its prices, preventing BT from competing for customers. It considered that increasing its Wholesale Calls business remained a viable business opportunity, while recognising that the significance of the product itself was likely to decrease in line with the trend toward the use of alternative technologies.252

6.13 In 2006, it identified the following pricing strategies:

- offering more flexible pricing after seeking from Ofcom relaxation of the 2004 voluntary undertakings, specifically through offering bespoke pricing and reviewing the WCCP tiers; and

- reviewing the “principles underlying the calculation” of the “cost floor” in BT’s governance model “to explore” if the cost floor could be lowered.253

6.14 In its Response, BT highlights that the strategy was not simply about a reduction in pricing – it also envisaged making substantial investment in developing the capabilities of the Wholesale Calls product and improving terms and conditions and marketing strategies focussed at key customers.254

6.15 As set out in paragraphs 3.32 to 3.34 of Section 3, the voluntary undertakings were withdrawn in 2007. BT then moved to a more flexible pricing structure and allowed bespoke pricing for larger contract bids.

6.16 BT also made a number of adjustments to the Wholesale Calls margin models it used for considering the consistency of proposed Wholesale Calls pricing with BT’s


251 Letter dated 26 June 2008 from [>] (BT) to Ofcom.


253 Programme Paper for Wholesale Calls V7, dated 15 June 2006. Author [>]. DOC ID 10601. BT notes that this initiative reflected concern that BT’s internal cost model for ascertaining the CPSO cost floor was excessively conservative and based on inappropriate assumptions (BT Response, paragraphs B.30, B.37 and B.38). In 2006, BT considered that its competitors were pricing at marginal costs in order to obtain a contribution to generate incremental revenues and improve capacity utilisation over their networks. BT understood that its pricing was uncompetitive and that its major competitors were pricing well below what it then understood to be the CPSO cost floor (BT Response, paragraphs B.39 and B.40).

254 BT Response, paragraphs B31 to B.33.
competition law obligations. We discuss the impact that these adjustments had on BT’s governance modelling and the results that it generated later in this Section (see paragraphs 6.387 and 6.388 below) but first set out details of the historic test that we have used in our analysis of whether BT has engaged in an abusive margin squeeze and the results that flow from this.

Testing for a margin squeeze

6.17 In the Statement of Objections, we indicated that there was strong evidence that BT failed to maintain a sufficient margin between its upstream and downstream prices such that it failed to cover the downstream costs of its Wholesale Calls product during the period July 2008 to April 2009, consistent with a margin squeeze. Our modelling indicated that BT had failed to cover the costs of an equally efficient operator, on either the EEO or adjusted EEO basis, for the total Wholesale Calls product. It also showed that BT earned a negative margin on [⋯] individual contracts (those for [⋯] Company 1 and Company 2], and on five other Wholesale Calls contracts over the period July 2008 to April 2009. Moreover, our analysis showed that the existence of these negative margins was not the consequence of market outcomes that were unanticipated by BT, but rather that it had priced its Wholesale Calls product too low across too many contracts (and in particular the [⋯] contracts). In other words, BT could have reasonably expected that negative margins would arise from its pricing conduct.

6.18 In its Response, BT and CRA argue that the approach for assessing the profitability of BT’s Wholesale Calls business set out in the Statement of Objections was flawed. BT contends that on a correct analysis, BT recovered the costs of an equally efficient operator for the total Wholesale Calls product and in respect of [⋯] Contract 2 and the other five smaller contracts that Ofcom alleged to have been unprofitable. As regards [⋯] Contract 1, BT argues that this contract should be excluded from any margin squeeze analysis on the basis that BT’s pricing on this contract cannot have an exclusionary effect.

6.19 In this Section, we summarise the approach we took in the Statement of Objections and the arguments submitted in response. We then set out our conclusions on the correct modelling approach to take where it is necessary for the purposes of this decision (i.e. in order to understand the level of margin earned by BT in relation to Wholesale Calls). We have set this out in detail to set out clearly our reasoning to the parties, given the importance of the modelling in assessing compliance with competition law. In addition, understanding the way in which the negative margins were generated is key to understanding the effect of BT’s pricing on competition.

6.20 Where appropriate we have responded to BT’s Response and other parties’ representations below. In areas where the parties’ arguments on the correct approach to take do not persuade us that the approach taken in the Statement of Objections was wrong, we set out why we consider this to be the case and retain the approach adopted in the Statement of Objections. We also note where there appears to be agreement as to the correct approach. In those areas where there is less clarity over the correct approach to take, and it is not necessary to draw conclusions for the

255 In light of information we received following the Statement of Objections, we now consider there to be six other contracts on which BT earned a negative margin (see paragraph 6.358).

256 In preparing its Response, BT instructed CRA to review the data and assumptions used by BT and Ofcom. BT also provided CRA with additional data and modelling.
purposes of this decision, we explain why this is the case. Where appropriate, we undertake sensitivity analyses to understand the potential impact on BT’s margins of the alternative approach. There are a limited number of circumstances in which the alternative approaches would have a material effect on the numbers. This would typically lead to a positive increase in BT’s margins as compared to the approach we have used. Therefore, if we were to accept the alternative approaches it would generally reinforce the overall conclusion that there are no grounds for action in this case. Finally, we also update our modelling to reflect some new data submitted by BT.

6.21 The analysis is structured as follows:

- First, we consider the appropriate test in this case to determine whether or not BT has engaged in an abusive margin squeeze. The relevant case-law shows that to make a finding of margin squeeze, it is necessary to demonstrate that a vertically integrated undertaking dominant in the provision of an upstream input and active in a related downstream market has failed to maintain a sufficient margin between its downstream and upstream prices to enable it to cover downstream costs.

- Second, we consider the historical evidence on the margin between downstream and upstream prices for BT’s Wholesale Calls business as a whole. We also consider evidence on BT’s margins for a range of major Wholesale Calls contracts.\(^\text{257}\)

- Finally, we consider to what extent BT’s own governance model, if appropriately (and correctly) implemented, should have indicated that it was likely to earn negative margins for its Wholesale Calls product. For this analysis we focus on BT’s treatment of [\(\times\) Contract 1 and Contract 2] in particular.

Introduction

6.22 In this sub-section we consider:

- what is a margin squeeze;
- what is the appropriate cost standard to use in this case;
- what is the relevant output increment to use in the analysis in this case;
- what the appropriate elements of the cost stack should be, and the basis for how those cost elements should be measured; and
- the relevance of historical and prospective analysis to measuring profitability in this case.

\(^{257}\) The results of our historical analysis presented in this decision do not reflect additional information and analysis provided by BT on 23 March 2012. Our initial analysis of the additional information suggested that this would not have a material impact on our overall conclusions, so given the lack of evidence of anti-competitive effects we have not considered it necessary to gather further information to carry out a full analysis (see paragraph 6.333).
What is a margin squeeze?

6.23 A margin squeeze may occur where a vertically integrated firm sets a margin between the prices it charges for a product in the downstream market and the prices it charges for wholesale inputs in the upstream market which is insufficient to cover costs in the downstream market. This means that there is insufficient margin for other equally efficient firms to compete profitably with the vertically integrated firm in the downstream market.\(^\text{258}\)

6.24 Vertically integrated firms can squeeze their competitors' margins in two ways, either by:

- increasing the prices charged by the upstream operation for the wholesale inputs; or
- reducing the prices charged by the downstream operation.

6.25 The extent to which either option is available to the firm may depend upon the extent to which its wholesale and retail prices are regulated.

6.26 THUS and Gamma allege that BT Wholesale has engaged in the latter form of margin squeeze. Specifically, they allege that BT Wholesale has so significantly cut its prices to resellers for its Wholesale Calls product that there is insufficient margin between BT's Wholesale Calls prices, and the regulated wholesale prices that CPS operators must pay BT (and other call termination providers) for the necessary upstream inputs, for them to be able to profitably compete.

6.27 As discussed in paragraph 2.36, there are six main elements to a test for assessing whether a margin squeeze is or has taken place. We have considered the first four elements in previous Sections, and therefore focus in this Section on the fifth element: whether or not BT has failed to maintain a sufficient margin between its upstream and downstream prices such that it fails to cover downstream costs. This requires us to consider how we assess the costs and revenues of BT's downstream operation. We consider the sixth element (effects on competition) in the following Section.

Relevant cost standards and terminology

6.28 Before undertaking a comparison of a firm’s costs and revenues it is important to establish the relevant standard for measuring costs. In this sub-section we explain why we consider that the primary cost standard for the purposes of applying competition law in this case is long-run incremental cost ("LRIC").\(^\text{259}\)

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\(^{258}\) It is worth noting that on an ‘end-to-end’ basis, i.e. aggregating across the firm’s upstream and downstream activities, the firm may be profitable but an equally (or more) efficient downstream competitor could be unable to compete, because, in effect, it is being charged a higher price for the upstream input than its competitor, the vertically integrated firm’s own downstream arm.

\(^{259}\) Incremental cost is the cost of producing a specified additional product, service or increment of output over a specified time period. In many cases, the relevant increment may be the entire output of a particular service or group of services. The incremental costs of a service are then those costs which are directly caused by the provision of that service in addition to the other services which the firm also produces. Another way of expressing this is that the incremental costs of a service are the difference between the total costs in a situation where the service is provided and the costs in another situation where the service is not provided.
In investigating competition complaints regarding margin squeeze, we consider it appropriate to focus on the minimum measure of costs that would be consistent with sustainable competition. In this case, any price above a LRIC measure of costs would increase the profits of the firm relative to not producing and selling the increment of output and would therefore be consistent with a competitive market (unless of course, prices are excessively high). Conversely, a price below LRIC would not be sustainable in the long-term. As a starting point, we therefore use LRIC as the relevant cost floor, and consider that this provides the appropriate basis of a test of whether BT’s prices could have been sustainably matched by an equally efficient competitor.

The use of LRIC/LRAIC as the appropriate cost standard for considering margin squeeze is also supported by the European Commission in its 2008 Guidance on Article 82 (now Article 102 TFEU) and in its decisions. For instance, in its 2007 Decision on margin squeeze, Telefónica, the European Commission found:

“…in accordance with the economic theory and with the practice of the Commission on margin squeeze where the ability of competitors to operate profitably in the long term was assessed, the relevant cost measure for the assessment of a margin squeeze in the telecommunications sector is the long run average incremental costs (LRAIC).”

The OFT also supports the use of LRIC in Guidance 417, Competition Act 1998: The application in the telecommunications sector, which concludes:

“When examining pricing issues in the telecommunications sector, LRIC is generally therefore a more satisfactory cost base than marginal or average variable cost. However, the existence of economies of scope means that if the prices of each of an undertaking’s services are all equal to each service’s LRIC, the undertaking will not recover its common costs. To ensure that such a situation could not have an anti-competitive effect, the undertaking would need to be able to demonstrate two things, first, that its individual prices are set at or above LRIC and secondly, that the combined prices of services in groups that share common costs...”

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260 We consider the relevant output increment for our analysis in this case in the following sub-section (from paragraph 6.34).

261 We refer to “as a starting point” because while LRIC is an important cost benchmark, simply earning revenues above LRIC does not necessarily imply that there has been no margin squeeze – see paragraphs 6.34 onwards (on combinatorial tests).

262 This is also consistent with the approach we have adopted in previous Competition Act cases such as Gamma Telecom (http://stakeholders.ofcom.org.uk/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw_802/) and NCCN 500 (http://stakeholders.ofcom.org.uk/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw_823/).

263 See Guidance on the Commission’s Enforcement Priorities in Applying Article 82 EC Treaty to Abusive Exclusionary Conduct by Dominant Undertakings, OJ C 45/7, 24.2.09, paragraph 80.

cover both LRIC and the common costs of supplying those services. OFTEL usually refers to this as a ‘combinatorial’ test.265

6.32 LRIC measures the costs that are specifically caused by the production of a defined increment of output (in the long run). Pricing output at incremental cost for services does not however allow any contribution for common costs. Common costs are those which arise from the provision of a group of services but which are not incremental to the provision of any individual service. If the incremental costs of each service are removed from the total cost of providing all services, what are left are the common costs. There are other measures of long-run costs which include an element for the recovery of common costs, for example, LRIC plus a mark-up for the recovery of common costs (a so-called LRIC+ approach) or fully allocated cost (FAC). Since a FAC or LRIC+ approach includes an element for recovery of common costs, a margin squeeze test based on a FAC or LRIC+ approach would set a higher standard for a dominant firm to pass compared to a LRIC approach.

6.33 However, and as set out in OFT Guidance 417 cited above, it is still necessary to consider whether these common costs are recovered from the aggregate revenue received from all the products or services that they support (a so-called ‘combinatorial’ test) as an efficient competitor would need to be able to recover its common costs from the products or services they sell.

Relevant output increment for our analysis

6.34 In order to estimate the relevant LRIC for our analysis, as well as understand the importance of common costs and, therefore, the need for combinatorial tests, we must first determine the relevant output increment. This is the focus of this sub-section.

6.35 There are at least three clear output increment classifications that could be considered relevant in this case:

- **Individual service test** – i.e. consideration of the individual services provided to customers. In the case of the Wholesale Calls product, the services would be the individual call categories within contracts such as national geographic calls or calls to O2 mobile phones. The analysis would consider whether the charges for each of these call types in each contract cover the incremental costs of the call. For Wholesale Calls there are several hundred individual call types in each contract making this level of granularity for the analysis highly impractical. These are small output increments and therefore will have relatively fewer common costs included than the other two classifications discussed below;

- **Individual contract test** – i.e. the bundle of services (e.g. call types) that are provided to an individual customer. The analysis at this level would consider whether the revenues for a particular contract as a whole exceed the incremental costs associated with the contract. The incremental costs for the contract as a whole are likely to exceed the sum of the individual call types as it is likely that there will be some additional common costs for the contract, for example the customer acquisition costs or account management/billing costs; and

1. **Total downstream operation (or total product) test** – i.e. across the entire downstream business. In the case of Wholesale Calls this would be across all Wholesale Calls contracts. Given the presence of central (to Wholesale Calls) functions, services and inputs that are common across all contracts (e.g. Wholesale Calls’ Finance team), the incremental cost of the total downstream operation is likely to exceed the sum of the incremental costs for the individual contracts.

6.36 The key difference between the potential tests is the amount of downstream operation common costs that are included in the cost stacks. In the case of the individual service, the definition of incremental cost is very narrow. By contrast the inclusion of various common costs means that the definition of incremental cost at the total downstream operation (“total product”) level is wide. By including Wholesale Calls-specific costs that are common across all contracts, the total product test also performs a form of combinatorial test. We note that this does not include any allowance for costs that are common with other BT Group activities.266 By excluding common costs shared with other BT Group activities, the cost test focuses only on the incremental cost of the Wholesale Calls product.

6.37 The role of margin squeeze rules is to protect efficient competition from being distorted and restricted. Central to the decision over the relevant output increment for cost testing is therefore the output increment for which firms compete.

**Approach taken in the Statement of Objections**

6.38 In the Statement of Objections, we analysed BT’s margins for the entire Wholesale Calls product as well as margins on key individual contracts.

6.39 We considered that competitors should, at a minimum, be able to compete for the portfolio of contracts as a whole. We explained that pricing below cost on some, but not all, contracts may not foreclose competitors from the market as there might be many other contracts competitors can bid for and win.267 As long as the total product is earning revenues that exceed incremental costs, then an entrant which is at least as efficient as the incumbent could still enter the market and compete for the entire contract portfolio.

6.40 In addition, we noted that the total product test was the focus of the Commission’s approach in both the **Deutsche Telekom** and **Telefónica** cases:

> “The method used to determine whether there is a margin squeeze in this case is based on the principle that the established operator’s tariff structure must enable competitors to compete with that operator effectively, and at least to replicate the established operator’s customer pattern.”268

266 Different cost standards (such as FAC) for Wholesale Calls would include a share of these wider costs.

267 For various strategic and market reasons, firms may decide to aggressively pursue some contracts (i.e. charge very low prices) while operating on relatively high margins for other contracts.

268 **Deutsche Telekom**, European Commission decision, paragraph 127. This element is unaffected by the judgment of the ECJ in that case.
“In the case at hand, the margin squeeze test has been conducted on the basis of an aggregated approach, i.e. on the basis of the mix of services marketed by Telefónica on the relevant retail market. This approach (referred to as the “aggregated approach”) is based on the principle that competitors must at least be able to profitably replicate Telefónica’s product pattern. This is the approach most favourable to Telefónica, since it gives it maximal flexibility to spread the costs which are common to its retail products (provided that the margin squeeze test yields a positive result with the aggregated approach). The aggregated approach is consistent with a new entrant’s internal decision making process in that it assesses the profitability of its investment in a network by considering the complete range of products that it is able to offer in the relevant downstream market.”

6.41 In light of these considerations, our primary concern was the total product test. While pricing below incremental cost on individual contracts could be considered distortionary and undesirable, the total product test is central to understanding whether such pricing behaviour is exclusionary and could lead to a stifling of competition. On this basis, we considered whether BT’s charges were sufficient to recover the incremental costs of the Wholesale Calls business as a whole.

6.42 At the same time, we recognised that there are circumstances in which individual contracts may be of particular importance to competition, and therefore, the margins earned on such contracts are of interest. For example, in markets where there are strong economies of scale, individual contracts could be considered to be ‘competition enablers’. In such circumstances, we would be concerned about pricing below cost on such contracts even if the product as a whole was profitable. This is because winning the contracts that drive the largest volumes will be important for firms to enable them to operate at, or beyond, the minimum efficient scale. Also, even if an incumbent or dominant firm is operating significantly beyond the minimum efficient scale it may adopt a strategy of aggressively pursuing large volume contracts as a mechanism to deny entrants the opportunity to reach the minimum scale and therefore effectively compete in the market.

269 Telefónica, paragraph 388.

270 In the Statement of Objections, we explained that recovering incremental cost is the minimum level of cost recovery that would be consistent with sustainable competition. To demonstrate that charges that recover the incremental costs of provision are unambiguously inconsistent with a margin squeeze, it is also necessary to consider whether relevant (BT Group) common costs (e.g. general administration costs) were also recovered. This is done by carrying out combinatorial tests. Given our specific conclusions in this case, it is not necessary to conduct combinatorial tests to consider the level of BT Group common cost recovery.

271 Minimum efficient scale is the minimum level of output for the firm that is consistent with minimum average cost.

272 A similar issue arose, for example, in the Irish Sugar case (Case 97/624/EC: Irish Sugar [1997] 5 CMLR 666). In that case the Commission found Irish Sugar had abused its dominant position on the Irish sugar market. Irish Sugar’s abusive behaviour included offering rebates to certain wholesalers and food retailers that were dependent upon increases in their purchases of Irish Sugar’s product. The Commission found that this conduct made it difficult for small competitors to get a foothold in the market.
In the Statement of Objections, we considered that such characteristics are likely to exist to some extent in the market for wholesale end-to-end calls because:

- the market is characterised by a very small number of very large (principally residential) contracts and a long tail of smaller contracts; and

- there are fixed costs that give rise to some economies of scale for CPSOs – for example, CPSOs lease interconnection circuits to enable them to have a presence in a very high proportion of BT’s DLEs. By being connected at a deep level into BT’s network the CPSOs are able to achieve cost savings associated with conveyance but are also able to access the CPS SAD service. Without sufficient volumes, the cost effectiveness of the interconnection circuits is reduced.

We acknowledged that it could be argued that the impact of scale economies may be mitigated by firms competing for a proportion of the total volumes for the large contracts, as none of BT’s contracts are exclusive. However, we considered that while the contracts may not result in formal (i.e. contractual) exclusivity, if the price charged by one firm is below cost, as in the case of a margin squeeze, then the contract can be de facto exclusive as a competing CPSO is unlikely to find it commercially viable to compete.

Therefore, we considered that an analysis of the largest individual contracts was relevant in this case, as any anti-competitive pricing behaviour for these contracts may lead to significant distortion and foreclosure of competition across the wider market. Given that the larger contracts are individually priced, we were also keen to understand how BT’s pricing differed across these, in order to assess what was driving the overall product margin.

Regarding the individual service test, we expressed the view that pricing below incremental cost for individual call types is of secondary importance for this specific case, as firms in the wholesale calls market compete to supply bundles of call types (i.e. contracts) to resellers, rather than individual call types. For example, it is not possible for CPSOs to supply resellers with calls only to a specific mobile operator. Rather, contracts are typically for all relevant call types.

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273 For example, as we demonstrate in Table A3.2, the top 20 Wholesale Calls contracts in April 2009 (out of around [<] active Wholesale Calls customers) accounted for around [< 80-90]% of the total Wholesale Calls billed revenue for that month.

274 We considered that economies of scale are only likely to be of significant benefit to the CPSOs (i.e. not BT), for two reasons. First, we expect BT to remain interconnected at each of its DLEs irrespective of the level of BT Wholesale Calls volumes (given its retail volumes). Second, we would anticipate that the benefit of scale economies would diminish as volumes increase as the gains associated with being able to interconnect at previously unconnected DLEs become increasingly exploited. As such, these benefits are particularly important to competitors to BT given that they would be expected to have significantly lower volumes than BT (particularly when BT’s retail minutes are taken into account).

275 See paragraphs A4.57 to A4.62 for an explanation of CPS SAD.

276 BT had told us that none of its contracts for Wholesale Calls are exclusive, so resellers can multi-source from different CPSOs. Information provided in response to Question 11 of the 8th section 26 Notice, July 2009.
However, given that BT (and the CPSOs) agree call charges with resellers on the basis of volume mix forecasts, we acknowledged that pricing below cost on individual call types may be of some concern in circumstances where, for example:

- contracts are not exclusive and resellers are able to route individual types of call via different suppliers – this could give rise to cherry-picking by customers and the firm earning actual revenues below costs for the contract as a whole; and

- forecasts for volume mix are not realistic – if the reseller provides the forecast that BT or a CPSO uses to generate its prices, there might be an incentive to understate forecast volumes for those call types where prices will be below cost. Again, this could lead to the firm earning actual revenues below costs for the contract as a whole.

However, we explained that in considering the significance of these two issues it is important to note that:

- both scenarios would lead to the historical contract-level margin squeeze test being failed; and

- in this particular case, it appears that BT has taken steps to mitigate these risks by using contract clauses that limit the scope for resellers to deviate significantly from the volume forecast (specifically the call mix forecast).277

**BT's representations on the relevant output increment**

BT does not make any specific representations on our decision to analyse BT’s margins for the entire Wholesale Calls product, and individual contract margins. However, in its discussion of the likelihood of exclusionary effects, BT makes an argument which is relevant to our consideration of the individual contract increment.

Specifically, BT argues that Ofcom is wrong to consider that contracts in this market are 'competition enablers', as established players278 are already operating above minimum efficient scale, and with costs either sunk or scalable. Therefore, they are unlikely to achieve significant further economies of scale by increases in volumes.279

**Conclusions on the relevant output increment**

We remain of the view that the total product test is the most relevant output increment in this case.

Regarding the individual contract test, we recognise that to the extent that established players are unlikely to achieve significant further economies of scale by increases in volumes, the margins that BT earns on individual contracts will be less relevant. Whilst we respond to BT's arguments regarding economies of scale in Section 7 (see paragraphs 7.192 to 7.201), we note here that evidence from CPSOs

277 It is unclear, however, the extent to which BT has actually enforced such clauses during the period covered by this investigation.

278 BT argues that its primary competitive constraints come not from potential entrants but from established players such as C&W, Gamma and Opal.

279 BT Response, paragraphs B.78 and D.250 onwards.
points to scale being a factor when it comes to wholesale end-to-end calls contracts. C&W told us that “the key issue for C&W Worldwide on any wholesale calls contract is bottom line margin and scale”. Similarly, Gamma told us that the main implication of losing a certain high-volume contract ([>]) was that “our network economics and scale were affected adversely”. This suggests that it may still be relevant to look at the margins on individual contracts, at least for the largest contracts (such as [< Contract 1] and [< Contract 2]).

6.53 In any event, even if the scope for further economies of scale is limited, an assessment of the profitability of individual contracts is necessary to understand whether any negative margin on the total product is a result of widespread pricing below costs on a large number of contracts, or limited to BT’s pricing strategy on a small number of (large) contracts. This in turn informs our assessment of the effects of BT’s conduct on competition.

6.54 Therefore, we maintain that it is relevant to look at the margins on individual contracts, in addition to carrying out the total product test. At the very least, it is necessary in order to understand the nature of any negative margins earned on the Wholesale Calls product as a whole, and its effects on competition.

Elements of the cost stack

6.55 Having determined the appropriate cost standard (i.e. LRIC) and the output increment (i.e. individual contract and total product) for consideration in this case, the next step is to identify what elements should be included in the cost stack.

6.56 The purpose of constructing the cost stack is to enable us to assess whether BT has maintained sufficient margin between its upstream and downstream prices such that it covers its own downstream costs. This assessment is conducted by comparing BT’s downstream revenues against its downstream costs, including relevant upstream prices.

Approach taken in the Statement of Objections

6.57 In the Statement of Objections, we identified the following cost items for inclusion in the cost stack:

- **upstream inputs** – these consist of both: 1) the necessary inputs that the vertically integrated firm supplies upstream to both its downstream operation and to downstream competitors; and 2) inputs required that are not provided by the vertically integrated company itself. In the case of Wholesale Calls the upstream inputs provided by BT are call origination and call termination (including PPP282). Other upstream inputs which are not provided by BT,

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280 C&W response to Question 2 of the 4th section 26 Notice.

281 Gamma response to Question 2 of the 4th section 26 Notice. Gamma also stated that the consequence of losing the [> contract was that it “reviewed the architecture of its network and reduced some DLE capacity”.

282 BT’s product management, policy and planning (“PPP”) charge is used to recover the administrative costs incurred by BT as a result of providing narrowband interconnection. The charge is levied on all calls that use any part of BT’s narrowband network.

283 Note that this is under the unadjusted EEO test. Under the adjusted EEO formulation, CPS transaction charges are also an upstream input necessarily purchased by BT’s downstream
include call termination payments made to other networks such as MNOs and other CPs.

- **downstream business costs** – these consist of the costs incurred by the downstream operation to produce and sell the final product. In the case of Wholesale Calls these are all the costs incurred other than call origination and termination (including PPP). These costs can be broadly categorised as:
  
  o **network costs** – the provision of wholesale end-to-end calls requires either the CPSO or BT Wholesale Calls to traverse calls over their own networks.
  
  o **non-network costs** – in addition to the costs of the various upstream and downstream network components used to produce end-to-end calls, the BT Wholesale Calls business also incurs commercial costs associated with providing its service. These costs\(^{284}\) include, for example:
    
    - those associated with bidding for, winning and maintaining contracts;
    
    - key central functions such as finance, legal and regulatory affairs; and
    
    - systems costs such as billing systems or fraud management systems.

6.58 In addition, we explained in the Statement of Objections that for competition to be sustainable in the long run firms need to be able to recover their cost of capital. There are two main ways that the downstream cost of capital can be reflected in the margin squeeze test:

1. assess the earned margin against a benchmark rate of return that reflects the margin required to recover the cost of capital;\(^{285}\) or

2. include capital costs in the cost stack.

6.59 While we did not explicitly identify a separate cost item for the equally efficient operator’s downstream operation, we explained that our approach adopted the latter of these two options. However, rather than including an explicit separate cost item in the cost stack, capital costs were reflected in the downstream incremental costs. Specifically, the network cost estimates included a return on capital employed (as estimated by BT), while we assumed that non-network costs represented purely operating costs to BT Wholesale Calls and therefore did not require a return on capital.

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\(^{284}\) Note that as the relevant cost standard is LRIC, these costs are those that are incremental to Wholesale Calls and do not include any contribution to BT Group common costs.

\(^{285}\) Note that such an approach is complicated by the need to convert a return on capital into a return on sales via the capital intensity ratio.
Representations by C&W

6.60 In its Response, C&W argues Ofcom should make an allowance in the modelling for commercial risk, and gives three examples of sources of commercial risk that Ofcom has not considered:

- the risk arising when there is a time lag between an interconnect rate change occurring and being able to pass it through to resellers in changes to tariffs;
- the risk that capacity forecasts from resellers are inaccurate, resulting in significant additional costs. In the event of under-forecasts, CPSOs face costs associated with passing overflow traffic to BT; in the event of over-forecasts, CPSOs incur excess costs of interconnect capacity; and
- the risk of service level agreements being breached, resulting in service credits being paid.

6.61 In addition, C&W contends that an explicit allowance for the cost of capital should be considered.287

Conclusions on the elements of the cost stack

6.62 We have included the same cost items in the cost stack as we did in Statement of Objections. We discuss in detail the nature of these cost items, and our approach to modelling them in this case, from paragraph 6.198 and in Annex 4.288

6.63 We recognise that firms may face commercial risks which have the potential to result in additional costs. However, in this particular case, we consider that the sources of commercial risk specifically suggested by C&W are unlikely to give rise to material additional costs:

- Regarding the effect of a time lag between passing changes in interconnection costs through to resellers, it is not clear that the downside of this risk is greater than the upside. For example, BT’s contracts do not appear to differentiate the notice period depending on the direction of a price change.289 Therefore, in the event of a reduction in interconnection costs (for

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286 See paragraph 5.14 of C&W’s response to the Statement of Objections. See also paragraphs A.27-A.32 of THUS’ original complaint.

287 See paragraph 5.15 of C&W’s response to the Statement of Objections. C&W also argues that the cost of capital should reflect the opportunity cost to the business as well as the cost outlay required to finance capital expenditure (because capital devoted to one consumer project will not be available to another project).

288 As we noted in the Statement of Objections, although we disagree with the specific approach adopted by BT in its governance modelling to measure these cost items, BT’s modelling agrees with our assessment of the relevant cost items to be included in the stack in broad terms.

289 In THUS’ original complaint (paragraph A.28), THUS explains that it is common practice for large resellers such as [X<] to insist they get the benefit of price reductions immediately, but to require 30 days’ notice for any increases in price. This does not appear to be the case in BT’s contract with [X<].
example, a reduction in mobile termination rates), BT could equally benefit from a time lag before this is passed through to prices.\textsuperscript{290}

- In relation to forecasting inaccuracies, we recognise that significant inaccuracies in capacity forecasts could result in additional costs; however, these contract-specific risks can be diversified across a portfolio of contracts (and other products).\textsuperscript{291} Moreover, for less significant inaccuracies in forecasting, there may be no additional costs as the relationship between volumes and capacity is unlikely to be perfectly linear.

6.64 Notwithstanding these important points, we note that our historical analysis reflects the actual costs incurred and revenues earned by BT. Therefore, to the extent that certain risks materialised, the effect on costs and revenues is reflected. In addition, there is no evidence that the costs/revenues actually incurred/earned by BT under-represent (or over-represent) the ex ante commercial risks faced by BT.

**Basis for the cost test: the Equally Efficient Operator ("EEO")**

6.65 Having determined the types of cost to include in the cost stack, there is a question over how the costs are measured. The two primary options are a test based on:

- **the vertically integrated firm’s costs** (the EEO test) – this involves assessing whether the vertically integrated firm’s downstream arm could operate profitably given the wholesale charges paid by downstream competitors. Therefore, it tests whether equally or more efficient downstream competitors would be prevented from competing effectively using the vertically integrated firm’s downstream costs; or

- **the entrant’s costs** (the ‘Reasonably Efficient Operator’ or REO test) – this involves assessing whether, given the wholesale input prices and the prices charged by the vertically integrated operator in the downstream market, a reasonably efficient operator (i.e. not the vertically integrated firm) could make sufficient profits to continue to compete.

6.66 As we go on to explain below, European case law points to the EEO being the generally appropriate legal test in abuse of dominance cases. We have therefore based our analysis in this case on the EEO test. However, as we explain below, we also believe it is appropriate to consider the implications of BT’s incumbency advantages through the use of an ‘adjusted EEO’ test. This approach is consistent with European jurisprudence and that adopted in *Gamma Telecom*.

**Basis for the EEO test as the legal test**

6.67 The European Courts (both the General Court and the Court of Justice) have used the EEO as the appropriate comparator in abuse of dominance cases. Indeed, the *Deutsche Telekom* case clearly supports the use of the adjusted EEO test as the primary test for margin squeeze. The General Court in that case held:

\textsuperscript{290} This is particularly likely in the case of mobile termination rates, which during the relevant period tended to increase and decrease regularly (a practice known as flip-flopping). See Annex 4.

\textsuperscript{291} Although not explicitly referred to by C&W or THUS, we note that CPSOs also face risks associated with call mix forecasts. These risks are also diversifiable across a portfolio of contracts. Also, as noted in paragraph 6.44, BT has taken steps to mitigate these risks by using contract clauses that limit the scope for resellers to deviate significantly from their forecasts.
“...it follows clearly from the case law that the abusive nature of a dominant undertaking’s pricing practices is determined on the basis of its own situation, and therefore on the basis of its own charges and costs, rather than on the basis of the situation of actual or potential competitors.

Thus, in its judgment in Case C-62/86 AKZO v Commission\textsuperscript{292} paragraph 74 the Court of Justice took into consideration only the charges and costs of the dominant undertaking... The approach suggested by Advocate-General Lenz, according to which it was ‘necessary to analyse the cost structure of all three oligopolists [namely AKZO and its two competitors], so that a reliable picture [could] be obtained of the price level that was in fact economically justified’ (point 34 of his Opinion) was therefore not followed by the Court.

Similarly, the Court of First Instance held in Case T-5/97 Industrie des Poudres Spheriques\textsuperscript{293} that the fact that the applicant, which had complained of an alleged practice of margin squeezing, ‘cannot, seemingly because of its higher processing costs, remain competitive in the sale of the derived product cannot justify characterising the [dominant undertaking’s] pricing policy as abusive’ (para 179).

Finally, in its Decision 88/518/EEC of 18 July 1988 [British Sugar], the Commission also took the view that a margin squeeze should be calculated on the basis of the charges and costs of the vertically dominant operator.\textsuperscript{294}

6.68 Critically, the ECJ in Deutsche Telekom recognised that an approach other than the EEO (or adjusted EEO – see discussion below) in abuse of dominance cases may be contrary to the principle of legal certainty. If the lawfulness of particular pricing practices of a dominant undertaking depended on knowing the particular situation of competing undertakings, particularly their cost structure – information which is not generally known to the dominant undertaking – the latter would not be in a position to assess the lawfulness of its own activities.

6.69 The General Court noted that:

“Since it is necessary to consider whether the applicant itself, or an undertaking just as efficient as the applicant, would have been in a position to offer retail services otherwise than at a loss if it had first been obliged to pay wholesale access charges as an internal transfer price, the applicant’s argument that its competitors are not seeking to replicate its own customer pattern and can acquire additional revenue from innovative products which they alone supply on the market... is ineffective.”\textsuperscript{295}

6.70 This position was confirmed by the ECJ in its October 2010 judgment on Deutsche Telekom’s appeal of the General Court’s decision, and again in its preliminary ruling


\textsuperscript{293} [2000] ECR II-3755.

\textsuperscript{294} Deutsche Telekom, paragraphs 188-191.

\textsuperscript{295} Deutsche Telekom, paragraph 194.
in *TeliaSonera*. It has also been followed by the General Court in *Telefónica*. However the Court in *TeliaSonera* also recognised that there may be special circumstances in which it is appropriate to consider the prices and costs of competitors.

### 6.71

Reflecting this stance by the European courts, both the European Commission and UK competition authorities have used the EEO test in abuse of dominance cases. Furthermore, the Commission’s Guidance on Article 102 refers to an “as efficient competitor” when considering the application of the margin squeeze test.

### 6.72

We have investigated a number of allegations of anti-competitive exclusionary behaviour in recent years using our ex post competition powers. Despite some consideration of REO cost test results, Oftel/Ofcom’s primary approach in these cases has been based on an EEO methodology.

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296 *Deutsche Telekom* ECJ Judgment, paragraphs 198 to 202; *TeliaSonera* paragraphs 41 and 42.

297 *Telefónica*, paragraphs 190 to 196.

298 *TeliaSonera*, paragraphs 45 and 113.

299 For example, in BSkyB the OFT stated that “BSkyB should ensure that the margin between the prices it sets... is sufficient at least to cover its own costs of transformation”, referring to the “as efficient distributor” i.e. an equally efficient operator (paragraph 369, see also paragraph 362). The UK Court of Appeal in *Albion Water*, also adopted an EEO methodology, following the General Court’s judgment in *Deutsche Telekom* (*Albion Water* [2008] EWCA Civ 536, paragraph 80). In *Telefónica*, the Commission relied on the “as efficient competitor test” i.e. an equally efficient operator (paragraph 399).

300 See Guidance on the Commission’s Enforcement Priorities in Applying Article 82 EC Treaty to Abusive Exclusionary Conduct by Dominant Undertakings, OJ C 45/7, 24.2.09, paragraph 67.

301 For example in Vodafone, O2, Orange and T-Mobile (available at [http://stakeholders.ofcom.org.uk/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw_615/](http://stakeholders.ofcom.org.uk/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw_615/)) we considered whether the margin charged by each mobile operator would be sufficient to cover that mobile operator’s own downstream retail costs (paragraph 154). In *BT Together*, we conducted an EEO test and a “full blown” reasonably efficient operator test which included higher customer acquisition costs. However, in conducting the analysis, we did not reach a formal view on which test was the most relevant (paragraph 56), although we suggested that the full-blown reasonably efficient entrant test was not reasonable (paragraphs 120 and 121): “In assessing alleged anti-competitive conduct of a dominant undertaking it is relevant to consider whether it has structured its prices in such a way as to foreclose the market to its competitors, but not so as to price in such a way as to maintain its competitors position in the market irrespective of how inefficient they may be in the relevant downstream market.” (paragraph 121).

In *Gamma Telecom*, our approach was based principally on an EEO test. In our discussion of the appropriate test we noted: “The typical approach in a margin squeeze test is to assess whether the vertically integrated firm’s downstream arm could operate profitably at the wholesale charges paid by downstream competitors – this is known as the ‘equally efficient operator’ ("EEO") test.” (paragraph 53). However, as we explain below, we also adopted a variant of the test that moves away from a strict interpretation of the EEO test; the adjusted EEO test.

In *NCCN500*, Ofcom considered whether an operator as efficient as BT would be able to compete in the relevant downstream markets identified in the investigation, under the cost constraints imposed by NCCN500 (paragraph 1.12). However in this case, Ofcom also used the adjusted EEO test.
Use of an ‘adjusted EEO’ test

6.73 The General Court in Deutsche Telekom\textsuperscript{302} (subsequently upheld by the ECJ) and the ECJ in TeliaSonera\textsuperscript{303} provide support for the use of the ‘adjusted EEO’ test. This approach, while based on the firm’s own costs, makes some adjustments to reflect incumbency cost advantages the firm may have. Ofcom has also relied on the adjusted EEO test in a number of previous cases.\textsuperscript{304}

6.74 The ‘adjusted EEO’ approach acknowledges that it is possible that the costs of an entrant could be higher than those of the incumbent due to the incumbent having some unmatchable cost advantages arising from its legacy monopoly position. If this is the case, there is likely to be a case for adopting an alternative formulation of the EEO test on the grounds that, if these incumbency cost advantages are not taken into consideration, then competitors to BT downstream who are equally, or even marginally more, efficient than BT in all other respects than the incumbency advantage may never be able to match the prices BT sets. As a consequence, there is a risk that efficient entry and competition could be stifled.

6.75 In Deutsche Telekom the Commission included one-off charges for discontinuance in its cost stack as part of the wholesale charges, which were paid by competitors to the incumbent, but which were not paid by the incumbent itself. The General Court held that:

“…since the discontinuance charge is payable to [the dominant operator] by the competing recipient of wholesale access, when one of that recipient’s end-users discontinues his subscription for access services, the discontinuance charge forms part of the total cost of the wholesale service which must be reflected in the retail prices of the applicant’s competitors.”\textsuperscript{305}

6.76 The case law therefore recognises that there may be circumstances where it is appropriate to include charges which are payable to (rather than costs incurred by) the dominant operator, as this forms part of the total cost of the service for the dominant operator’s competitors. This charge is readily identifiable by the dominant operator, as the source of these charges, and so it is not inconsistent with the principle of legal certainty to include this in the cost stack.

6.77 In Gamma Telecom we adopted both an EEO test and an ‘adjusted EEO’ test. We considered CPS transfer charges to be unavoidable costs common to competitors but not faced by BT downstream and, therefore, included them in the adjusted EEO cost stack. Therefore, although the test was still based on BT’s costs (and not on those of competitors), it also included an allowance for BT’s cost advantages related to its incumbent position. The adjusted EEO test is a more difficult test for the vertically integrated firm to pass than the “unadjusted” EEO test because it includes additional cost items (reflecting the incumbency advantage). Therefore, if there is no

\textsuperscript{302} Deutsche Telekom, General Court judgment, paragraph 210. TeliaSonera, paragraph 45.

\textsuperscript{303} Case C-52/09 TeliaSonera AB v Konkurrensverket, paragraph 45.

\textsuperscript{304} For example, BT Together (paragraph 120), Gamma Telecom and NCCN500 (paragraphs 6.145 and 6.146).

\textsuperscript{305} Deutsche Telekom, General Court judgment, paragraph 210.
evidence of a margin squeeze on the basis of the adjusted EEO test, there will be no evidence of a margin squeeze under the “unadjusted” EEO test.

Conclusions on the appropriate test in this case

6.78 As explained above, it is clear from European case law that the primary ex post test for margin squeeze is based on the EEO test. These cases however, have also demonstrated that there may be grounds for adopting a formulation of the EEO test that takes into account some costs a competitor may face in competing against the vertically integrated firm (i.e. the ‘adjusted EEO’ test). Specifically, these costs reflect incumbency cost advantages that the vertically integrated firm has that could cause even an equally efficient competitor to be foreclosed.

6.79 We have conducted our margin squeeze test on the basis of an EEO test. However, in this case it is also necessary to carry out an adjusted EEO test, consistent with the approach adopted in *Gamma Telecom*. BT benefits from incumbency cost advantages in the form of reseller switching costs (as explained below).

6.80 We explain our approach to implementing both the EEO and the adjusted EEO test in more detail in paragraphs 6.183 to 6.247 and in Annex 4. However, the particular incumbency cost advantages that we consider should be reflected in this case relate to two cost items:

- **CPS annual charge** – BT levies an annual fixed charge (paid monthly) on all CPSOs who provide a CPS service. This charge is not paid by BT Wholesale Calls; and

- **CPS transfer charges** – BT levies per line charges on CPSOs for the costs involved in setting and altering CPS on retail customers’ lines. These charges also are not paid by BT Wholesale Calls.

6.81 Although the CPS annual charge is relatively small (around £25,000 per year per CPSO) and, as a fixed charge, is unlikely to distort bidding behaviour, the CPS transfer charges can be significant on large contracts as the margins are often thin and the number of lines large. We therefore believe that both of these costs should be considered within an adjusted EEO test.

6.82 BT supports our conclusion that the appropriate test for margin squeeze is the EEO test. Specifically, BT “accepts that the standard approach in case law is that a margin squeeze [analysis] should be conducted on the basis of the equally efficient operator test.” In its historical modelling, CRA adopts Ofcom’s approach to including CPS charges in the adjusted EEO test, noting that BT included an allowance for CLI migration charges in its [Contract 1 and Contract 2] governance models. In its response, C&W states that “Ofcom is right to include the CPS annual charges and CPS transfer charges in the costs analysis on the basis of the Adjusted Equally

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306 Note that where we refer to the ‘EEO test’ in the remainder of this document we are referring to the unadjusted EEO test.

307 See paragraph D.81 of BT’s Response. Similarly, CRA states in paragraph 25 of its Report: “We consider that the EEO standard is the correct standard to use in this case.”

308 CRA Report, paragraph 106. Also, it is noteworthy that in reporting the results of its analysis, CRA presents only the margin over adjusted EEO costs.
Efficient Operator (‘AEEO’) test.” C&W adds that it “reserves its position as to whether the AEEO approach ought to be applied more broadly in this case.”

Whether to use prospective or historical analysis to measure profitability

6.83 There are two methodological approaches to measuring the profitability of the entire Wholesale Calls business and individual contracts:

(i) Historical (retrospective) analysis – this \textit{ex post} approach uses historical data on costs and revenues to assess the profitability of individual contracts or the entire Wholesale Calls product on a backward-looking basis. This can be done on an accounting (period-by-period) basis, or a discounted cash flow (“DCF”)/net present value (“NPV”) basis (discussed in paragraphs 6.110 to 6.112 below).

(ii) Forward-looking (prospective) analysis – this \textit{ex ante} approach uses forecast data available at a point in time (for example, at the time of the bids) to forecast the profitability of individual contracts or the entire Wholesale Calls product on a forward-looking basis. Prospective analysis is usually done on a DCF/NPV basis.

Approach taken in the Statement of Objections

6.84 In the Statement of Objections, we examined BT’s margins using both historical analysis and prospective analysis.

6.85 We carried out our own historical analysis of profitability using data provided by BT, and adopted a historical accounting (or period-by-period) approach. We analysed the relevant costs incurred and revenue earned by BT Wholesale Calls in every month over the period March 2008 to April 2009, at both the total product level and an individual contract level for the largest contracts (including Contract 1 and Contract 2).

6.86 For our prospective analysis, we made a number of adjustments to BT’s governance models to correct particularly material errors and conceptual or methodological errors. This showed that if BT had adopted and correctly implemented a more appropriate set of assumptions, within its own governance modelling regime, it could have reasonably foreseen that it would earn negative margins for the total Wholesale Calls product as a result of its pricing behaviour.

6.87 We noted in the Statement of Objections that our use of BT’s models does not mean that we endorse the approach to assessment of margins adopted by BT. Rather, our approach was focussed on addressing the specific issue of whether, on the basis of its own governance modelling, BT could have reasonably foreseen, at the time of entering into Contract 1 and Contract 2 in particular, negative margins arising on the Wholesale Calls product as a whole.

6.88 In reaching the provisional conclusions set out in the Statement of Objections, we considered both the historical and prospective evidence on BT’s margins. We

\footnote{C&W Response, paragraph 2.3.}

\footnote{C&W Response, paragraph 2.3.}

\footnote{This was the period for which we had data from BT. See paragraphs 6.148 to 6.151 below.}
concluded that there was strong evidence that BT failed to maintain a sufficient margin between its upstream and downstream prices such that it failed to cover its downstream costs in relation to its Wholesale Calls product during the period July 2008 to April 2009, and that this was reasonably foreseeable.

**BT’s representations**

6.89 In its Response, BT contends that the correct way for Ofcom to assess the lawfulness of BT’s conduct is to assess the financial performance of the Wholesale Calls product – and individual contracts – on a prospective basis, rather than on a historical basis. BT asserts that Ofcom’s analysis of BT’s governance model was “secondary” to its primary, *ex post* analysis. The correct position, it argues, is that a prospective analysis is in fact the only “relevant and principled” means of verifying the existence of a margin squeeze, at least in the context of commercial bids for long-term contracts. BT’s reasons for its position are summarised below.

6.90 BT considers that for major long term contracts, no material competition takes place between the point of entry into the contract and its renewal. Therefore, the relevant question is whether there was a reasonable anticipation of a margin squeeze at the time of entering into the contract as this was the time at which any exclusion would occur. A competitor bids for such contracts based on their reasonable expectations at the time of the bid and is either excluded or not at that point in time. In BT’s view, a competitor would not illegally be excluded by another competitor’s bid which did not, based on reasonable expectations, constitute a margin squeeze, even if it subsequently transpired that the successful bidder had failed to recover its costs due to unforeseen changes in circumstances.

6.91 BT also argues that it is unfair for Ofcom to carry out its analysis on a historical basis. Contract bids are prospective in nature, based on forecasts and assumptions about the future. As such, while BT can be expected to act in good faith and to attempt to make reasonable forecasts based on information available to it at the time of the bid, it should not be criticised if these assumptions turn out to have been overly optimistic. Moreover, if changes in market conditions mean that the contract prices become unprofitable, there may be no way in which the firm can raise prices to avoid a margin squeeze without acting in breach of contract.

6.92 Moreover, BT argues that a historical approach would create uncertainty, as the final numbers may not be known for many years after the event. By way of example, BT notes the possibility of recovering overpayments of mobile call termination charges which have already been paid. BT contends that analysing BT’s performance on a prospective basis would avoid such uncertainty.

6.93 Given these reasons, BT argues that Ofcom should have considered whether the prices offered by BT to [Company 1 and Company 2] (and to other customers, to the extent that Ofcom relies on other contracts) were abusive when made, on a prospective analysis based on assumptions which were reasonable at the time.

6.94 BT submits that there is nothing in case law that precludes its proposed approach, and refers to a number of cases to support its proposed approach. BT argues that:

- a prospective approach is consistent with the requirement of legal certainty identified as relevant by the ECJ in both *Deutsche Telekom* and *TeliaSonera*;

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312 BT Response, paragraph D.19-D.52.
• a prospective approach, based on information available to BT at the time of the bids and reasonable assumptions as to future events, would have reflected Ofcom’s own practice and reasoning, endorsed by the CAT, in IMS;\(^{313}\)

• in BT Openworld,\(^{314}\) Oftel recognised the point that firms must rely on reasonable prospective estimates in making their commercial decisions. BT argues that it follows that the lawfulness of such conduct should be assessed on a similarly prospective basis;

• in UK-SPN,\(^{315}\) Oftel concluded there had been no margin squeeze in circumstances where BT’s original prospective analysis showed that the product would be incrementally profitable, even though a historical accounting approach based on actual volumes revealed a loss; and

• in Residential Broadband Pricing,\(^{316}\) Ofcom recognised that, even though its own DCF/NPV analysis gave rise to negative figures, there could be no abuse in circumstances where, under certain assumptions which BT might have regarded as reasonable at the time, a DCF/NPV analysis would have been positive.

6.95 Additionally, BT argues that the use of a prospective DCF approach over the life of the contracts would avoid accounting distortions that arise under a historical month-by-month analysis.

Conclusions on whether to use prospective or historical analysis to measure profitability

6.96 The approach to take when assessing a margin squeeze is affected by a number of issues, including the pricing of the products under consideration (is it fixed or does it vary between customers), the nature of competition in the market, the availability and reliability of data, legal certainty, and the nature of the evidence needed for a finding of margin squeeze. As BT accepts, there are several methods for assessing whether


\(^{314}\)Investigation by the Director General of Telecommunications into alleged anti-competitive practices by British Telecommunications plc in relation to BTOpenworld’s consumer broadband products, 20 November 2003: http://www.oft.gov.uk/shared_oft/ca98_public_register/decisions/freeserve.pdf

\(^{315}\)Investigation by the Director General of Telecommunications into alleged anti-competitive pricing by British Telecommunications Plc in relation to its UK-SPN calls service, 23 May 2003: http://www.oft.gov.uk/shared_oft/ca98_public_register/decisions/btukspnfinal.pdf

\(^{316}\)CW/00613/04/03, Investigation into BT’s residential broadband pricing, 2 November 2010: http://stakeholders.ofcom.org.uk/binaries/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw_613/decision.pdf
or not a business is profitable, and the appropriate method will depend on the facts of the case. 317

6.97 Before addressing this question, we note that BT’s arguments are focussed on the nature of competition for major contracts (especially [ كس Contract 1 and Contract 2]) rather than on the total product as a whole. 318 Although BT argues that the financial performance of the Wholesale Calls product should be assessed on a prospective basis, it does not give specific reasons for this.

6.98 In order to assess whether or not BT has carried out a margin squeeze, we must look at the profitability of the whole of the Wholesale Calls product. The costs and revenues associated with this product are dynamic and can vary significantly over time. There is not a single set price (or set of prices) which is maintained over a consistent period (as there was for example, in Gamma Telecom). This can be seen by considering the mix of various contracts offered by BT.

6.99 In relation to the major bespoke contracts, BT argues that no competition takes place between the point of entry into the contract and its renewal. BT’s argument characterises the market for major long term contracts as a bidding market (with competition only occurring at the time of bidding).

6.100 Minimum contractual commitments in the major long term contracts require resellers to use BT’s Wholesale Calls product for a significant proportion of the minutes. For example, [ كس discussion of Contract 2 terms]. 319 Similarly, [ كس Contract 1] had minimum spend commitment of £[ كس 100-200] million over the first [ كس 1-3] years of the contract, equivalent to [ كس a significant proportion] of its actual spend over this period. 320 [ كس]. 321 [ كس] explained that once the minimum commitment was met in each year, it “had no reason to consider alternative providers”. 322

6.101 However, BT’s Wholesale Calls product, which is the focus of our decision, is also made up of a large number of smaller contracts [ كس]. Some resellers have contracts with a number of CPSOs, and move volumes depending on the best terms available. Typically [ كس]. As a result, competition for the minutes associated with these contracts is not limited to the point of entry and renewal as resellers are able to transfer call minutes to take advantage of the best price available. This also means that call revenues, costs and volumes are dynamic.


318 In paragraph D.27 of its Response, BT characterises Ofcom’s concerns in the Statement of Objections as being “heavily focused on the prices offered by BT for a small number of major contracts, and in particular the terms offered to [ كس Company 1] and [ كس Company 2].” As explained in paragraphs 6.34 to 6.54 above, our primary concern was with the Wholesale Calls product as a whole. Our rationale for looking at individual contracts is set out at paragraphs 6.42 to 6.45.


320 [ كس Company 1] was committed to spending £[ كس 100-200] million on call charges over the [ كس 1-3] year period. [ كس]. Over the [ كس 1-3] years from [ كس] to [ كس], [ كس Company 1]’s actual spend on Wholesale Calls was around £[ كس] million.

321 [ كس].

322 [ كس].
6.102 In addition, the fact that BT [>|] suggests that competition could take place [>|]. We recognise that BT’s [>|], [>|], prices are [>|] for some minor call types (albeit to varying degrees), and although these are called “minor” calls, they [>|].323 [>|].

6.103 In light of the above, competition could (at least in theory) take place once the contracts are signed, and so foreclosure may not only occur at the time of bidding. To the extent that foreclosure can occur at other times, a historical approach to assessing the profitability of major long term contracts – and therefore the total product – remains relevant.

6.104 Moreover, forecasts are by their very nature speculative. Using forecasts of what may have occurred to establish whether or not a company has broken the law when there is actual data available as what has occurred would be to ignore the best available evidence. While forecasts may prove to be accurate, they are inherently uncertain – expected profitable volumes may not materialise for any number of reasons outside of BT’s control (e.g. the collapse or takeover of a customer). BT notes that some data (such as mobile call termination rates) may not be fixed for years after the event, which means that relying on actual data can take too long. However, this concern – that prices would change after conclusion of a contract - would apply equally to forecast data. Uncertainty of results can also be taken into account in sensitivity testing and the interpretation of the results.

6.105 BT also argues that the uncertainty created by being unable to rely on forecasts to ascertain whether corporate behaviour will fall foul of competition law, breaches the principle of legal certainty identified in Deutsche Telekom and TeliaSonera. However, the references in those cases to legal certainty refer to the fact that the equally efficient operator test should be used to ascertain the costs that an undertaking must cover (rather than the uncertain costs of the hypothetical reasonably efficient operator).

6.106 In this regard, we note that it is a long established principle that a dominant undertaking has a “special responsibility” not to allow its conduct to impair genuine undistorted competition on the common market.324 In this case, BT was also aware, from the previous Gamma Telecom decision, that should it continue to be dominant, there was potential for it to operate a margin squeeze in these markets, and that it must be careful to ensure it maintains a sufficiently high margin over its costs in pricing of its wholesale end to end calls products in this market. The Gamma Telecom model provided some guidance to BT as to how to achieve this. As noted in Section 9 BT made a number of changes to that model, and made a number of errors in its use. BT is of course free to make changes to its own internal procedures, as long as those changes are consistent with ensuring it remains compliant with competition law. This is the regulatory environment in which BT, as a dominant undertaking, operates, and which it must consider in its decision-making process.

6.107 BT argues that our approach is inconsistent with that taken in the IMS case where we focussed on the timing of the bid only – considering for that decision that once the contract had been awarded, the terms were fixed and the contract was exclusive. We note that in that case, Ofcom looked at the timing of the entry into the contract in the context of establishing dominance. As IMS was not found to be dominant at the point

323 For example, for [>| Contract 2], [>|]. For [>| Contract 1], [>|].

of entering into the contract, Ofcom did not consider that Article 102 (formerly Article 82) applied. Therefore, the question as to how the pricing of the contract should be assessed did not arise. The CAT agreed with this approach.

6.108 BT also argues that our reasoning is inconsistent with Oftel’s reasoning in the BT Openworld and UK-SPN cases, and Ofcom’s reasoning in the BT Residential Broadband Pricing case. In each of these cases we carried out a forward looking analysis. However, we note that in each of these cases, the methodology selected was the appropriate methodology for that case, and the conditions in those markets (which in the case of BT Openworld and BT Residential Pricing, were nascent, fast-growing markets). In other cases, the OFT and Ofcom have used both the historical approach and the forward looking approach as appropriate (see e.g. BSkyB325, and NCCN500326).

6.109 We note that the Commission in Telefónica found:

“There is no case law on unfair prices under Article 82 in which the existence of an abuse would have been analysed on the basis of the forecasts of the very company whose conduct is being investigated. In accordance with the case law and the practice of the Commission, also in the present case has the Commission based its DCF calculation on Telefónica’s historical costs and revenues in the period 2001-2006.

The question could none the less arise as to whether Telefónica’s pricing policy could be objectively justified if its initial business plan indicated a positive NPV with reasonable forecasts that are compatible with a competitive environment. Therefore, and exclusively for the purpose of assessing whether they indicate that Telefónica’s pricing policy could be objectively justified, the Commission has considered Telefónica’s forward NPV calculations.”327

6.110 Given the above, and the fact that the data relating to actual margins are available, we consider that to base a margin squeeze finding solely on the prospective approach advocated by BT would lead to a less robust conclusion in this case. We have therefore carried out a historical analysis.

6.111 However, as noted in the Statement of Objections we accept that a prospective analysis is also relevant given the characteristics of some of the main contracts. In order to inform our decision we have therefore carried out a forward looking analysis (based on BT’s own model) to consider whether, on the basis of reasonable assumptions, BT could have predicted a margin squeeze. (This is consistent with the approach taken in cases cited by BT). We note that where a prospective approach is relevant, historical analysis may still be appropriate to test the reasonableness of prospective forecasts.


326 NCCN500, Ofcom decision paragraphs 6.61-6.62.

327 Telefónica, European Commission Decision, paragraphs 381-382.
6.112 Therefore, we follow the same approach that we adopted in the Statement of Objections: we assess the margins on a historical basis, but also use BT’s governance models to assess the extent to which any negative margins could reasonably have been foreseen by BT. We believe that this approach best fits the available evidence in this case.

Summary of our approach to testing for a margin squeeze in this case

6.113 In the sub-sections above we have explained why, in this case, our approach to testing for a margin squeeze is:

- based on the use of the LRIC cost standard;
- for both the individual contract and total product output increments;
- on the basis of both the EEO and adjusted EEO test; and
- on the basis of historical and prospective analysis.

6.114 In the following two sections we explain how we have implemented this approach to assess both BT’s historical margins for Wholesale Calls and the extent to which any negative margins could reasonably have been foreseen by BT.

Analysis of BT’s historical margins for Wholesale Calls

Introduction

6.115 We have conducted a detailed analysis of BT’s financial performance during the period investigated in order to determine whether the margin between BT’s downstream and upstream prices was sufficient to enable its downstream operations to trade profitably. This analysis consists of a comparison in every month in the relevant period of the relevant costs incurred and revenue earned by BT Wholesale Calls, on both the total product level and an individual contract level for the largest contracts. In this section we explain our methodology for conducting this analysis as well as presenting the results. Details of how we have implemented the modelling are set out in Annex 4.

6.116 This sub-section is structured as follows:

- first, we identify our approach to a number of broad methodological issues central to defining the dimensions of the margin testing, namely the temporal treatment of costs/revenues, the relevant time period and the specific contracts to be considered in this case. In the case of the specific contracts to be covered we present only our conclusions, with the rationale for our choice explained in detail in Annex 3;

- second, we consider a number of methodological issues where our approach deviates from that adopted by BT in its governance modelling for Wholesale Calls. This involves specifically considering how to implement the EEO test in this case;

- third, we present the results of our analysis of BT’s margins for the Wholesale Calls product as a whole; and
• fourth, we present the results of our analysis of BT’s margins on a number of specific contracts, focusing on [Contract 1 and Contract 2] in particular;

• finally, we present our conclusions.328

6.117 In the following sub-section, we then go on to consider whether or not BT could, at the time of entering into the contracts, reasonably have expected them to generate sufficient margin to enable an EEO to compete profitably.

Temporal approach and relevant time period for our historical analysis

6.118 In the Statement of Objections, we considered the profitability of the Wholesale Calls business as a whole, and certain individual contracts, over the period March 2008 to April 2009. We analysed profitability on a month-by-month basis and over the period as a whole.

6.119 There are in principle several possible methods for assessing the financial performance of a business. In the context of our historical analysis, the two principal approaches are:

• accounting (accruals) approach – this approach (otherwise referred to as “period-by-period” analysis) assesses past profits using the costs and revenues of the company as recorded in its accounts; and

• DCF/NPV approach – this approach assesses the overall profitability of a business or investment project over the life of the business or project. In the context of our historical analysis, this would be backward-looking, using actual results.

6.120 Under both of these approaches, it is necessary to identify the relevant time period for the analysis. Margin squeeze cases typically involve considering revenue and cost information over a period of time rather than for a single point in time. This reflects the fact that:

• costs and revenues for firms are dynamic and can vary significantly over time. Therefore, for conclusions to be robust a sufficiently long period of time should be considered; and

• in the event that a margin squeeze is identified, it is important to understand the period over which the abuse has occurred.

Temporal approach to our historical analysis

Approach taken in the Statement of Objections

6.121 In the Statement of Objections, we noted that in Telefónica the Commission explained that:

“Both the period-by-period method and the DCF method address the same underlying issue of cost recovery over time but in different ways: The DCF approach looks at the profitability of a business over over

328 The results of our historical analysis presented in this decision do not reflect additional information and analysis provided by BT on 23 March 2012, given the stage at which we received this. However, we are confident that it will not impact on our overall proposed conclusions (see paragraph 6.333).
a reasonably long period (several years); it does not specify how costs should be recovered in distinct sub-periods (every year). It considers the evolution of revenues or costs of the company during the period employed for the analysis and calculates the NPV of the business. On the opposite, with the period-by-period method, standard accounting techniques result in some costs being treated as expenses and allocated only to the period in which they were incurred and other costs being capitalised and allocated to more than one time period, typically through the use of straight-line depreciation.329

6.122 However, as Ofcom noted in Freeserve:

“Under certain conditions, these different measures of profitability will give the same result; for example, where there are no changes in prices, costs or volumes over time.330 When conditions are changing, each of these methods provides a different perspective on the question of profitability. However, each method requires certain assumptions to be made to inform the question of profits or losses, and the appropriateness of the method(s) chosen can depend on the assumptions required in the specific circumstances of the investigation (e.g. whether historical data is available).”331

6.123 We also noted that both approaches have been considered in the most recent UK and European margin squeeze cases, including in BSkyB332 by the OFT, Freeserve and NCCN500333 by Ofcom and in Wanadoo and Telefónica by the Commission.

6.124 In Telefónica, the Commission considered in great detail the advantages and disadvantages of both the period-by-period and DCF approach. It noted that:

“The practice of the European Court of Justice and of the European Commission in cases involving price abuses (in particular predatory pricing, margin squeeze) has always been to assess the profitability of the dominant undertaking using the “period by period” approach. In Wanadoo, the Commission considered that the DCF method was inappropriate for the assessment of the existence of predatory prices despite the fact that the French residential broadband market was still growing. That market shows strong similarities with the Spanish

329 Telefónica, paragraph 330.


333 Complaint from Energis Communications Ltd about BT’s charges for NTS call termination, 1 August 2008, available at http://stakeholders.ofcom.org.uk/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw_823/.
6.125 We identified in the Statement of Objections that the recent cases where NPV analysis has been used (i.e. Wanadoo, Telefónica and Freeserve) have involved nascent, fast-growing retail markets for products where the firms needed to incur significant upfront investments in new technologies or capacity. Complaints regarding the pricing of these services were typically made at an early point in the products’ life cycles. In such market conditions it is conceivable that the unit costs could be expected to fall over time either through economies of scale (the upfront investments are spread over a growing number of customers) or through efficiency savings as firms benefit from learning effects or better technologies.

6.126 We recognised that in some circumstances it might be considered reasonable for a firm in such a market to set a price that does not cover the full costs of serving early customers, but which is economically sustainable over a longer time horizon as future cost reductions materialise.335 For example, demand conditions for the nascent, fast growing product may be such that a price that covers the full costs for providing it to early adopters would result in demand being choked off and, therefore, the product failing.

6.127 We were of the view that under such circumstances, the consideration of the profitability of a product or service over a longer time horizon (often based on forecasts of future demand), such as through the use of a DCF approach, may be appropriate. We noted, however, that in order to implement a DCF analysis it is necessary to make a number of judgements on parameters such as asset terminal values, discount rates and appropriate time period. This means that in markets where demand is relatively stable and there is relatively little up-front investment, the use of a period-by-period assessment as the principal approach appears preferable given:

1. the convergence of outcomes under DCF and period-by-period analysis; and
2. historical period-by-period analysis relies on actual data and therefore is less assumption dependent.

6.128 We noted that the views of the ECJ and Commission in Telefónica (quoted above) also support the use of a period-by-period assessment.

6.129 In the Statement of Objections, we took the view that the market for wholesale end-to-end calls is mature. While BT has invested in new systems and technology to win recent contracts, most notably [3<X Contract 1 and Contract 2] (as discussed below), we did not consider this level of investment336 to be so significant as to create a risk that the use of a period-by-period analysis would generate a distorted view. Rather,

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334 Telefónica, paragraph 331.

335 Note that this assumes that the cost savings are not matched by reductions in the competitive price of the product.

336 The total development costs incurred over the period April 2007 to April 2009 amounted to approximately £[3<X], which is approximately [3<X]% of Wholesale Calls revenues over the period March 2008 to April 2009.
by adopting such an approach (i.e. period-by-period) we considered that we were able to more accurately identify when any negative margins were incurred.

6.130 Our approach to measuring BT’s historical margins for Wholesale Calls in the Statement of Objections was therefore based on a period-by-period assessment. As mentioned above, BT incurred a number of fixed costs associated with investments in functionality or capacity of Wholesale Calls. While we did not consider these investments to be large relative to revenues, under the period-by-period approach we needed to ensure that they were entered into the Wholesale Calls cost stack in an appropriate manner. 337

BT’s representations on the temporal approach to our historical analysis 338

6.131 As noted in paragraph 6.95 above, BT contends that a prospective DCF/NPV approach reduces the risk of accounting distortions compared with Ofcom’s historical period-by-period approach. Whilst this particular argument is made in the context of BT’s overall case for a prospective approach to the margin squeeze analysis, it is more appropriate to respond to this argument here. 339

6.132 While BT does not disagree with our view that the Wholesale Calls market is mature, it argues that it is necessary to look beyond the market as a whole, and take into account the circumstances of the particular business concerned. 340 BT contends that in this case, there is still a real risk of accounting distortions, citing two examples:

- Development costs: between July 2007 and April 2009, BT incurred costs of £[<£] in developing the product which (BT says) it intended to recover over [<£] years. BT criticises our approach of allocating these costs on a straight-line basis, as it results in higher per minute costs towards the beginning of the period because there are fewer end-customers and therefore fewer minutes.
- CPS transfer charges: BT criticises Ofcom’s approach of modelling these costs in the months in which they were incurred, and states that in [<Contract 2] these costs are relatively heavily weighted towards the months included in the time period considered by Ofcom.

Conclusions on the temporal approach to our historical analysis

6.133 We recognised in the Statement of Objections that BT has invested in new systems and technology to win recent contracts. However, as we explained in the Statement of Objections, we do not consider this level of investment to be so significant as to create a risk that the use of a period-by-period analysis generates a distorted view.

337 Specifically, as the investments enable a stream of revenues to be earned over a period of time, it is inappropriate to account for the costs fully in the month that they are incurred. Rather they need to be spread over a period of time. Our approach to this issue is discussed in paragraphs 6.154 to 6.166 below.

338 BT Response, paragraphs D.42 – D.47.

339 It is in the context of our historical analysis that we need to decide on the correct temporal approach.

340 BT suggests that this point is supported by Ofcom’s decisions in the BT 084 & 0870 retail price change and UK-SPN cases.
By spreading these costs over an appropriate period of time, we consider that any potential distortion is largely avoided.

6.134 We acknowledged that spreading development costs on a straight-line basis results in higher per minute costs earlier on in contracts. However, given that development costs only represent around \( \times 0.5\% \) of the total product cost stack over the period under consideration, the potential for distortion is very small, and does not affect the overall results. Moreover, to the extent that our approach does lead to an underestimation of BT’s margins, the underestimation will be greatest in the months at the beginning of the modelling period, that is to say, months in which we find that BT earned positive margins anyway.

6.135 In relation to CPS transfer charges, we recognised in the Statement of Objections that CPS charges are one-off charges that are declining over time, and acknowledged that these charges should continue to decline as BT’s customer base matures. However, our analysis in the Statement of Objections suggested that our findings were not dependent on the treatment of CPS charges. This is still the case in our revised analysis: the conclusions we reach are the same even if the equally efficient operator is assumed to incur no CPS transaction costs (i.e. the ‘unadjusted’ EEO test). As such, our treatment of CPS transfer charges does not create a risk that a period-by-period analysis generates a distorted view.

6.136 In light of the above, we remain of the view that, in this case, the risk of accounting distortions is low, and therefore a period-by-period approach to assessing profitability is appropriate.

341 Statement of Objections, paragraph 6.250.

342 Over the modelling period March 2008 to April 2009, our straight-line approach to amortising development costs allocates £\( \times \) in each month at the total product level (i.e. £\( \times \) million over the period as a whole). One alternative approach would be to allocate the same amount over this period (i.e. £\( \times \)), but in proportion to the number of minutes in each month. Doing so would result in a lower cost allocation in each of the months \( \times \), and a higher cost allocation in each of the months \( \times \). Over the period July 2008 to April 2009 (i.e. the period over which we find BT failed to cover the costs of an equally efficient operator), total development costs using this alternative approach would be only £\( \times \) higher.


344 Although we noted that there will remain some CPS transaction costs reflecting ongoing end-user churn for the reseller.

345 Statement of Objections, paragraph 6.254. We also noted that \( \times \) declined in proportionate terms over time as volumes and revenues increase (Statement of Objections, paragraphs 6.197, 6.213 and 6.250). However, we took the view that future increases in revenues are likely to have a limited impact on overall profitability, given the small proportion of revenues that they represent.

346 BT suggests that Ofcom could have allocated these costs over the average life of the end-customers transferred. However, Ofcom did not have this data, nor has BT provided it as part of its Response (or the CRA report). Moreover, BT did not make this suggestion in response to this analysis in summer 2010.

347 In this particular case, we place no weight on the month-by-month assessment per se. We would not be concerned if BT failed the test in a single month only. Rather, we look at the monthly information to understand better how revenues and costs change over time.
6.137 In addition, BT’s main contention in relation to the temporal approach we adopted to the historical analysis appears to be as much about the time period over which the period-by-period analysis is carried out. In paragraph D.46 of its Response, BT states:

“...In the present case, BT’s particular circumstances meant that the possibility of accounting distortions from the application of a backward-looking historical month-by-month analysis over a relatively short time period is a real one.”

(emphasis added)

6.138 And in paragraph D.47:

“...it is artificial to examine the profitability of BT’s Wholesale Calls contracts and the Wholesale Calls product overall on a retrospective month-by-month basis over a relatively small portion of the contract period.”

(emphasis added)

6.139 CRA, advising BT, does not argue that Ofcom’s historical analysis should be carried out on a DCF/NPV basis and adopt the same accounting/period-by-period approach that Ofcom adopted in the Statement of Objections. CRA does, however, argue that the timeframe for the analysis should be longer.

6.140 Therefore, we now consider the relevant time period for our historical period-by-period analysis.

Relevant time period for our historical period-by-period analysis

Approach taken in the Statement of Objections

6.141 In the Statement of Objections, we explained that our preferred time period for consideration in this case is from January 2007. Prior to this date, BT had voluntarily provided Ofcom with informal undertakings with regards to its pricing of Wholesale Calls. Specifically it had agreed to publish its tariffs (which were differentiated by a small number of spend commitment levels) and not to offer bespoke pricing to individual customers. As explained in Section 3, from January 2007, BT stopped publishing its Wholesale Calls standard tariffs and started to provide bespoke tariffs for certain reseller customers as part of a wider initiative to aggressively pursue increased revenues and market share.

6.142 The impact of this step change in strategy is shown in data on BT’s performance in the wholesale calls market since early 2007. Figure 3.9 above shows how in the period in between the introduction of greater pricing flexibility (i.e. early 2007) and the start of [Contract 2](#), there was a significant increase in revenues (approximately $\text{[\%]}$).

6.143 We explained that we were not aware of any evidence to suggest that BT engaged in any form of margin squeeze in relation to Wholesale Calls in the period between that investigated in our 2005 Gamma Telecom investigation[348] and when BT started to offer bespoke prices in January 2007.

6.144 We formally requested monthly data on BT’s volumes and revenues for key Wholesale Calls’ contracts of interest and the Wholesale Calls’ business as a whole

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for the period from January 2007 to April 2009 inclusive. In its response BT indicated that it was only able to provide data for the period March 2008 to April 2009, noting that:

“The source of data for this response is BBFA. Data from this system is not available prior to March 2008. Due to system errors, total calls, minutes and revenue are not available before this date.”

6.145 Given the importance of revenue and call minute data to modelling both contract-specific and total product margins (see Annex 4 for more details), and the lack of sufficiently robust proxies for these data, we were unable to undertake any margin analysis for the period prior to March 2008. Our analysis therefore covered the period March 2008 to April 2009.

6.146 However, despite our preference for considering a longer period of time, we believed that the time period for which BT had been able to provide us with data was sufficient for us to draw robust conclusions:

- it spanned the period before [ shove Contract 1 and Contract 2] were signed and the subsequent migration of their customers on to Wholesale Calls. Given: i) [ shove ] (see Table A3.2 in Annex 3) compared to the remainder of Wholesale Calls; ii) [ shove ]; and iii) BT’s particularly aggressive pricing for them, they are key contracts for this decision.

- it covered a period of 14 months which should reduce the impact of any revenue or cost ‘shocks’ in individual months or seasonality in margins (this could, for example, relate to any seasonal variations in call patterns); and

- it spanned a period prior to and post THUS’ original complaint (May 2008) that might have caused BT to change its commercial behaviour.

BT’s representations on the relevant time period for our historical analysis

6.147 In its Response, BT argues that the time period analysed by Ofcom does not reflect the way both BT and its competitors would assess the potential profitability of any major long-term contract prior to making a bid, and of a product offering overall. BT argues that overall profitability at the product level should be assessed over at least the lifetime of [ shove Contract 2], and the correct time period for assessing the profitability of individual contracts is the lifetime of those contracts. These arguments are set out in more detail below.

Time period for assessing profitability of the product

6.148 BT argues that a competitor to BT supplying a wholesale end-to-end calls product would take a long term perspective and would only wish to be satisfied that any loss-making periods were outweighed by profitable periods in net present value terms. BT states that the competitor would not attempt to assess the viability of the product by

349 8th section 26 Notice to BT (dated 1 July 2009). Note that April 2009 was the most recent period for which data was available at the time of generating the 8th section 26 Notice.

350 BT response to Question 4 of the 8th section 26 Notice – “Wholesale Calls 8th s26 Request BT RESPONSE BATCH 1 060709 sent Q4.pdf”.

351 BT Response, paragraphs D.53-D.63.
reference to a small number of months that happened to coincide with the
commencement of the competitor’s major contracts.

6.149 BT therefore considers that the minimum period of time over which a retrospective
product-level margin squeeze analysis should be conducted would be the initial
lifetime of [X Contract 2] (i.e. [X]). BT’s reason is that this contract makes up a
significant proportion of BT Wholesale Calls revenue, so it would be reasonable only
to begin to assess the profitability of the product once all of the [X Company 2]
revenues have been accounted for.\(^{352}\)

6.150 Moreover, BT argues that the fact that BT invested in product development on a [X]-
year view suggests that the timeframe should be extended beyond the duration of [X Contract 2] towards [X] years. As data are not available to Ofcom at this stage to
conduct a [X]-year retrospective assessment, BT argues that Ofcom should assess
profitability of the product over the months for which data is available.

**Time period for assessing profitability of individual contracts**

6.151 BT considers that with respect to any particular bid, a competitor to BT will not ask
itself whether the contract would be profitable for each month of the contract (or for
an [X] period of ten months), but would consider whether the contract could be
expected to return a profit over its lifetime. Therefore, the time period for assessing
the profitability of individual contracts should reflect the lifetime of those contracts.

- In the case of [X Contract 2], BT argues that a proper retrospective
assessment would only be possible at the end of its [X] month term in [X].
BT suggests that there are even arguments for assessing this contract over a
longer period. First, winning the contract makes supplying the customer
beyond the term of the contract more likely (e.g. through contract renewal or
extensions). Second, even if the contract is not renewed, there will be a
migration period [X] during which BT will continue to be the supplier to some
extent.

- With regard to [X Contract 1], BT argues that, in principle, since the contract
is indefinite, a retrospective assessment should only end once [X]. BT
argues that two years should be the minimum period over which the contract
should be assessed retrospectively, [X].

**C&W’s representations on the relevant time period for our historical analysis**\(^{353}\)

6.152 Regarding the end point for our analysis, C&W comments that there was no
particular justification in the Statement of Objections for ceasing the period under
review in April 2009. However, C&W accepts that Ofcom has to choose a point at
which to stop its analysis. C&W also maintains that the infringement may have begun
as early as June/July 2007 and have continued beyond April 2009.

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\(^{352}\) CRA argues that the time period for historical product level analysis should have regard to the
nature and duration of the contracts that comprise the product, and also to other relevant factors such
as the lifetime of investments made in order to supply the product. CRA contends that, given the
significance of [X Contract 2] in terms of overall product level volumes and revenues, the product
level assessment should be over at least the lifetime of [X Contract 2]. See paragraph 92 of CRA
report, which forms Annex 1 to BT’s response.

\(^{353}\) C&W’s response to the Statement of Objections, paragraphs 5.16 to 5.17.
In addition, in paragraph 2.4 of its response, C&W argues that where the dominant undertaking has failed to retain relevant data (in this case, prior to March 2008), the regulator must be able to resort to competitors’ costs (possibly with adjustments in order to try to reflect an EEO rather than an REO standard).

**Conclusions on the relevant time period for our historical analysis**

The purpose of margin squeeze analysis is to assess whether a given behaviour in a specific period of time is prone to foreclose competitors in the downstream market. Therefore, the relevant time period for our historical period-by-period analysis should be sufficiently long to develop a reasonable view of the underlying profitability of the downstream operation.

The minimum period over which it is possible to assess profitability for the purpose of establishing whether there has been a margin squeeze will therefore depend on the specific circumstances of the case.

There are a number of factors which could mean a given period of time is too short to meaningfully assess profitability in the context of margin squeeze analysis. One factor we identified in the Statement of Objections was seasonality in margins. For example, seasonal variations in call patterns could result in negative margins in one period but positive margins in another, such that over the seasonal ‘cycle’ as a whole, the overall margin is positive. In such circumstances, considering profitability over a period of time shorter than the ‘cycle’ would give a misleading view of profitability. This is because the negative margins in the first period may not properly constitute a margin squeeze as the incumbent’s pricing would not foreclose competitors. An equally efficient operator could profitably match the incumbent’s prices, and would be willing to incur losses in the first period in the knowledge that it would recover these in the second period as the call mix changes.

In the Statement of Objections, we explicitly recognised the possibility of seasonality in margins in this case, but took the view that the 14 month period we considered was sufficiently long to reduce any impact. None of the parties responding to the Statement of Objections disputed our conclusion on this specific point.

BT’s claim that competitors to BT supplying a wholesale end-to-end calls product would only wish to be satisfied that any loss-making periods were outweighed by profitable periods in net present value terms appears to assume the presence of a

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354 *Telefónica*, European Commission Decision, paragraph 353.

355 For this reason, we note OfTEL’s conclusion on the relevant time period in *BT Openworld* – referred to by BT in paragraph D.54 of its Response – does not support BT’s position on the relevant time period in this case.

356 For the avoidance of doubt, we consider that seasonal variations in call mix are foreseeable. This differs from unforeseeable changes in call mix which are discussed below.

357 In this connection, we reject BT’s claim in paragraph D.54 of its Response that “Ofcom offers no reasoning in the Statement of Objections as to why the ten months up to April 2009 is an appropriate cut-off point for its analysis”. The Statement of Objections contained a detailed explanation of the relevant time period including why we believed that the 14 month period was sufficient to reach robust conclusions. We also noted that revenue or cost shocks could give rise to a misleading view of profitability. However, we believed that assessing profitability over fourteen months would reduce the impact of such shocks.
deliberate strategy to follow a specific temporal path of cost recovery. For example, if BT expected costs to reduce over time, or expected to increase prices over time, then finding negative margins in an early period may not be consistent with an abusive margin squeeze. If an equally efficient operator is able to adopt a similar strategy, then BT’s pricing may not foreclose competitors in the downstream market. Notwithstanding whether such a strategy is possible in this case, we have seen little evidence that BT adopted such a strategy:

- In the case of [Contract 1], BT’s CIB papers suggest that BT was expecting profitability in each year of the contract, and the forecasts presented show virtually flat margins over time. This is not surprising.
- In the case of [Contract 2], BT did expect the margin on [certain call types] to improve over time, however, we have not seen evidence of a more widespread strategy, and the margins on [Contract 2] over the life of the contract. In addition, although we find that margins on [Contract 2] improve over time, they do not change the overall profitability of [Contract 2] (i.e. the margin on this contract is still negative over a longer time period). Moreover, BT does not appear to rely on the improvement in margins on [Contract 2] in its governance modelling for [Contract 2].

6.159 BT’s expectation of improving margins on [certain call types] on [Contract 2] suggests that there may be a case for looking at the profitability of this particular contract over a longer period of time. However, we remain of the view that the time period considered in the Statement of Objections (March 2008 to April 2009) is, on balance, appropriate for the total product test. This is because the evidence of margin profiling is limited to [certain call types] on one contract (i.e. [Contract 2]), and this profiling is not sufficient, in our view, to distort the view of underlying profitability provided by using data for the period March 2008 to April 2009.

6.160 However, as we discuss in paragraph 6.285 below, later in this section we present our estimates of the margins earned by BT on the total product both including and excluding [Contract 1]. This is to inform our discussion of the impact of BT’s behaviour on competition in Section 7. Under the scenarios where the total product excludes [Contract 1], the importance of [Contract 2] within the remaining total product portfolio increases significantly. Given this, and our views on the merits of considering [Contract 2] over a longer time period (as discussed in the paragraph above) rather than a shorter time period, there appears to be a stronger argument for considering the profitability of the total product over the longer period when [Contract 1] is excluded.

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358 See CIB paper relating to [Contract 1], provided to Ofcom in response to 1st section 26 Notice.

359 The CIB paper relating to [Contract 2], states “[Contract 2].” BT provided the CIB paper to Ofcom in response to 4th section 26 Notice.

360 While not amounting to a strategy, we note that the CIB papers relating to [Contract 2] suggest that BT expected [Contract 2]. In our historical analysis, we have amortised [Contract 2]; see paragraphs 6.172 to 6.177.

361 As explained in paragraphs 6.402 and 6.403, BT’s approach to including the margins earned on minor call types (including [Contract 1]) in its governance modelling was highly simplified.

362 For example, [Contract 2] represents [41-50%] of total product minutes between July 2008 and April 2009 when [Contract 1] is excluded, compared to [31-40%] when it is included.
Contract 1] is excluded. On this basis, we analyse profitability of both the total product and individual contracts over a longer time period (March 2008 to December 2010) as part of our sensitivity analysis.363

6.161 In response to C&W’s point that BT may have earned negative margins prior to July 2008, we note that the data that are available show that, over the period March 2008 to June 2008, BT covered its costs for the total Wholesale Calls product. This result is expected given that we observe that the negative margin over the period from July 2008 is primarily a result of BT’s pricing on [▷ Contract 1 and Contract 2] (which only meaningfully came into effect in [▷]).

6.162 Regarding C&W’s argument that we should use competitors’ costs in order to consider the time period prior to March 2008, we note that that C&W is advocating the use of competitors’ costs. In this case, BT was unable to provide monthly data on its volumes and revenues (it could have provided information on unit costs), and it is not possible to use competitors’ volumes and revenues instead of BT’s.

Period of time over which to amortise fixed development costs

6.163 As mentioned above, BT has invested in new systems and technology to win recent contracts, most notably [▷ Contract 1 and Contract 2] (as discussed below). While we do not consider these investments to be large relative to revenues, under the period-by-period approach we need to ensure that they are entered into the Wholesale Calls cost stack in an appropriate manner. Specifically, as the investments enable a stream of revenues to be earned over a period of time, it is inappropriate to account for the costs fully in the month that they are incurred. Rather, they need to be spread over a period of time.

Approach adopted in Statement of Objections

6.164 In the Statement of Objections, we explained that a judgement is required as to the appropriate period of time to be adopted.

6.165 In our discussions with BT in July and August 2010, BT suggested to us that the economic life of the investments was the appropriate basis for determining the appropriate period of time for spreading the costs. Furthermore, BT explained that it assumes, for its own internal purposes, that the relevant economic life for these investments is [▷] years.

6.166 In the Statement of Objections, we considered that the appropriate time period for these costs to be recovered was over the life of [▷ Contract 2] (i.e. over [▷] months from July 2008).364 Our rationale for adopting this time period was that, in our view, the majority of these costs are common to [▷ Contract 1 and Contract 2] taken together as a combination.365 Given the uncertainty over the likelihood of BT

363 We extend the time period to December 2010 as this is the latest month for which BT provided data as part of its Response.

364 For the purpose of modelling we have assumed that this spreading of costs is on the basis of a straight-line profile. Therefore the costs are spread equally over the [▷] full months of [▷ Contract 2] (i.e. the [▷] months beginning July 2008).

365 While we accepted that the developments to the Wholesale Calls product undertaken by BT may be used for [▷], we did not consider that BT would have undertaken the investment without [▷] large contracts.
renewing those contracts at the end of their contract lives, BT should have reasonably sought to recover these investments over the life of [Contract 1 and Contract 2].

Representations on the time period over which to amortise fixed development costs

**BT's representations**

6.167 In its report, CRA argues that product development costs should be amortised over [years] rather than [months], on the basis that the majority of these developments either have been used by customers other than [Company 1 and/or Company 2], or could have been used by customers other than [Company 1 and/or Company 2]. CRA contends that product developments that were not contract-specific should be amortised over their useful life ([years]) rather than the life of a particular contract.

6.168 CRA claims that an ex post review of BT's development costs shows that approximately [41-50%] of the product development expenditures that were included in Ofcom's model for the Statement of Objections have been used by customers other than [Company 1 and Company 2]. In addition, CRA states that BT believed that some of the expenditures that have been used only by [Company 1 and Company 2] would benefit other customers. By way of example, CRA refers to the fact that BT tried to sell [3].

6.169 CRA therefore amortises these costs over [years] rather than [months] in its own modelling.

**C&W's representations**

6.170 C&W understands that BT committed to bespoke investment for [Contract 2], and that “BT's primary motivation for this investment was to develop a platform capable of delivering the product specification required by [Company 2]”. Therefore, C&W argues, these investments should be allocated during the lifetime of [Contract 2] and not apportioned over [years]. C&W makes the following additional points:

- C&W notes that the [Contract 2] requirements were very specific and as such it was highly unlikely that the platform could be re-used.

- C&W argues that any possibility to take advantage of these investments in later contracts was limited or non-existent given that [Company 2] accounted for a large proportion of the market, and the market was in decline.

- Given that BT only needed to commit to large scale investment upon securing [Contract 2] in order to satisfy the specific contract specifications, there is no evidence that BT’s existing customer base had any need for such investment and/or was willing to pay extra.

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366 CRA Report, paragraphs 135-140.

367 See paragraphs 5.12 and 5.13 of C&W's Response.

368 C&W explains [3].
Conclusions on the time period over which to amortise fixed development costs

6.171 We recognised in the Statement of Objections that a number of the developments to the Wholesale Calls product undertaken by BT could be used for contracts other than [Contract 1 and Contract 2]. However, this did not cause us to change our view that the appropriate period over which to spread these costs is [X] months.

6.172 We remain of the view that BT would not have undertaken the majority of these investments if it had not had [Contract 1 and Contract 2]. Neither BT nor CRA have provided any evidence to demonstrate that this view is incorrect. The fact that other customers have used, or could use, some of the developments does not mean that BT would have undertaken these investments were it not for [Contract 1 and Contract 2]. Therefore, on balance we remain of the view that these costs should be treated as incremental to [Contract 1 and Contract 2], and therefore should be recovered over the life of these contracts.

6.173 Furthermore, while BT and CRA assert that the economic life of these assets is [X] years, neither provided any evidence in their submissions to demonstrate the appropriateness of this specific period.

6.174 Although we recognise in paragraphs 3.45 and 3.46 that [Contract 1] is indefinite, the revenues were only guaranteed for a period of [1-3] years, as confirmed in BT’s response. Therefore, we consider that BT would need to recover any [Company 1]-specific costs over this [1-3] year period in order to be sure such costs were recovered.

6.175 In light of this, we continue to use the lifetime of [Contract 2] (i.e. [X] months) as the appropriate time period over which to amortise development costs, as this is the longer of the two.

Contracts analysed in our historical modelling

6.176 As we have explained in paragraphs 6.51 to 6.54, our approach to margin analysis in this case is to consider BT Wholesale Calls margins at the total product level and also the individual contract level.

6.177 Based on billing data provided by BT, BT Wholesale Calls had around [X] customers in April 2009. As set out in the Statement of Objections, we believe that

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369 As explained in paragraph 6.196 and Annex 4, for the purposes of modelling development costs, we conservatively treated them as incremental to the total product (reflecting BT’s view). For the avoidance of doubt, this should not be taken as us agreeing that these costs are not incremental to [Contract 1 and Contract 2] (individually and/or combined).

370 See paragraph D.59 of BT’s Response.

371 BT response to a clarification on the 8th section 26 Notice – “Billed revenue update collated 8th s26 161009.xls”.

372 “Customers” are defined as billing entities with non-zero billed revenues over the month. In a number of cases the billed revenues may be very small (as little as £1 or less), however the vast majority of customers appear to be what could be considered active customers.
it would be disproportionate to investigate each of these individual contracts. It is therefore important to identify those contracts which should be considered in detail, namely those individual contracts with the lowest rates and those which account for a significant amount of BT’s Wholesale Calls revenues.

6.178 For this investigation we have therefore analysed BT’s contracts for Wholesale Calls with the following 21 resellers:

- [$\geq$].

6.179 We explain why we have selected these specific contracts in Annex 3.

Representations by BT regarding treatment of [$\geq$ Contract 1]

6.180 In its Response, BT argues that [$\geq$ Contract 1] should be excluded from the analysis, as there could have been no exclusionary effect arising out of BT’s [$\geq$ Company 1] bid. BT explains that [$\geq$ Company 1] was never contemplating purchasing wholesale end-to-end calls from any other provider. BT claims that [$\geq$ Company 1] would have continued to meet its wholesale end-to-end calls requirements through self-supply (i.e. CPS) if not purchasing Wholesale Calls from BT. As such, the terms on which BT agreed to supply [$\geq$ Company 1] are irrelevant to an allegation of exclusionary margin squeeze. Therefore, the total product test should exclude [$\geq$ Company 1], and no analysis of [$\geq$ Contract 1] is required.

Conclusions on treatment of [$\geq$ Contract 1]

6.181 In our view, BT’s arguments regarding [$\geq$ Contract 1] are more relevant to the assessment of the effects of BT’s conduct (specifically, whether a negative margin on either the Wholesale Calls product as a whole, or [$\geq$ Contract 1] is likely to have a potential effect on competition). Therefore, we consider that [$\geq$ Contract 1] should be included in the analysis of the margin of BT’s Wholesale Calls business as a whole as it affects the overall profitability of the Wholesale Calls product, but that BT’s arguments should properly be taken into account when assessing the potential or actual effects resulting from any negative margins.

6.182 Therefore, for the purposes of assessing the financial performance of the Wholesale Calls business, we consider the total product including [$\geq$ Contract 1]. However, to aid the discussion of effects in Section 7, we also present the results for the total product excluding [$\geq$ Contract 1]. We continue to present the result of our analysis of BT’s margins on [$\geq$ Contract 1].

373 To do so would require us to collect monthly data from BT on revenues and volumes for each Wholesale Calls customer and for each call type in each month under investigation. We took the view that such a large information request would have been unnecessary and disproportionate in this case.

374 Although Gamma’s complaint against BT focused on the prices it had been offered by BT for Wholesale Calls, we have not included these prices in our analysis. This is because those negotiations did not result in a contract being concluded between the parties. As such, the BT Wholesale Calls product has not been provided to Gamma at the prices discussed.

375 See BT Response paragraph D.65, Part B.III.
Implementation of the EEO test in this case

6.183 In paragraphs 6.67 to 6.79 above we explain that the EEO test has been supported by the Courts as the appropriate basis for considering margin squeeze. We also explain that the relevant jurisprudence provides support for the use of an adjusted EEO test in certain circumstances.

6.184 In this sub-section we therefore consider how to implement the EEO test in the context of this particular case. Although we present these arguments in the context of the historical margin modelling, they are equally applicable to the analysis of BT’s governance modelling considered later in this section.

6.185 While it is clear that the EEO test is based on the costs of the incumbent, there are two broad approaches to interpreting the test. These consider whether the downstream operation of the vertically integrated firm could operate profitably if it:

- was to operate as a stand-alone business and was charged for the upstream inputs as its competitors are; or
- remains part of the vertically integrated firm but pays the same access prices as charged to competitors for its own consumption by way of internal transfer prices.

6.186 The key distinction between the two is that, in the second of the two options the downstream operation enjoys all the economies of scale and scope arising from its position within the vertically integrated firm.

6.187 In Gamma Telecom we stated that we considered “BT’s downstream arm but as a vertically separated entity with its own costs and revenues”. While this may initially appear to be more consistent with the first of the two options (i.e. excluding the economies of scale and scope), the modelling was actually based on BT’s incurred costs and did not involve any adjustments to remove any economies associated with Wholesale Calls being part of the vertically integrated firm. In practice the modelling approach in Gamma Telecom therefore reflects the second of the two options.

6.188 Subsequent cases pursued by the Commission and OFT also support the treatment of the EEO as remaining part of the vertically integrated firm (i.e. option 2). In Deutsche Telekom the Commission considered that the correct test was whether Deutsche Telekom:

“…would have been unable to offer its own retail services without incurring a loss if…it had had to pay the wholesale access price as an internal transfer price for its own retail operations.”

6.189 This approach was approved by the General Court when it stated:

“Since it is necessary to consider whether the applicant itself, or an undertaking just as efficient as the applicant, would have been in a position to offer retail services otherwise than at a loss if it had first

376 Gamma Telecom, paragraph 54.

377 Deutsche Telekom, European Commission Decision, Recital 140.
been obliged to pay wholesale access charges as an internal transfer price.”378

6.190 The ECJ went on to state that:

“As the General Court found, in essence, in paragraphs 187 and 194 of the judgment under appeal, since such a test can establish whether the appellant would itself have been able to offer its retail services to end-users otherwise than at a loss if it had first been obliged to pay its own wholesale prices for local loop access services, it was suitable for determining whether the appellant’s pricing practices had an exclusionary effect on competitors by squeezing their margins.

Such an approach is particularly justified because, as the General Court indicated, in essence, in paragraph 192 of the judgment under appeal, it is also consistent with the general principle of legal certainty in so far as the account taken of the costs of the dominant undertaking allows that undertaking, in light of its special responsibility under [Article 102 TFEU], to assess the lawfulness of its own conduct. Whilst a dominant undertaking knows what its own costs and charges are, it does not, as a general rule, know what its competitors’ costs and charges are.”379

6.191 In Telefónica the Commission again defined the EEO test to mean:

“A margin squeeze can be demonstrated by showing that the dominant company’s own downstream operations could not trade profitably on the basis of the upstream price charged to its competitors by the upstream operating arm of the dominant company.

...the relevant test is whether Telefónica would have been able to offer downstream services without incurring a loss if, during the period under investigation, it had had to pay the upstream access price charged to competitors as an internal transfer price for its own retail operations.”380

6.192 The Commission’s approach is consistent with that adopted by the OFT in BSkyB:

“The Director considers that the correct test, consistent with these precedents, should determine whether an undertaking as efficient in distributing as BSkyB can earn a normal profit when paying the wholesale prices charged by BSkyB to its distributors, and that this should be tested by reference to BSkyB’s own costs of transformation. BSkyB has strong incentives to minimise such costs. If BSkyB is not covering such costs, then it will acquire or maintain a market share not justified by any competitive advantage but rather by restricting its rival distributors’ ability to compete. This test will

378 Deutsche Telekom, General Court judgment, paragraph 194.

379 Deutsche Telekom, ECJ judgment, paragraphs 201 and 202.

380 Telefónica, paragraphs 311 and 312.
indicate whether BSkyB’s downstream business can operate profitably without subsidy from BSkyB overall.\(^{381}\)

6.193 In considering which approach is the most economically appropriate way of implementing the EEO test in this case, it is helpful to consider the economic rationale for using the margin squeeze test in the first place: to enable equally efficient (or more efficient) operators to compete with the vertically integrated firm in the downstream market.

6.194 By basing the margin squeeze test on the costs the firm actually incurs, the firm does not need to estimate the extent to which it benefits from any scale and scope economies when it is considering the extent to which any new pricing is consistent with competition law. By basing the margin squeeze test on the costs the firm actually incurs, the firm does not need to estimate the extent to which it benefits from any scale and scope economies when it is considering the extent to which any new pricing is consistent with competition law.

6.195 On this basis, we consider the most appropriate interpretation of the EEO in this case to be whether the downstream operation could operate profitably if it was to pay transfer prices for its consumption of upstream inputs at the prices faced by competitors.\(^{382}\)

6.196 As explained in paragraph 6.55 onwards, and in more depth later in this section, the test therefore requires quantifying two elements of the cost stack: downstream operating costs; and upstream payments to the vertically integrated firm itself and other input (i.e. in this case, call termination) providers.

**Treatment of downstream operation costs**

6.197 Under the EEO test the downstream operation costs are measured at the levels incurred by the vertically integrated firm. As discussed above, we consider it appropriate to include BT’s scale and scope advantages within the assessment. Therefore, the downstream operation costs should be included as they are incurred by BT in the provision of Wholesale Calls.

6.198 We consider these costs in more detail later in this section. However, as explained in paragraph 6.57, they can be classified into two broad categories:

- **Network costs** — as the EEO reflects BT’s costs of providing Wholesale Calls, the network costs included in the cost stack should be based on 100% DLE interconnection.\(^{383}\)

- **Non-network costs** — in addition to the costs of the various upstream and downstream network components to produce end-to-end calls, BT Wholesale Calls also incurs commercial and other costs associated with providing the service to customers. These costs, as incurred by BT, should be included in the cost stack.

\(^{381}\) BSkyB, paragraph 356.

\(^{382}\) We note that assuming that the EEO test is based on the downstream operation remaining part of the vertically integrated firm we allow BT to benefit from all the associated economies of scale and scope. Therefore, this results in a lower cost base and a more favourable test for BT.

\(^{383}\) No CPSO has actually achieved 100% DLE interconnectivity, but a number are very close. However, the level of connectivity of competitors/entrants is not strictly relevant under an EEO test; it is the extent to which the incumbent is interconnected that is relevant.
6.199 As the total product test is the most relevant output increment in this case (see paragraph 6.51 above), the allocation of these costs at the individual contract level is of secondary importance. In addition, since we find in this case that BT did not breach competition law, we do not need to reach a final view on the allocation of these costs to specific contracts.

6.200 As we explain in paragraphs 6.257 to 6.259 below, consistent with our position in Gamma Telecom, we treat network costs in this case as incremental to the individual call minute and, therefore, they are directly attributable to call types, contracts and the total Wholesale Calls product. On the other hand, reflecting the nature of the individual cost items, the non-network costs can either be contract-specific or relate to all or some contracts.

6.201 In principle, in circumstances where non-network costs are directly attributable to a specific contract, they should be included in the cost stack for that contract. Similarly, where costs are clearly common to all contracts, they should only be included in the cost stack for the total product. However, it is less clear how to treat costs that are common to a sub-group of contracts.

6.202 In Telefónica the Commission argued:

“Since the long run incremental cost of the individual product also includes the increase in the common costs resulting from the provision of the product in question, the mere fact that one cost is common to different operations does not necessarily imply that the long run incremental cost due to the activity in question is zero for any individual product. One must assess whether such common cost would have been incurred, partially or totally, if the company would have decided not to provide the product in question.”

6.203 On the basis of this, it could be argued that costs that are shared by a sub-group of contracts should be included in the contract-level tests for those contracts sharing the costs. However, adopting such an approach would require considering issues such as how to allocate the costs between those contracts that share the costs, particularly where contract lengths and size vary.

6.204 For the purposes of this investigation, we have included only those costs that BT identified as being directly attributable to the specific contract in the contract level incremental costs. Those additional costs that are common or shared by groups of contracts are only included at the total product level. We consider that this approach is appropriate given our view that the total product test is the most relevant test in this case.

6.205 Furthermore, our estimate of non-network costs related to systems and developments (i.e. the non-staff costs element of non-network costs) included in the cost stack relate only to those costs actually incurred by BT in the period from April

384 In paragraphs D.66 et seq of its Response, BT argues that network costs should be excluded from the analysis as these costs are common to a range of services and therefore are not incremental. BT’s arguments and our response are set out in paragraphs 6.260 to 6.263 below.

385 Telefónica, paragraph 320.

386 As identified by BT.
Therefore to the extent that BT has historically incurred additional relevant costs associated with billing or other systems (which are incremental to Wholesale Calls), or alternatively, is likely to incur additional expenditure, that should reasonably be recovered from current contracts, these costs are not included in the cost stack. Given our conclusions on effects in Section 7, it is not necessary for us to make the additional assumptions required to include these costs.

**Treatment of upstream costs**

**Approach in the Statement of Objections**

6.206 As explained above, we considered the most appropriate implementation of the EEO to be based on assessing whether the downstream operation could operate profitably if it was to pay transfer prices for its consumption of upstream inputs at the prices faced by competitors. We believed that this approach was consistent with margin squeeze case law. 389

6.207 We therefore took the view that the appropriate way to implement the EEO test in this case was to assume that all of BT’s consumption of call origination and termination was charged at the full (regulated) price. 390 We recognised that this differed from the approach adopted by BT in its internal governance modelling, but noted that this was consistent with the approach we had adopted in *Gamma Telecom.*

6.208 BT adopted a different approach in its internal governance modelling. It considered that the upstream costs in the EEO cost stack should be based on what it considered an “equally efficient” CPSO would consume. In the paragraphs below, we describe the approach taken by BT in its internal governance modelling. We then summarise why in the Statement of Objections we believed BT’s approach was inappropriate for this particular case.

**BT’s approach in its governance modelling**

6.209 To estimate the upstream costs that an “equally efficient” CPSO would consume, BT assumed that an efficient “CPSO will build out their network to key customers, thus are able to influence (& increase) the proportion of calls originating on their own networks.” 391 As a consequence of building out, 392 BT argued that the “EEO” would

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387 BT noted in its response to Question 44 of the 8th section 26 Notice that it was unable to locate any records of development costs incurred between January 2007 and March 2007 (inclusive). As a consequence, BT assumed, for the purposes of its response, that no development costs were incurred in this period.

388 Costs incurred after the end of the relevant time period are not included in the cost stack. Specifically, in our analysis of margins over the period March 2008 to April 2009, costs incurred in the period following April 2009 are not included in the cost stack. In our analysis over the longer period (March 2008 to December 2010), any costs that BT has incurred (or is likely to incur) in the period following December 2010 are not included in the cost stack. See Annex 4.

389 See, for example, the European Commission’s position in *Telefónica* (paragraph 315).

390 Subject to the discussion of CPS SAD in Annex 4.

391 Data provided as part of BT’s response to our first section 26 Notice. [\textcopyright].

392 Which BT claims could be via LLU, for example.
self-supply a proportion of calls and, therefore, would not incur upstream (call origination and termination) charges for that proportion.

6.210 BT based its assumptions on the share of local and national geographic and fixed-to-mobile calls that would not incur upstream charges on data published in Ofcom’s quarterly Telecommunications Market Data Update. Using Ofcom’s Q4 2007 update, BT estimated that an “EEO” would carry on its own network:

- \([\geq 21-30\%]\) of originating local and national geographic traffic;
- \([\geq 21-30\%]\) of originating traffic to mobile number ranges; and
- \([\leq 0-10\%]\) of terminating local and national geographic traffic.

6.211 For the traffic assumed to originate and terminate on the EEO’s own network, BT assumed that there were zero upstream interconnection charges. The effect of these assumptions was to substantially lower the EEO’s costs.

6.212 In the Statement of Objections, we expressed a number of legal, economic and implementation concerns with BT’s proposed approach in this specific case.

Legal concerns expressed in the Statement of Objections

6.213 We expressed the view that BT’s approach of hypothesising what the upstream consumption and costs of an efficient competitor would be was inconsistent with case law. As explained above, the case law shows that the EEO’s cost base should be based on the vertically integrated firm’s own costs. As all BT Wholesale Calls minutes originate on a BT line, we provisionally concluded that BT consumes BT call origination on all Wholesale Calls minutes. Therefore, as BT’s upstream costs include BT call origination on all minutes, the EEO cost stack should be based on all call minutes incurring the full CPL BT call origination charge.

6.214 We also considered that basing the definition of the EEO cost base on BT’s own costs allowed BT greater certainty in understanding if any charges it intends to levy are consistent with its competition law obligations. It does not need to speculate what upstream call origination inputs an efficient competitor may consume as is required by the approach it proposed.

Economic concerns expressed in the Statement of Objections

6.215 In our view, the economic objective of enforcing competition law in this particular case is to enable and protect efficient downstream competition (and the associated consumer benefits) in the face of an upstream economic bottleneck. Although our analysis shows that BT was dominant upstream (in the supply of call origination and

393 [http://www.ofcom.org.uk/research/cm/tables/ - \([\geq\]).

394 \([\geq\])

395 BT assumed that the cost of this proportion of traffic is included in the EEO’s downstream network costs.

396 Indeed, by using the costs of an efficient competitor with a different cost base to its own, BT’s approach is more akin to a reasonably efficient operator test (but a competing operator that crucially would have a lower cost base than what one would assume by adopting the EEO test).
termination) during the relevant period, the downstream activities associated with providing a wholesale end-to-end call are contestable. By basing the EEO test (and therefore the assessment of whether a margin squeeze has occurred) on the costs that BT incurs in providing Wholesale Calls, downstream competition is protected where it is efficient (i.e. where BT’s competitors for wholesale end-to-end calls are at least as efficient as BT downstream).

6.216 We contrasted this with BT’s approach, which only results in entrants being able to compete with BT downstream if they have a very substantial (upstream) access network. Therefore, in circumstances where a CPSO is more efficient than BT downstream, but does not have a sufficiently large access network upstream, it would not be able to compete with BT.

6.217 We accepted that in certain circumstances an approach such as that advocated by BT may be justified from an economic point of view. If, for example, a market is characterised by a number of existing firms that are able to self-supply a proportion of the upstream input themselves, and provide this input at a sufficiently low cost so as to render the incumbent uncompetitive regardless of the relative levels of efficiency in the downstream market, we could see that there may be arguments to adjust the margin squeeze test to reflect these market characteristics.

6.218 We noted that BT’s interpretation of the EEO test in this case was motivated by its belief that other providers of wholesale end-to-end calls are able to charge lower prices to resellers than it would be permitted to do if it adopted the interpretation of the test that we were proposing in the Statement of Objections. Our understanding was that BT believed that its competitors may use LLU or other means to provide access services in a way that is cheaper than relying solely on regulated call origination and termination provided by BT (and others). In other words, BT believed that its competitors are able to replicate its Wholesale Calls product using alternative, lower cost, upstream inputs and, therefore, undercut it when bidding for reseller contracts.

6.219 However, we concluded that such an argument was not appropriate in this specific case. This was for two main reasons:

- **Indispensability of the upstream input and the comparability of the downstream product** – the focal product defined in the Statement of Objections was wholesale end-to-end calls. This encompassed both BT Wholesale Calls and CPS-based wholesale calls. By definition wholesale end-to-end calls must originate on a BT line, and therefore incur BT call origination charges. It is for this reason that we provisionally concluded that BT call origination is a necessary upstream input in the provision of wholesale end-to-end calls. While wholesale voice calls could be provided using other wholesale inputs such as LLU, we did not believe this is relevant in this case as we were unaware of any CP that provided such a wholesale service.

- **Foreclosing dynamic retail competition** – we also outlined the view that firms may consider the use of CPS to be a method of building a sufficiently large customer base to justify the additional investment required to enter LLU. We suggested that by allowing BT to margin squeeze on the basis of ‘pure’ CPS wholesale calls (by which we meant competitors entirely reliant on access

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397 As noted in paragraph 11 of CRA International’s report for BT Do the Gamma and Thus Complaints provide a plausible theory of harm? (13 March 2009).
products for upstream inputs), firms could be foreclosed from securing a large
customer base before developing an LLU product. Therefore, to prevent the
potential for foreclosing dynamic retail competition, we considered that BT’s
Wholesale Calls’ prices should be replicable on the basis of all potential
wholesale inputs, including ’pure’ CPS, not simply one specific combination of
upstream inputs (such as including a proportion that is self-supplied). Moreover, BT’s competitors at the retail level need access to BT Wholesale Calls
or CPS-based wholesale calls as no retail supplier can serve the whole UK
market on the basis of LLU alone.

Implementation concerns expressed in the Statement of Objections

6.220 In addition to our legal and economic concerns, we also believed that BT’s specific application of the approach was inappropriate for this particular case. Specifically, we argued that BT’s parameters inappropriately used \([\times]\) such that the existence of self-provision of upstream inputs by BT’s competitors (i.e. other CPSOs) would, in any event, be over-stated.

6.221 We explained that the data used by BT came from \([\geq]\).400

6.222 The data presented in \([\geq]\) relates to all end users and therefore aggregates business and residential customers. These two groups have clearly very different requirements for fixed line services and, as such, demand different services from operators. Firstly, residential users are less likely than business users to have a direct access line from operators other than BT and Virgin Media. This is because residential customers typically spend less than business users and therefore investment in the provision of a direct access link is less economically viable. Secondly, the nature of any direct access provision for these two groups varies. Where residential customers are provided by other operators with direct access, this is most likely to be through MPF (i.e. full LLU). This contrasts with business users who are more likely to have some

398 A similar argument was used in the context of broadband in Telefónica. In this case the vertically integrated firm (Telefónica) argued that competitors at the retail level did not consume just one wholesale product but a mix of different inputs. Reflecting this view, Telefónica argued that an equally efficient operator would therefore use an optimal mix of wholesale inputs, not simply a single wholesale input as the scenarios the Commission modelled in the SO considered. The Commission notes (paragraph 390) that “Telefónica alleged that the approach of the Commission is artificial and does not reflect the strategy adopted by alternative operators in the retail market”. In its final Decision, the Commission notes that: “…the Commission considers that it is appropriate to examine whether Telefónica’s retail prices could be replicated on the basis of each of Telefónica’s non substitutable relevant wholesale products taken one by one, as opposed to any specific mix of the three products.” (paragraph 396). The Commission’s explanation for its position (paragraph 392) related to the so-called “ladder of investment”. It was argued that competitors engaged in investments in a step-by-step approach whereby each expansion is achieved once a critical mass has been achieved. In order for firms to climb the ladder of investment, the Commission argued that there should be no margin squeeze on any step (i.e. in relation to any wholesale input). The Commission went on to argue that if there was a margin squeeze, new entrants climbing the ladder would be foreclosed. We note that the General Court has upheld the Commission’s use of EEO in this case, see Case T-336/07 Telefónica v Commission, judgment of 29 March 2012.


400 See \([\geq]\).
form of connection provided directly by the CP (i.e. not provided on a wholesale basis by Openreach). In its governance modelling BT used data from [×]. [×].

6.223 These differences in the demand patterns for these two user groups is demonstrated by considering the data in [×] of the Quarterly Update. [×]. Analysis of these data shows that, for Q4 2007, while the proportion of direct access estimated by BT for all end users is [× 21-30]%, the proportion for business customers is around [× 41-50]% while for residential customers it is only around [× 0-10]%.

6.224 These significant differences in the proportions derived from the Quarterly Update depending on whether the estimates are based on all end users or just residential or business end users, in conjunction with the differences in the nature of the direct access provision between these groups, means the choice of end user group is important.

6.225 In our view it was unlikely that BT’s use of data for all end users was the most appropriate approach in this case (notwithstanding our other legal and economic concerns). Specifically, some of the biggest wholesale end-to-end calls contracts that BT and the CPSOs compete for are principally for resellers that target residential end users (e.g. Sky and Post Office). In this context it seemed inappropriate to base the assumptions on the extent to which these largely residential end users could be served by CPSO own-access infrastructure on statistics that are influenced to a very large extent by business end user demand patterns.

6.226 Furthermore, we noted that [× Company 1] uses wholesale end-to-end calls (specifically BT Wholesale Calls) in order to provide a retail calls service to those customers that it is not able to service using [×]. [×].

6.227 Notwithstanding our legal, economic and implementation concerns regarding BT’s proposed approach in this specific case, we considered in the Statement of Objections the sensitivity of our conclusions to a scenario under its proposed approach. Our analysis suggested that, while the margin estimated was greater, our overall conclusion (i.e. that BT earned a negative margin on the Wholesale Calls total product over the period July 2008 to April 2009) did not change.

6.228 Therefore, in contrast to BT’s approach, we considered the appropriate treatment of call origination and termination for the EEO cost stack in this case is to cost all of BT’s consumption at the regulated access charge price.

Representations by BT

6.229 BT argues in its Response that Ofcom’s approach to the modelling of call origination is contrary to principle and commercially unrealistic. Although BT accepts

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401 [×].

402 [×].

403 Specifically, we considered a scenario in which the proportions of call minutes assumed to originate and terminate by the EEO on its own access network were as per those assumed by BT. These call minutes were assumed to attract BT’s pence per minute incremental cost (as opposed to the CPL charge). This scenario is equivalent to including the proportion of call origination and termination in the downstream network costs as opposed to the upstream interconnection costs.

404 BT Response, paragraphs D.80 to D.87.
that what matters for margin squeeze analysis is primarily the costs of the dominant firm, it claims that there are difficulties with such an approach in this particular case.

6.230 BT argues that it is unrealistic to assume that BT consumes call origination on 100% of calls provided using its Wholesale Calls product as call origination is a regulated product that it does not itself purchase. BT claims that it is no more correct to say that Wholesale Calls are made on the basis of call origination than it is to say that they are made on the basis of LLU or some other “hypothetical intermediary” between the two.

6.231 BT suggests that if BT Wholesale was a separate standalone firm, it is unlikely that BT would rely on 100% call origination. BT notes that its competitors supply calls using a mixture of call origination, MPF and fibre.

6.232 Given this, BT argues that it was reasonable for it to look at what access network other efficient operators had that allowed them to avoid paying call origination charges. It then used the average access network build-out of its competitors as a proxy for what an EEO would do. BT considers that its use of the average figure is likely to underestimate the extent to which an efficient operator would have rolled out access network.

6.233 BT considers that it is reasonable to assume that the incremental cost of supplying a voice call over an own access network is zero, as the costs of MPF or fibre are common to the provision of a number of different services, of which calls are only one.

6.234 BT accepts that resellers with their own access networks would use these networks as far as possible, meaning that they would only require wholesale end-to-end calls products for customers that they could not serve with their own networks. However, to the extent that a CPSO’s network had access network in areas not served by the reseller’s network, BT argues that the CPSO would avoid call origination charges when providing calls to that reseller.405

6.235 BT disagrees that its approach is inconsistent with existing case law. BT notes that the ECJ has endorsed the position that there are circumstances, including where it is not possible in practice to identify the costs of the EEO directly, where it may be appropriate to use a realistic approach to costs and upstream charges that are actually faced by competitors.407 BT denies that this is the same as applying an REO test, arguing that it is simply using its competitors’ costs as a proxy for an EEO in circumstances where it is not possible to identify the costs of the EEO directly.

6.236 BT also rejects Ofcom’s arguments about legal certainty, arguing that it is a safeguard intended to operate in the interests of the dominant undertaking, to ensure that it is in a position to assess the lawfulness of its actions. It should not be

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405 BT notes that even though [X]’s LLU roll-out [X], it is still likely that there were some areas when a competing CPSO had an access network but [X] did not. Therefore, an efficient CPSO bidding for [X Contract 1] could have been expected to avoid BT’s call origination charges to some extent. (Paragraph D.87 of BT’s Response).

406 Paragraphs D.88 to D.105 of BT’s Response.

407 BT refers to paragraphs 45 and 46 of the ECJ’s decision in TeliaSonera to support its view.
permitted to operate to a dominant undertaking’s disadvantage by compelling the assessment of the legality of its conduct on an unrealistic basis. BT suggests that Ofcom seems to be implying that it is better to base the margin squeeze test on an assessment that is precisely wrong (i.e. the fiction that BT buys 100% call origination) rather than an assessment that is roughly right (i.e. a reasonable estimate of what an efficient operator would pay).

6.237 BT notes that Ofcom recognised that there may be certain circumstances in which BT’s approach might be justified from an economic point of view, including where firms are able to self-supply a proportion of the upstream inputs at a sufficiently low cost so as to render the incumbent uncompetitive regardless of the relative levels of efficiency in the downstream market. BT argues that these are precisely the circumstances faced by BT as competitors have significant access networks that they use to deliver voice calls. BT rejects the economic concerns about this approach raised by Ofcom in the Statement of Objections:

- Ofcom’s argument that BT call origination is an indispensible input is not correct. Competitors were competing against Wholesale Calls using their own access networks (including fibre and MPF) and so were avoiding paying call origination on 100% of their calls, meaning that call origination was not an indispensible input for 100% of voice calls supplied by CPSOs.
- Ofcom’s argument that allowing BT to set a margin between upstream and downstream prices that excludes equally efficient operators that are entirely reliant on BT’s upstream inputs would prevent these firms from moving to LLU is not relevant. From 2007 onwards, the realistic competitors for large contracts were already capable of bypassing BT call origination on a substantial scale. Moreover, Ofcom’s argument is akin to an entry assistance argument. Given that strong competitors were already competing successfully there are no grounds for such an approach.

6.238 BT also rejects Ofcom’s claims that it misused Ofcom statistics when choosing to assume that an efficient competitor would avoid call origination charges on [× 21-30]% of call minutes:

- BT claims that Ofcom’s concern is not relevant to the argument about the principle of whether or not it was correct for BT to assume that efficient competitors would buy 100% call origination. It is an argument about how much above 0% the correct number should be.
- BT maintains that this is a reasonable estimate of the extent to which an efficient operator (with multiple contracts) would have avoided call origination charges when supplying a reseller without an access network. However, BT accepts that where it was known that the reseller would predominantly serve either residential or business customers, then it would have been more reasonable to assume a number which had regard to the particular circumstances of that transaction.

408 [×].

409 BT notes that, in the context of [× Company 2] [× 21-30]% was arguably not unreasonable for a residential only reseller, given the rapid growth in residential supply by LLU and fibre that was evident in the industry. See paragraph D.103 of BT’s Response. CRA agrees with BT that [× 21-30]% is a reasonable assumption for any reseller that did not have its own LLU or fibre network, and whose
• BT accepts that \(<\text{Company 2}'s\) network means that a CPSO competing to win \(<\text{Contract 2}\) might have considered that in these areas it was unlikely to be able to use its own access network to supply \(<\text{Company 2}\). However, it could still be expected to supply over its own network in those areas where it had an access network but \(<\text{Company 2}\) did not. CRA suggests that it would have been reasonable for BT to assume that the EEO could expect to serve \(<\text{Company 2}\) with calls and broadband using its own MPF network with respect to at least 8% of \(<\text{Company 2}\)'s households.

• With regard to \(<\text{Company 1}\), BT accepts that it is unlikely that a CPSO supplying \(<\text{Company 1}\) would have been able to use its own access network for \(<21-30\)% of calls, given its extensive access network at the time of the bid. CRA states that it does not know what the relevant percentage is, but doubts that it is zero.

6.239 Regarding the correct cost to assign to the EEO when it avoids call origination, CRA contends that BT’s assumption that an EEO would incur zero incremental cost when it supplied calls via MPF or fibre is reasonable. CRA argues that where MPF or fibre is used to supply calls, it would not have been rolled out purely for calls. Therefore, because the cost of MPF or fibre is a cost that is shared in common with other services, the incremental cost of calls over MPF or fibre is zero.

Conclusions on the treatment of upstream costs

6.240 BT’s arguments do not allay the concerns that we had with its approach for a number of reasons.

6.241 First, we do not accept that this case is one in which it is necessary for BT to use competitors’ costs as a proxy for an EEO because it is not possible to identify the costs of the EEO directly. As CRA acknowledges, BT’s approach requires, among other assumptions, an assumption as to what the EEO looks like in terms of the extent of its own access network. For example, in taking a view on what would be a reasonable assumption for \(<\text{Contract 2}\), CRA takes the view that the EEO would have the same access network as Opal. By assuming the EEO has the same network as Opal, BT risks excluding all competitors except for Opal from competing for \(<\text{Contract 2}\) (given Opal has the most extensive MPF network). BT does not explain why it believes that Opal represents an appropriate proxy for an EEO in the

business included an average mix of business and residential customers. However, it considers that this figure would be too low for resellers focussed exclusively on business customers and too high for resellers whose business was predominantly residential.

410 CRA agrees that BT’s use of Ofcom’s statistic for the average of residential and business supply was “flawed”, given that \(<\text{a}\).

411 CRA calculates this figure as follows: \(<\text{b}\).

412 BT argues that the discussion about the percentage of call origination included in the CPSO cost floor is not relevant to \(<\text{Contract 1}\) as the contract should not be included in the margin squeeze analysis.

413 CRA believes that \(<\text{Contract 1}\) should not be included in the margin squeeze test and therefore considers the question about the relevant percentage “artificial”.

414 Section 2.6.3 of the CRA Report.
case of [X Contract 2]. However, for the reasons set out below, we believe that it is appropriate to assume that BT uses BT call origination on all minutes. This is also consistent with the fact that all BT Wholesale Calls minutes originate on a BT line. Under this assumption, the relevant transfer prices that the downstream operation would pay for its consumption of the upstream input are known, and so the circumstances outlined in TeliaSonera where it may be appropriate to look at a competitor’s costs do not apply. The EEO cost stack should therefore be based on BT’s CPL transfer prices.

6.242 Second, we consider that our concerns about legal certainty are borne out in CRA’s analysis. Although CRA suggests that it would have been reasonable for BT to assume that the EEO could expect to serve [X Company 2] with calls and broadband using its own MPF network with respect to at least 8% of [X Company 2]’s households, it still assumes 0% in its base case “in order to be very conservative”.415 Regarding [X Company 1], CRA states that it does not know what the relevant percentage is, but doubts that it is zero. In its historical analysis, CRA states that “although in our view the figure should in principle be greater than 0%, it is difficult to say exactly what it should be, since this would require (a) an assumption as to what the EEO looks like in terms of the extent (if any) of its fibre network and the exchanges that it has unbundled and (b) a careful mapping of this EEO’s networks against the networks of [X Company 1 and Company 2], respectively”.416

6.243 We note that the relevant percentage also depends on the extent to which the end retailer offers other services (such as line rental or broadband), as this determines the extent to which the EEO can bundle other wholesale services (such as wholesale line rental and wholesale broadband access). Another important factor is the extent to which end customers take the bundles of services of offer. These variables all add to the uncertainty in postulating what upstream call origination inputs an efficient competitor may consume.

6.244 Third, BT’s arguments in response to our economic concerns do not lead us to change our position:

- The fact that competitors were capable of bypassing BT call origination on a substantial scale does not mean they could necessarily do so for a given contract. The ability to bypass BT call origination requires that the reseller takes a bundle of calls and other wholesale services such as wholesale line rental and wholesale broadband access (which itself depends on the end retailer offering a wider proposition than just voice calls). In the case of the [X Contract 2], [X Company 2] required a wholesale end-to-end voice calls service only.417 Therefore, it would not have been possible to supply [X Company 2] with a bundle of wholesale services in order to avoid BT call origination. As a result, BT’s approach could have the effect of foreclosing competition.

- We do not accept BT’s characterisation of our argument as an entry assistance argument. Our argument is consistent with the principle of the margin squeeze test, to prevent foreclosure of efficient competition, which

415 CRA Report, paragraphs 30 and 31.

416 CRA Report, paragraph 129.

417 [X] – Annex 1 to response to 1st section 26 Notice.
includes both static and dynamic competition. Even if there are already strong players competing successfully against BT, that does not mean that we should not be concerned about the exclusion of potential competitors. In any case, we do not believe that our approach results in an efficiency benchmark that is lower than BT’s efficiency. Moreover, we consider that BT’s approach results in an efficiency benchmark which excludes (at least some) competitors that are as efficient as BT.

6.245 Fourth, we note that the issues around identifying the correct percentage of any own call origination serve to highlight a fundamental difficulty with BT’s approach: identifying what the correct percentage should be. In any case, BT (and CRA) accepts most of our criticisms of BT’s original implementation and selection of a figure for own call origination (particularly so in the case of Contract 1 and Contract 2).

6.246 Notwithstanding our position on the issue of principle, even if the relevant percentage in this case is not zero, we do not agree with CRA or BT that the correct cost to assign when the EEO avoids call origination is zero. We do not believe that the correct approach is to look at other operators. As we explain above, our approach is to look at BT’s costs (i.e. EEO). To the extent that BT Wholesale Calls is considered to originate calls on its own network rather than incur BT call origination charges, the correct approach is to use the long run incremental cost of BT providing call origination to itself. This is the approach we took in the Statement of Objections when considering the sensitivity of our conclusions to a scenario motivated by BT’s proposed approach.

6.247 In summary, BT’s arguments do not demonstrate that the position we took in the Statement of Objections was wrong. Therefore, we maintain that, in this particular case, it is appropriate to cost all of BT’s consumption of call origination and termination at the regulated access charge price. This is therefore the approach we have adopted in our margin modelling, as explained in more detail in Annex 4. However, we note that, to the extent that there is any merit in BT’s arguments (of which it is yet to satisfactorily demonstrate), then such arguments would lead to us finding higher margins for Wholesale Calls than those identified later in this Section. As such, the validity of such arguments would reinforce our conclusion that there are no grounds for action in this case.

**Other key assumptions in Ofcom’s modelling of BT’s margins on Wholesale Calls**

6.248 The purpose of this sub-section is to explain our treatment of the other key methodological areas where our approach is divergent from that used by BT in its governance modelling. Specifically we discuss our treatment of:

- modelling downstream network costs;
- margins earned on minor call types;
- termination rates for 0845 and 0870 numbers; and
- operator assistance.
We provide an overview of our treatment and we explain why we believe our approach is more appropriate than that adopted by BT in its governance modelling. Modelling downstream network costs

Both our modelling and BT’s original governance modelling use the same underlying model of BT’s downstream network costs. The network cost model was originally developed by BT specifically to provide an input into the Wholesale Calls total product governance model. We have used an updated and revised version of the model for this investigation. We explain in detail how we have adjusted and applied the model in Annex 4.

Approach adopted in the Statement of Objections

In the Statement of Objections we identified that there were two key areas in relation to the network costs where our proposed approach differed from that adopted by BT:

- the allocation mechanism for assigning BT Group incremental network costs to Wholesale Calls; and
- whether network costs are incremental at the total product level or at a greater degree of disaggregation (e.g. at the individual contract or call type level).

Allocation mechanism

As we explained in the Statement of Objections, BT’s network costs model estimates the total incremental cost of call conveyance (“network costs”) separately for a number of different call types. However, these total costs are calculated for the entire BT Group and therefore include incremental costs generated as a consequence of other parts of BT Group such as BT Retail, for example.

In order to include Wholesale Calls’ specific network costs within our modelling, both BT and we have had to adopt a method of allocating the appropriate proportion of these Group-wide costs to Wholesale Calls. There are a number of different ways that this could be done. The approach we adopted in the Statement of Objections allocated network costs on the basis of call minutes.

Specifically, BT’s network cost model contains data on the volume of call minutes split by call type on the same basis as the network cost estimates. We used this data to convert the total network cost estimates into a cost per minute split by call type. To generate total Wholesale Calls’ network costs, the per minute network costs were then multiplied by the same Wholesale Calls’ call minutes data provided by BT that are used to calculate the interconnection costs.

For its governance modelling BT, in contrast, chose to allocate the costs on the basis of revenue shares. Therefore, BT calculated Wholesale Calls revenues as a

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418 Annex 4 includes a detailed explanation of the inputs, calculations and assumptions employed in our modelling.

419 Albeit models for different financial years.

420 In response to the 8th section 26 Notice.
proportion of the total external revenues for all the business units that shared the
network costs.

6.256 We set out in the Statement of Objections three principal reasons as to why we
considered BT’s allocation to be incorrect and likely to understate Wholesale Calls
network costs:

1) Incremental network costs are better approximated by volumes (i.e. call
minutes) rather than by revenues. BT may scale the network up or down if
volumes increase or decrease, but other things being equal, we would not
expect a change in prices charged by BT to change network costs.

2) If BT’s arguments that the network costs should be allocated by revenues
were in principle to be accepted, then the revenues included from the BT
Retail line of business should be based on revenues from the internal sale
of wholesale minutes rather than BT Group external revenues which
include a retail margin. By including BT Retail revenues at retail prices BT
understated the proportion of BT Group wholesale revenues accounted for
by Wholesale Calls. If we were to include BT Retail internal revenues rather
than external revenues the difference between allocation by minutes and
revenues would be significantly reduced.

3) Allocating network costs by revenues is inconsistent with the approach
adopted in Gamma Telecom where we included the costs of regulated
network cost inputs charges on a pence per minute basis (i.e. on the basis
of minutes).

**Relevant output increment**

6.257 Consistent with the approach adopted in Gamma Telecom, in the Statement of
Objections we treated network costs as being incremental to individual contracts and,
indeed, at the more disaggregated level of call minutes. We therefore included
network costs in both the total product and individual contract analysis.

6.258 BT’s governance modelling, in contrast, included downstream network costs at the
total product level only. As such, an allowance for these costs was only included in
the total product modelling and not at the individual contract level. For the individual
bid modelling for contracts such as [Contract 1 and Contract 2], the cost stack did
not include any network costs.

6.259 However, we noted that to the extent that we and BT appeared to agree that network
costs are at least incremental to the Wholesale Calls product, whether or not network
costs are also incremental at the individual contract level (as we considered them to
be) was only relevant in the event that BT failed individual contract margin squeeze
tests but passed the total product test, which was not the case.

**BT’s representations**

6.260 In its Response, BT departs from the approach that it had adopted to downstream
network costs in its original governance modelling and questions whether Ofcom’s
approach in the Statement of Objections is consistent with our acceptance that the
incremental cost standard is the correct approach for testing for margin squeeze.421

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421 See paragraph D.69 of BT’s Response.
BT notes that its network costs are common to a range of services that BT supplies (of which Wholesale Calls is just one) and that [▷].  

Therefore, BT argues, under the LRIC framework outlined by Ofcom in the Statement of Objections, it should be sufficient for BT’s revenues for each contract to cover costs that are incremental at the contract level and that its revenues at the product level cover costs that are incremental at the product level. BT claims that as network costs are not incremental at either level, they should not be included within our analysis.  

BT provides a breakdown of network costs [▷].  

**Magnitude of network costs**  

Although CRA agrees with BT that network costs should be excluded entirely, it still presents an alternative case in which network costs are included at the product level. CRA adopts the same approach to modelling network costs that we took in the Statement of Objections, but uses revised network cost modelling provided by BT. The revisions BT made to its network cost modelling are as follows:  

- [▷].  
- BT has included network costs allocated to call types that were not included in the network cost models provided to Ofcom, and has also used updated cost assumptions.  
- BT has also created a new network cost model for 2009/10, which CRA has used to estimated network costs for the period April 2009 to December 2010.  

These adjustments are set out in more detail in Annex 4.  

**Conclusions on modelling downstream network costs**  

We explain in paragraphs 6.28 to 6.32 above that the relevant cost standard for considering margin squeeze is long run incremental cost. This is supported by the European Commission in Telefónica and the OFT in Guidance 417.

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422 See paragraph D.70 of BT’s Response.  
423 BT [▷] but claims that this only means that it was adopting a conservative approach relative to the true incremental costs of an EEO, and that this does not constitute evidence that such costs were in fact incremental to the product.  
424 See paragraphs D.73 to D.78 of BT’s Response.  
425 These call types are [▷].  
426 BT no longer believes that it is reasonable to use the LRIC floors that are four to five years out of date for ITC and ITT as these components consume LTC and LTC costs have declined over time. BT therefore assumed that the percentage movement in unit LTC costs between 2005/06 and 2008/09 or 2009/10 applies to the deregulated components. See paragraph 98 of CRA’s Report.
6.267 BT does not dispute that LRIC is the relevant cost standard and states in paragraph D.66 of its Response that “Ofcom confirms that the relevant standard for measuring costs in a margin squeeze case is long-run incremental cost (LRIC)”.  

6.268 Further, CRA confirms that the BT network cost model, used by BT in its governance modelling and by Ofcom in the Statement of Objections, calculates costs using a LRIC approach: “BT calculated network costs using a long-run incremental costs (LRIC) approach based on data from its Aspire system”.  

6.269 However, in arguing that Ofcom should not include any downstream network costs in its modelling, BT claims that the network cost model outputs used by Ofcom “bear no relation to the incremental costs of providing particular services”.  

6.270 The foundation of BT’s argument appears to be an argument that network costs should be treated as sunk costs and, as such, should not be included in any estimate of downstream LRIC.  

6.271 We recognise that there may be cases where assets used by the firm may be genuinely sunk and, as such, are not relevant to the measurement of forward looking costs. In such cases, there may be a valid argument for excluding them from the assessment of long-run incremental cost. However, in order for the costs associated with such an asset to be excluded from our assessment of LRIC we would need to be certain that the costs are genuinely not relevant. For example, while an asset may appear to be sunk (in the sense that the costs associated with it are not affected by decisions about what products to supply or withdraw from supply), it may still be relevant to the assessment of downstream LRIC if that asset has a resale or disposal value. Furthermore, if a firm has incurred sunk costs for strategic purposes it may also be appropriate to include it in our assessment.  

6.272 Reflecting these specific characteristics of the costs in question, the consideration of any sunk cost argument by BT would need to involve a case-by-case assessment of the evidence on the nature of each cost item that BT considers to be sunk. Given our conclusions in this case, we have not needed to undertake such an assessment. As such, we are unable to conclude definitively on the merits of BT’s arguments.  

6.273 However, as we explain below, notwithstanding this position, we consider it unlikely that a sunk cost argument could justify a conclusion that BT has no downstream network costs as measured on a LRIC basis.  

6.274 BT’s network costs consist of a combination of costs associated with both capital expenditure and operating costs. While it is conceivable that BT could demonstrate that some or all of the capital expenditure costs are sunk costs, it seems unlikely that it could make the same argument in relation to its operating costs. Consider a simplified example in which BT’s network costs consist of the costs associated with investing in 10 widgets and the costs of employing 10 people to maintain those widgets. Furthermore, assume that if it no longer provided Wholesale Calls, BT would not need to use two of those widgets. BT may be able to demonstrate that the costs associated with buying the two widgets that are no longer needed are sunk and irrelevant to the LRIC associated with Wholesale Calls. However, it also would be able to scale back its maintenance costs as it would only need eight people to maintain the remaining widgets rather than 10. This saving in maintenance costs would be relevant to the LRIC for Wholesale Calls.

427 BT Response, paragraph D.72.
6.275 In the long run, we consider that there will be a relationship between traffic and network costs. Specifically, traffic generates a requirement for capacity, and the provision of that capacity, in turn, generates network costs, even if only in relation to operating costs. We do, however, recognise that neither relationship may be linear. On the basis of this long run relationship, we believe that network costs are incremental (in the long run) at the product level as a minimum. We take this view because BT Wholesale Calls makes up such a significant proportion of minutes carried on BT’s core network. Were BT not to supply these minutes, in the long run it would be able to, by definition, scale its network costs to reflect its capacity requirement. Therefore, we do not believe the long run incremental costs of the core network are zero at the product level.

6.276 At the contract level, we recognise that the issue is more complex. Not only are there (non-linear) relationships between traffic and capacity, and capacity and network costs; traffic itself is a function of the minutes on individual contracts. We appreciate that a small contract with an atypical traffic profile may not have any effect on the requirement for capacity. In such a case, there would be no incremental network costs in the long run associated with this contract. However, it seems likely that for very large residential contracts, which make up a significant proportion of total product volumes, there is likely to be an impact on capacity required. For example, if BT did not need to service [Contract 2], it seems likely that it would be able to avoid some network costs.

6.277 In conclusion, at the product level, which we consider to be of primary significance in this case (as explained in paragraphs 6.34 to 6.54), we do not believe that BT’s long run incremental network costs are zero. At the contract level, the appropriate treatment of network costs is less clear. As explained in paragraph 6.199, given that we find that BT did not breach competition law, we do not need to reach a final view on whether network costs are incremental to individual contracts in the long run in this case. Therefore, for the purposes of this investigation, we continue to treat network costs as incremental to both individual contracts and total product. However, reflecting the points made above in relation to individual contracts, we have considered, as a sensitivity test, the margins on individual contracts when network costs are excluded. The results of this sensitivity analysis are presented in Annex 6.

6.278 In determining what the correct incremental cost should be, we accept that treating network costs as incremental to individual call minutes does not perfectly reflect reality. The relationship is almost certainly more complicated than BT’s LRIC model implies. However, in the absence of better information, using the outputs of BT’s LRIC model seems a reasonable approach. BT does not adequately explain why these figures, which are appropriate for regulatory purposes, are not appropriate in this context.

6.279 The revisions BT has made to the network cost modelling used by CRA appear to be reasonable. Therefore, we have adopted this modelling in our analysis. We note that the overall effect of the adjustments is to increase network costs relative to the levels we assumed in the Statement of Objections.

428 As noted above, CRA also adopted this approach.

429 Paragraph D.72 of its Response does not explain why these figures are inappropriate. BT just asserts that it “does not accept that the mere fact that, for regulatory purposes, network costs are allocated on a pence per minute basis, is a reason to allocate costs in this way in the context of a margin squeeze analysis”.
Margins earned on minor call types

6.280 There are several hundred minor call types. Modelling the margins earned on each of these is therefore a highly complex task. This complexity is not only a function of the sheer number of individual call types, but it also stems from the variations in the way that termination charges are calculated for different call types. Not all termination rates are calculated on a simple pence per minute basis. Some are set on a pence per call basis, while others are based on a mix of per call and per minute charges. Moreover, pence per minute charges are not always due on the first minute of a call – some are paid only after 60 seconds.

Approach adopted in Statement of Objections

6.281 In the Statement of Objections, we sought to base our treatment of minor call type margins on evidence of the margins that BT has historically earned on these call types. However, reflecting the complexity of the modelling exercise we did not estimate the costs of call origination and termination for each call type in each month, as we had done for major call types. Instead we split minor calls into three broad categories:

- Directory enquiries (DQ);
- International direct dial calls (IDD); and
- ‘other’ minor calls.

6.282 We then estimated a single weighted average pence per minute margin for each of these broad categories based on a time period and contract sample. The margin estimates were based on BT’s own modelling of minor calls which was provided in response to formal information requests.

6.283 Our time period and contract sample differed for each of the three broad call type categories. These differences are summarised in Table 6.1 below.

Table 6.1: Our approach in the Statement of Objections to estimating BT’s margins on minor call types

6.284 We had originally adopted a consistent approach for all three categories. Our approach was to estimate the weighted average margins across specific customer contracts for an individual month (September 2008). These large

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430 As opposed to the assumption-led approach BT adopted in its governance modelling (as discussed below).

431 These estimates were then further split by time of day (i.e. day, evening and weekend) resulting in nine minor call type/time of day combinations.

432 BT’s responses to the 4th section 26 Notice and the 9th section 26 Notice. Although as we explained in Annex 4 of the Statement of Objections, in line with our interpretation of the EEO test we made a number of adjustments to BT’s analysis to ensure that 100% of interconnection costs are included for all minor call types. We also corrected errors in BT’s analysis.
contracts accounted for more than two thirds of total Wholesale Calls minor calls revenues and minutes in April 2009.

6.285 However, when we shared this approach with BT in the summer of 2010, BT argued that we had underestimated the margin it earned on the total Wholesale Calls product for two reasons.\footnote{Letter from BT to Ofcom dated 26 July 2010.}

- the [\textless{} specific customer\textgreater{}] contracts have lower call charges for minor calls than the rest of the Wholesale Calls customer base. Hence, it believed that the average margins earned on the contracts for Wholesale Calls customers other than [\textless{} the specific customers examined\textgreater{}] were higher than the weighted average margins we had estimated; and

- in the specific context of ‘other’ minor calls, while “using any individual month ought to give a reasonably accurate position when extrapolated across the 14 month period, BT has...issues with this approach and specifically the month of September”.\footnote{Letter from BT to Ofcom dated 26 July 2010.} BT explained that most Premium Rate Services (“PRS”) traffic is seasonal,\footnote{BT’s comments on the seasonal variation of minor calls mainly related to PRS calls. BT explained that PRS call volumes are driven by TV phone-in competitions and consequently vary significantly from month to month. All PRS call types are in the ‘other’ minor calls category so we expect the margins on other minor call types to vary more from month to month than the IDD and DQ minor call categories.} and as BT earns a high margin on PRS calls, “using data from September only will significantly understate margins made from PRS numbers”.

6.286 In response to these arguments, we expanded the analysis for IDD and ‘other’ minor calls to specifically estimate the margins for ‘the rest of the contracts’. This was based on additional analysis provided by BT to accompany its letter dated 26 July 2010.\footnote{As we explain in Annex 4, we have made a number of adjustments to this analysis to reflect our view of the most appropriate margin estimates.}

6.287 In order to account for the effect of seasonal changes in PRS volumes we requested further data from BT on the pence per minute margins earned in November 2008.\footnote{Question 15 of the 9th section 26 Notice asked BT to provide data on the volumes, prices and interconnection costs for all minor call types for [\textless{} the specific customers examined\textgreater{}] and the rest of the Wholesale Calls business for November 2008. However BT’s response dated 10 September 2010 only provided the requested data for the ‘other’ minor calls category. Given that we do not expect the IDD and DQ margins to vary significantly from month to month we did not pursue this further with BT.} This analysis showed that the margins BT earned on ‘other’ minor calls were actually lower in November 2008 than those earned in September 2008. To reflect this variation in margins in our analysis, we calculated the average of the weighted average pence per minute margins earned on ‘other’ minor calls in September 2008 and November 2008.\footnote{The November 2008 margins have a higher weighting in this weighted average as the other minor calls volumes, revenues and costs were higher in November 2008 than in September 2008.}
6.288 We undertook sensitivity analysis to assess the extent to which our overall conclusions were sensitive to our chosen approach. We found that, holding other input parameters constant, BT would only break even on the Wholesale Calls total product over the period July 2008 to April 2009 if the margins earned on minor call types were around four times those we used in our analysis.

Representations by BT and C&W on margins earned on minor call types

BT’s representations

6.289 In its review of Ofcom’s retrospective modelling, CRA uses detailed modelling of margins on all minor call types, provided by BT. CRA argues that this is more accurate and significantly more data intensive than Ofcom’s approach of estimating margins for three broad categories based on one or two months of data.

6.290 BT’s detailed modelling has been carried out by month (for the period June 2007 to December 2010), for each of the several hundred types of minor call. It models the margins on minor calls for the Wholesale Calls product as a whole, as well as for each of the contracts analysed by Ofcom in its Statement of Objections.

6.291 BT uses actual data on minutes and revenues earned, by contract and for the product as a whole. Costs are based on CPL data and prices paid to BT Global Services for IDD. Reflecting BT’s position that operator assistance should be excluded (see paragraphs 6.324 to 6.329 below), BT uses call origination costs without operator assistance.

6.292 In its report, CRA explains that BT has had to make one assumption with respect to call termination costs for ‘other’ minor calls. Where there is a BT termination charge for a particular call type but no charge for other operators, 100% of such calls are assumed to terminate on BT. Conversely, where there is a termination charge for other operators but not BT, 100% of such calls are assumed to terminate on other operators. Where termination charges exist for BT and other operators, call termination is assumed to split. CRA takes the view that this “seems to be a reasonable assumption in the absence of alternative information”.

6.293 CRA also agrees with Ofcom that call types that are not routed over CPS should be excluded from the analysis (for example, calls to Timeline and Operator Services). These calls are provided by (and charged for) by the access line provider. Whilst BT earns revenues from these call types in cases where it is providing the access line, these revenues are associated with the WLR product and not CPS provision.

439 CRA Report, paragraphs 115-126.

440 In its Response, BT explained that it had provided Ofcom with incorrect data on POLOs for DQ calls, in its response to question 4 of the 4th section 26 Notice submitted on 6 November 2008. This led to an overstatement of BT’s margins from minor call types. This has been corrected in BT’s detailed minor calls modelling provided to CRA.

441 In fact, BT has made a number of assumptions with respect to call termination costs, as discussed in Annex 4.

442 See paragraph 119 of CRA’s Report.

443 This is discussed in paragraph A4.17 of the Statement of Objections.
6.294 On the issue of seasonality in volumes of ‘other’ minor calls (see paragraphs 6.161 and 6.162 above), C&W notes that PRS calls are relatively stable on a monthly basis and therefore not really seasonal in nature. Whilst there may be monthly increases in volumes relating to participation TV shows, the importance of participation TV to broadcasters as a source of revenue ensures that these shows are scheduled throughout the year. C&W also argues that participation TV events are a mature component of PRS demand, which BT should have been able to reliably gauge based on its own historical data and/or data provided by [>< Company 2]. C&W provided data on historical trends in PRS minutes during the period when THUS was the network provider to [>< Company 2], to show that [><].

Conclusions on margins earned on minor call types

6.295 We consider that our approach in the Statement of Objections was proportionate, given the detailed data required and time it would have taken to carry out a more detailed modelling approach. Moreover, our approach represented a more evidence based approach than that adopted by BT in its governance modelling.

6.296 Notwithstanding this point, we recognise that a more detailed approach to modelling BT’s historical margins on minor calls will in principle be more accurate. Given that BT has now provided this modelling, we believe it is appropriate for us to adopt it in our analysis.

6.297 Before doing so, we carried out a high-level review of BT’s modelling, which identified a number of issues (see Annex 4). On the basis of information provided in response to the 10th and 11th section 26 Notices, we understand that only two of these issues have a material impact on our analysis:

- BT’s modelling uses call origination excluding operator assistance. For the reasons given in paragraphs 6.324 to 6.329, we consider that it is appropriate to use call origination including operator assistance.

- The data is affected by a number of billing errors. For example, BT explained that a number of discrepancies result from a billing error that affected all [>]. BT confirmed that these were not reflected in CRA’s extended cost modelling submitted as part of its response. A similar billing error affected [>] (also not reflected in CRA’s modelling).

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444 See paragraphs 5.4 to 5.7 of C&W’s response to the Statement of Objections.

445 The lengthy process involved in a more limited approach, and the numerous errors we identified in BT’s original minor calls analysis, were also relevant factors we considered in reaching this view. We note that while we considered our approach to be proportionate for analysing margins over the period March 2008 to April 2009, it is unlikely that we would have considered the same approach to be suitable for analysis over a longer time period, such as that considered by CRA.

446 [>].

447 BT’s responses to question 19 of 10th section 26 Notice, and question 6 of 11th section 26 Notice.

448 BT’s responses to question 8 of 11th section 26 Notice.
6.298 In light of the above, we have adopted BT’s detailed minor calls modelling in our historical analysis, but with the following adjustments:

- We have modified BT’s modelling to use call origination including operator assistance.
- We have taken account of the \[\text{\textgreater}\times\text{\textless}\] billing errors using a credit note, as per our approach in the Statement of Objections (see Annex 4).

6.299 The effect of using BT’s detailed minor calls modelling, compared to the margins assumed by Ofcom in the Statement of Objections, is as follows:

- Over the period July 2008 to April 2009 (i.e. the period over which Ofcom concluded that BT had earned a negative margin), BT’s minor calls modelling has the effect of reducing margins.
- However, over the longer time period from July 2008 to December 2010, adopting BT’s minor calls modelling has the effect of improving margins compared to the margins that would result from applying the methodology we adopted in Statement of Objections to the longer time period.

6.300 The results are summarised in Table 6.2 below.

**Table 6.2: Absolute margins on minor call types for the Wholesale Calls total product, £ millions**

| [\[\times\]| Source: Statement of Objections and Ofcom analysis based on Files 9 and 11-13, provided as part of BT's Response.

6.301 By adopting BT’s detailed minor calls modelling, we are no longer relying on data from one or two months as a proxy for other months, and so the issue about seasonality raised by C&W in its response falls away.

**Termination rates for local and national non-geographic numbers (0845 and 0870)**

**Approach adopted in the Statement of Objections**

6.302 \[\text{\textgreater}\times\text{\textless}\]. Therefore, estimating the correct cost of termination for these numbers is important for the accuracy of the overall margin estimate.

6.303 In our margin modelling in the Statement of Objections, we assumed that the EEO would incur the full 0845 and 0870 call termination charges applied by 0845 and 0870 terminating operators.\(^{449}\) This approach was consistent with that adopted for the other (major) call types. The relevant charges were obtained from BT through a formal information request.\(^{450}\)

6.304 In contrast, in its governance modelling BT adopted an approach that assumed that the EEO was active in the upstream hosting and termination of 0845 and 0870 numbers. Therefore, the call minutes for these types of number were split into two distinct categories:

\(^{449}\) Note as explained in Annex 4 the termination rates for 0845 and 0870 calls differ between BT-terminated and other CP-terminated calls.

\(^{450}\) Letter from BT dated 26th July 2010, BT's response to Q1 of the 9th section 26 Notice.
• traffic that was terminated on numbers hosted by the EEO; and
• traffic that was terminated on numbers hosted by other operators.

6.305 The proportion of traffic (for both 0845 and 0870) terminated on numbers hosted by
the EEO was assumed to be [\%]; which BT claimed was equal to [\%] a specific
customer’s] market share in non-geographic call termination.

6.306 BT’s treatment of call termination charges differed not just for the two categories, but
also between 0845 numbers and for 0870 numbers. This is presented in Figure 6.3.
In summary, BT made the following assumptions:

• traffic terminated on numbers hosted by the EEO – BT assumed that the EEO
incurred no termination charge; and
• traffic terminated on numbers hosted by other operators – BT assumed that
the EEO incurred the full termination charges as per the CPL.

Figure 6.3: BT’s approach to modelling local and national non-geographic call
termination charges

6.307 The difference in treatment between 0870 and 0845 arose as a consequence of the
assumed outpayment made to 0870 service providers (i.e. those companies for
whom the EEO hosted the number). These outpayments involved the terminating
operator paying the service provider a share of the termination payment. BT
assumed that this share was [\%] of the 0870 termination rate, based on BT’s
analysis of actual outpayments.

6.308 Using this approach, BT therefore assumed that:

• for calls to 0845 numbers the EEO incurred [\%] of the call termination rate; and
• for calls to 0870 numbers the EEO incurred [\%] of the call termination
rate.

6.309 The result of BT’s approach was therefore that the average effective termination rate
for calls to 0870 and 0845 numbers was lower than we assumed in the Statement of
Objections (i.e. 100% of the call termination rate).

6.310 We explained in the Statement of Objections that we disagreed with BT’s treatment
of these calls for two principal reasons:

• First, BT’s assumptions in relation to the proportion of traffic terminated on
numbers hosted by the EEO were analogous to its assumptions in relation to
geographic call termination and call origination (as discussed above).

451 For the avoidance of doubt, BT assumed that there were no such outpayments to 0845 service
providers.

452 This figure is calculated as follows: [\%].
Consistent with our treatment of the EEO’s other upstream interconnection costs (i.e. that the EEO incurred the full external charge rate on 100% of the traffic), we did not consider it to be appropriate to assume that the EEO (i.e. BT Wholesale Calls) was active in the upstream hosting and termination market for non-geographic calls.\footnote{Furthermore, not only does BT’s approach incorrectly assume that the EEO has upstream presence, but it uses data based on specific customer(s) share of non-geographic call termination in order to estimate the extent of this upstream presence. BT’s approach is therefore inconsistent with the case law in that it seeks to model competitors’ costs rather than BT’s own costs. As set out above, the case law clearly indicates that, in assessing the costs of an EEO, it is the dominant firm’s costs and not those which a competitor might be able to achieve which are relevant. Therefore, even if it were possible to assume that downstream competitors had an upstream presence, existing case law clearly indicates that a competition authority should only consider the upstream costs of the dominant operator, i.e. BT.} In our view BT’s approach was inconsistent with the approach adopted by national competition authorities, the Commission, the General Court and the ECJ pursuant to which no upstream presence could be assumed. Therefore, in this case, we considered the relevant call termination charge for calls to 0845 and 0870 numbers for the purposes of calculating the EEO cost stack was the full call termination charge.

- Second, notwithstanding the fact that BT’s arguments were inconsistent with the established case law, we did not consider that there was a robust economic justification for them. Specifically, we did not accept that there was a robust economic justification as to why the EEO’s pricing for wholesale end-to-end calls should be related to, or contingent on, the EEO’s ability to earn super-normal profits on other (upstream) services. Given that the demand for calls to 0870/0845 numbers by end users is largely independent of which firm provides any particular wholesale end-to-end calls service, the volume and pattern of calls to 0870/0845 numbers terminated by a CP is unlikely to depend on how successful individual CPSOs are in winning contracts for wholesale end-to-end calls. For example, the profitability of C&W’s 0870/0845 business should not significantly vary if a reseller contract (e.g. [Contract 2]) was won by BT Wholesale or by C&W itself. However, under BT’s approach to 0870/0845 termination, for C&W to win that reseller contract in competition with BT, it would need to forego a proportion of its profits on calls to 0870/0845 numbers it hosted in order to compete with BT’s pricing (all other things being equal). Therefore, C&W would incur an opportunity cost associated with those lost profits from winning the contract. We explained that it was unclear to us why requiring CPs to incur such an opportunity cost to compete with BT for contracts was economically justified. We therefore disagreed with BT’s approach that effectively links these two separate (competitive) economic markets. Even if a CPSO had market power in NTS hosting (which we did not consider to be the case as it is a competitive market), we did not consider there would be a credible economic argument to force that CPSO to exercise its market power to generate super-normal profits to support its position in wholesale end-to-end calls.

6.311 In addition to adopting this differing interpretation of the EEO, our treatment of 0845 termination also differed from that adopted by BT in that:
• it included the per call termination charges that BT (erroneously) omitted from its governance modelling454; and

• we modelled the termination rates in greater detail by taking into account the difference between termination rates applied by BT and other CPs.455

Representations by BT & C&W on 0845 and 0870 termination rates

BT’s representations

6.312 Neither BT nor CRA comment on our approach of assuming that the EEO would incur the full 0845 and 0870 call termination charges applied by 0845 and 0870 terminating operators.

6.313 However, CRA contends that it is appropriate to use lower call termination costs for 0845 and 0870 calls which reflect “NCCN908 discounts”.456 CRA explains that, beginning in November 2008, resellers who discounted 0845 and 0870 calls were eligible to receive “NCCN908 discounts”, that is, discounted call termination charges on 0845 and 0870 calls. The effect of the NCCN908 discount was to keep call termination rates on 0845 and 0870 calls at their October 2008 level from November 2008 onwards.

6.314 CRA argues that if BT Wholesale were a standalone firm, it would be eligible to receive such discounts, in the same way as CPSOs are. Therefore, it uses the discounted rates in its analysis.

C&W representations 457

6.315 C&W agrees with Ofcom’s reasoning and conclusion as explained in the Statement of Objections that the EEO would incur the full 0845 and 0870 call termination charges applied by 0845 and 0870 terminating operators.458

454 There are two termination charges which apply to an 0845 call: there is a pence per call charge and pence per minute charge which is applied from the first minute. BT erroneously excluded the pence per call charge from its governance models which led to an underestimate of the total termination charges incurred on 0845 calls. We included both the pence per call and pence per minute 0845 termination charges as the EEO would necessarily incur those to connect an 0845 call.

455 BT’s governance modelling assumed that all CPs which terminated 0845 or 0870 calls received the appropriate Carrier Price List (“CPL”) listed termination rate. However NCCN908 (i.e. a price change notice by BT) resulted in significant differences in the termination rates for 0845 and 0870 calls between calls terminated by BT and calls terminated by other CPs from November 2008 (i.e. the BT rate became higher than the other CP rate). To reflect this divergence in termination rates, we used the 0845 and 0870 termination charges applied by BT and other CPs, along with data on BT’s market share in NTS call termination, to calculate weighted average termination rates for 0845 and 0870 calls across BT and other CP terminated calls. We noted, however, that the absence of this split in termination rates in BT’s governance modelling related to the fact that NCCN908 was not reasonably foreseeable to BT Wholesale Calls at the time of bidding for [► Contract 1 and Contract 2].

456 CRA Report, paragraphs 131-134.

457 C&W Response, paragraph 5.8

458 C&W does not make representations on NCCN908 discounts, as this issue has only arisen as a result of BT’s Response, and therefore was not discussed in the Statement of Objections.
Conclusions on 0845 and 0870 termination rates

6.316 We adopt the same approach to local and national non-geographic termination charges as in Statement of Objections, except that we now use termination rates that reflect NCCN908 discounts.

6.317 We asked BT to provide further information on NCCN908 discounts. We now understand that NCCN908 discounts are available to all CPSOs (although CPSOs must approach BT to request the discount, providing a written statement to confirm they are eligible). In addition, BT provided evidence to show that it would qualify for these discounts. On this basis, we consider that it is appropriate to take into account NCCN908 discounts in the EEO test.

Operator assistance

6.318 As discussed in paragraphs 6.197 to 6.239 above, we have included call origination charges for all minutes in the EEO cost stack (be that the standard call origination charge or as part of the CPS SAD charge). There are two variants of call origination that CPs can purchase from BT: with and without operator assistance. The operator assistance charge is levied to recover the costs of BT’s operator service.

Approach adopted in Statement of Objections

6.319 We explained in the Statement of Objections that as the EEO is based on the costs BT incurs, and BT consumed call origination with operator assistance (i.e. it used its own operator service), we used this variant in our analysis.

6.320 We noted that the difference between the two options was relatively small, and therefore, our findings in the Statement of Objections were not sensitive to this assumption.

BT’s representations

6.321 In its analysis, CRA uses call origination charges excluding operator assistance. Its reason for doing so is that while CPSOs use call origination including operator assistance, each CPSO is in practice charged for call origination excluding operator assistance. CRA states that the overwhelming majority of CPSOs received operator assistance for free.

6.322 CRA argues that the margin squeeze test should impute as costs to the downstream EEO the prices that the vertically integrated firm charges to downstream competitors so that they can replicate the service that the vertically integrated firm is offering downstream. On this basis, the correct call origination charge to use is the charge that BT has applied to CPSOs in practice, which is the charge excluding operator assistance.

6.323 CRA also notes that the BT governance models for [Contract 1 and Contract 2] used CPL charges excluding operator assistance, which is consistent with this view.

459 10th section 26 Notice.

460 CRA Report paragraphs 110-114.
Conclusion on operator assistance

6.324 We asked BT for further information in relation to operator assistance. On the basis of BT’s responses to the 10th and 11th section 26 Notices, we understand that:

- Over the period July 2008 to December 2010, all CPSOs\(^\text{461}\) paid for call origination excluding operator assistance.

- The CPSOs would have told BT that they would provide their own operator assistance. As a result, they were charged the lower rate for call origination by BT (i.e. call origination excluding operator assistance).

- However, customers of these CPSOs were free to dial any operator assistance number that they choose. BT explained that it has no way to stop an end user from dialling its operator assistance service from a line with CPS applied by a CPSO on the lower rate. BT explained that, in practice, CPSOs’ customers can and do use BT’s operator assistance even in cases where the CPSO may also provide operator assistance, and that it has no way of monitoring this or preventing it from happening.

6.325 BT’s response makes it clear that for a CPSO to pay call origination charges excluding operator assistance, they must provide their own operator assistance. Therefore, even if they do not incur BT call origination charges including operator assistance, they still incur a cost associated with providing their own operator assistance.

6.326 In light of this, we do not consider CRA’s approach to be appropriate, as it does not include any incremental cost for operator assistance, which according to BT is in fact provided.

6.327 As we explained in the Statement of Objections, the EEO is based on the costs BT incurs, and as BT consumes call origination with operator assistance, the costs of this service should be reflected in the cost stack. We consider that the most appropriate way to reflect this cost in the cost stack is to use BT’s call origination charges including operator assistance. This approach is in line with the EEO test – using BT’s own costs.

6.328 We note that an alternative approach based on the CPSOs’ costs of providing operator assistance (even though this is not consistent with our EEO approach) could result in higher costs, as the operator assistance element of BT’s call origination charge is likely to be lower than the cost of self-providing operator assistance, given BT’s economies of scale\(^\text{462}\).

6.329 We also note the following:

- To the extent that their customers use BT’s operator assistance at no cost to the CPSO, this is not an argument for treating the incremental cost as zero.\(^\text{[×]}\), it cannot be assumed that this situation would continue if BT Wholesale Calls were a separate downstream operation.

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\(^{461}\) With two minor exceptions.

\(^{462}\) BT recovers its costs of providing operator assistance over all call origination charges.
• In BT’s Wholesale Calls contract [⋯]. It is noteworthy that BT considers the relevant input cost for call origination to be call origination including operator assistance, rather than call origination excluding operator assistance.

**BT Wholesale Calls historical margin analysis**

6.330 As discussed above, BT has made a number of comments in its Response regarding the historical analysis of the profitability of its Wholesale Calls product that we included in the Statement of Objections. In light of these comments, we have revised some aspects of our approach. We have also updated our modelling to reflect the new data submitted by BT. In the following sub-sections, we present the results of our revised analysis of the historical margins earned by BT Wholesale Calls over the period March 2008 to April 2009, and the conclusions that we draw from this. The margins are based on the approach outlined above and explained in detail in Annex 4.

6.331 The sub-sections are structured as follows:

(i) we examine the results for the Wholesale Calls business as a whole;

(ii) we consider the results for [⋯ Contract 1];

(iii) we examine the margins earned on [⋯ Contract 2];

(iv) we present the results of our sensitivity analysis on the relevant time period (see paragraph 6.163 above); and

(v) finally, we present our conclusions on whether there is historical evidence of BT having failed to maintain a sufficient margin between its upstream and downstream prices such that it failed to cover its downstream costs over the period of assessment.

6.332 The results for [⋯ Contract 1 and Contract 2] receive a specific focus (in comparison to any of the other contracts) on the basis that:

• [⋯];

• these contracts have the lowest margins of those specifically considered, in large part reflecting their size and the alternative (i.e. non-Wholesale Calls) options available to these two customers; and

• as we explain further in Section 7 these contracts, and [⋯ Contract 1] in particular, are relevant for considering the potential for anti-competitive effects arising from BT’s margins at the total product level.

6.333 On 23 March 2012, we received additional information and analysis from BT and CRA in relation to credit notes that had not previously been shared with us. Our initial analysis of this new information suggested that it would lower our estimates of BT’s margins on a number of Wholesale Calls contracts, most significantly the [⋯ Contract 1], and (largely as a result) on the total Wholesale Calls product. The data provided was not sufficient, however, to enable us to definitively conclude on its impact on BT’s margins as it did not include complete information on the month(s) in which individual credit notes were triggered, which is necessary for us to properly include this data in our month-by-month analysis (see paragraph A4.38). Given the lack of evidence of anti-competitive effects, we have not considered it necessary to
gather further information to carry out a full analysis of this information. However, we have undertaken a provisional assessment of the new data and are confident that it will not impact on our overall proposed conclusions. While the actual margins may be lower than those presented in this document, we understand they will not be sufficiently lower to undermine our conclusions in Section 7, and therefore the decision that there are no grounds for action.

BT Wholesale Calls total product margin

6.334 In this sub-section we consider whether BT’s Wholesale Calls business as a whole was incrementally profitable over the period March 2008 to April 2009. We examine the profitability of the total product both on a month-by-month basis and over the period as a whole.

6.335 Our analysis compares the total revenues accruing to Wholesale Calls with the total (incremental) costs of providing the Wholesale Calls product. The latter includes both the incremental costs associated with each individual contract and the costs that are common to the Wholesale Calls product as a whole.

6.336 Table 6.4 below summarises the profitability of BT’s Wholesale Calls product between March 2008 and April 2009. Over this period BT suffered significant losses in the supply of this product. While BT earned a positive margin of [≥ 0-10%] over its upstream interconnection costs, its revenues fell significantly short of covering the costs of an equally efficient operator. BT made a negative margin of [≥ 0-10%] relative to EEO costs, and a negative margin of [≥ 0-10%] compared to adjusted EEO costs. BT also failed to cover its interconnection and core network costs, recording a negative margin of [≥ 0-10%].

Table 6.4: Wholesale Calls total product: percentage margins, March 2008 to April 2009

<table>
<thead>
<tr>
<th>Margins (%)</th>
<th>Monthly minimum</th>
<th>Monthly maximum</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Margin over interconnection costs</td>
<td>+[≥ 0-10%]</td>
<td>+[≥ 10-20%]</td>
<td>+[≥ 0-10%]</td>
</tr>
<tr>
<td>Margin over interconnection costs and core network costs</td>
<td>-[≥ 0-10%]</td>
<td>+[≥ 10-20%]</td>
<td>-[≥ 0-10%]</td>
</tr>
<tr>
<td>Margin over EEO costs</td>
<td>-[≥ 0-10%]</td>
<td>+[≥ 0-10%]</td>
<td>-[≥ 0-10%]</td>
</tr>
<tr>
<td>Margin over adjusted EEO costs</td>
<td>-[≥ 0-10%]</td>
<td>+[≥ 0-10%]</td>
<td>-[≥ 0-10%]</td>
</tr>
</tbody>
</table>

Source: Ofcom analysis of BT data

6.337 This analysis shows that BT’s revenues fell substantially short of the costs of an equally efficient operator on both the EEO and adjusted EEO basis during the time period March 2008 to April 2009. BT therefore earned a negative margin on the Wholesale Calls product during this period.

6.338 Figure 6.5 below shows how BT’s cost stack changed over the period March 2008 to April 2009. It shows that BT earned a small positive margin over adjusted EEO costs in the period March 2008 to May 2008 and no margin in June 2008. However, BT then earned negative margins in each of the following months from July 2008 to April 2009.

Figure 6.5: Wholesale Calls total product: (adjusted EEO) cost stack as a percentage of revenues, March 2008 to April 2009

[≥]

Source: Ofcom analysis of BT data
6.339 Table 6.6 below presents the average, monthly minimum and monthly maximum margins earned over this ten month period from July 2008 to April 2009. This shows that in each month over this ten month period, BT’s margin over adjusted EEO costs was between \([\times 0-10\%]\) and \([-\times 0-10\%]\).

**Table 6.6: Wholesale Calls total product: monthly minimum, maximum and average margins over the period July 2008 to April 2009**

<table>
<thead>
<tr>
<th>Margins (%)</th>
<th>Monthly minimum</th>
<th>Monthly maximum</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Margin over interconnection costs</td>
<td>([\times 0-10%])</td>
<td>([\times 0-10%])</td>
<td>([\times 0-10%])</td>
</tr>
<tr>
<td>Margin over interconnection costs and core network costs</td>
<td>([-\times 0-10%])</td>
<td>([\times 0-10%])</td>
<td>([-\times 0-10%])</td>
</tr>
<tr>
<td>Margin over EEO costs</td>
<td>([-\times 0-10%])</td>
<td>([-\times 0-10%])</td>
<td>([-\times 0-10%])</td>
</tr>
<tr>
<td>Margin over adjusted EEO costs</td>
<td>([-\times 0-10%])</td>
<td>([-\times 0-10%])</td>
<td>([-\times 0-10%])</td>
</tr>
</tbody>
</table>

Source: Ofcom analysis of BT data

6.340 This analysis confirms the provisional conclusion that we reached in the Statement of Objections that BT earned a negative margin on the Wholesale Calls product over the period July 2008 to April 2009. The absolute margins over this period are summarised in Table 6.7 below. This analysis shows that the size of the negative margin was greater than that which we provisionally identified in the Statement of Objections.

**Table 6.7: Wholesale Calls total product: absolute margins over the period July 2008 to April 2009**

Source: Ofcom analysis of data

6.341 In the next three sub-sections, we look at the profitability of individual contracts, before returning to consider the reasons why BT’s revenues fail to cover the costs of an equally efficient operator for the Wholesale Calls business as a whole.\(^{463}\)

**BT Wholesale Calls margins on [\times Contract 1]**

6.342 In this sub-section we consider whether BT’s contract with [\times Company 1] was incrementally profitable over the period July 2008 to April 2009. We start our analysis in July 2008 as this [\times] is the first month in which the specific profitability of this contract can be meaningfully considered. We examine the profitability of the contract both on a month-by-month basis and over the period as a whole.

6.343 Table 6.8 summarises the profitability of [\times Contract 1] between July 2008 and April 2009. We present data on the average, monthly minimum and monthly maximum margins earned over the period July 2008 to April 2009. The results show that over the period July 2008 to April 2009, BT made substantial losses on the contract, earning a margin of \([-\times 10-20\%]\) and \([-\times 10-20\%]\) over adjusted EEO costs and EEO costs respectively. BT’s losses were so significant that it failed even to cover the interconnection costs associated with providing the Wholesale Calls product, recording a margin of \([-\times 10-20\%]\).

\(^{463}\) As explained in paragraph 6.42, analysis of individual contracts may also be relevant in their own right (for example, if particular contracts are competition enablers).
Table 6.8: [Contract 1]: percentage margins, July 2008 to April 2009

<table>
<thead>
<tr>
<th>Margins (%)</th>
<th>Monthly minimum</th>
<th>Monthly maximum</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Margin over interconnection costs</td>
<td>[-] 0 - 10%</td>
<td>[-] 0 - 10%</td>
<td>[-] 0 - 10%</td>
</tr>
<tr>
<td>Margin over interconnection costs and core network costs</td>
<td>[-] 0 - 20%</td>
<td>[-] 0 - 10%</td>
<td>[-] 10 - 20%</td>
</tr>
<tr>
<td>Margin over EEO costs</td>
<td>[-] 0 - 20%</td>
<td>[-] 0 - 10%</td>
<td>[-] 10 - 20%</td>
</tr>
<tr>
<td>Margin over adjusted EEO costs</td>
<td>[-] 0 - 20%</td>
<td>[-] 0 - 10%</td>
<td>[-] 10 - 20%</td>
</tr>
</tbody>
</table>

Source: Ofcom analysis of BT data

6.344 Our analysis shows that BT failed both the EEO and adjusted EEO tests in each and every month between July 2008 and April 2009. Figure 6.9 shows the cost stack for BT’s contract with [Company 1] over the period July 2008 to April 2009. In the period from August 2008, margins have consistently been within the range of [-] 0 - 10% and [-] 10 - 20%. BT also failed to recover upstream interconnection costs in each month of our analysis.

Figure 6.9: [Contract 1]: (adjusted EEO) cost stack as a percentage of revenues, July 2008 to April 2009

6.345 Costs (i.e. [Contract 1]) have declined in relative terms over time, as revenues have increased substantially over the period. We would expect CPS transaction charges to decline over time as the largest CPS transaction charges are bulk migration charges which are mostly incurred upfront to migrate [Company 1’s]’s existing customer base onto Wholesale Calls. However, over the period July 2008 to April 2009 CPS transaction charges have shown a slight increase. This largely reflects the way that CPS transaction charges (principally bulk migration charges) are levied.464

6.346 In conclusion, we have found that BT incurred very significant losses on [Contract 1] between July 2008 and April 2009 where it failed to cover not only adjusted EEO costs, but even the costs of interconnection. As such, BT’s prices were not only lower than those of the (adjusted) equally efficient operator, they were even below the regulated costs of the upstream inputs.

6.347 The absolute margins we have found over the period July 2008 to April 2009 are summarised in Table 6.10 below.

Table 6.10: [Contract 1]: absolute margins over the period July 2008 to April 2009

| Source: Ofcom analysis of data |

6.348 In this sub-section we consider whether BT’s contract with [Company 2] was incrementally profitable over the period July 2008 to April 2009. We start our analysis in July 2008 as this is the full month of [Contract 2]. We examine the

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464 See Annex 4.
profitability of the contract both on a month-by-month basis and over the period as a whole.

6.349 Table 6.11 summarises the profitability of [⪪ Contract 2] between July 2008 and April 2009. We present data on the average, monthly minimum and monthly maximum margins earned over the period July 2008 to April 2009. The results show that over the period July 2008 to April 2009, BT’s average loss on [⪪ Contract 2] was [⪪ 0-10%] on an adjusted EEO basis and [⪪ 0-10%] on an EEO basis. BT also failed to cover interconnection and network costs, recording an average loss of [⪪ 0-10%]. BT did however earn a small margin of [⪪ 0-10%] over upstream interconnection costs.

### Table 6.11: [⪪ Contract 2]: percentage margins, July 2008 to April 2009

<table>
<thead>
<tr>
<th>Margins (%)</th>
<th>Monthly minimum</th>
<th>Monthly maximum</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Margin over interconnection costs</td>
<td>[⪪ 0-10%]</td>
<td>+[⪪ 0-10%]</td>
<td>+[⪪ 0-10%]</td>
</tr>
<tr>
<td>Margin over interconnection costs</td>
<td>[⪪ 0-10%]</td>
<td>+[⪪ 0-10%]</td>
<td>-[⪪ 0-10%]</td>
</tr>
<tr>
<td>and core network costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Margin over EEO costs</td>
<td>[⪪ 20-30%]</td>
<td>-[⪪ 0-10%]</td>
<td>-[⪪ 0-10%]</td>
</tr>
<tr>
<td>Margin over adjusted EEO costs</td>
<td>[⪪ 20-30%]</td>
<td>-[⪪ 0-10%]</td>
<td>-[⪪ 0-10%]</td>
</tr>
</tbody>
</table>

Source: Ofcom analysis of BT data

6.350 The results summarised above show that BT failed to meet the adjusted EEO test on [⪪ Contract 2] in each and every month over this period. BT also failed to meet the EEO test in each and every month (although in at least one month the margin over EEO costs was very close to zero).

### Figure 6.12: [⪪ Contract 2]: (adjusted EEO) cost stack as a percentage of revenues, July 2008 to April 2009

Source: Ofcom analysis of BT data

6.351 Figure 6.12 shows the cost stack for [⪪ Contract 2] over the period July 2008 to April 2009. It demonstrates that BT’s revenues failed to cover interconnection costs and core network costs in every month except April 2009 (and therefore also failed to cover EEO and adjusted-EEO costs). In July, August and October 2008, BT also failed to cover its interconnection costs, recording losses of [⪪ 0-10%], [⪪ 0-10%] and [⪪ 0-10%] respectively. In April 2009, BT covered its interconnection costs and core network costs, but failed to recover the costs of an equally efficient operator, incurring a loss of [⪪ 0-10%] on an adjusted EEO basis. (On an EEO basis, BT incurred a small loss of [⪪ 0-10%].)

6.352 We observe that the overall losses as a proportion of revenues on [⪪ Contract 2] declined over the period July 2008 to April 2009. This was due to a number of factors including:

- variations in the margin over interconnection costs.\(^{465}\) In particular, the margins BT earned on some [⪪] call types increased over the period. In

\(^{465}\) Interconnection costs dominate the cost stack, accounting for between [⪪ 90-110%] and [⪪ 90-110%] of revenues over the period July 2008 to April 2009. Therefore, variations in the margin over interconnection costs are the most important driver of changes in the margin over adjusted EEO costs.
addition, NCCN908 discounts (see paragraphs 6.316 to 6.317) result in improved margins for calls to 0845 and 0870 numbers from November 2008.

- fixed non-network costs are smoothed (in absolute terms) over time. As monthly revenues increase significantly over the period (almost six-fold from £[≠] 0-5 million in July 2008 to over £[≠] 5-10 million in April 2009), the relative importance of these costs decline; and

- CPS migration charges fall once [≠] Company 2]’s existing end user customer base has been migrated onto Wholesale Calls.466

6.353 Our analysis of the margins earned by BT on [≠] Contract 2] shows that it did not recover the costs of an equally efficient operator (either adjusted or unadjusted). The absolute margins over this period are summarised in Table 6.13 below.

Table 6.13: [≠] Contract 2]: absolute margins over the period July 2008 to April 2009 [≠]

Source: Ofcom analysis of data

Contribution of individual contracts to the total product margin

6.354 In this sub-section, we look at the contribution to the total product margin made by individual contracts (in particular, [≠] Contract 1 and Contract 2]), to understand why BT’s Wholesale Calls product as a whole failed to cover the costs of an equally efficient operator over the period July 2008 to April 2009.

6.355 As we explain in paragraph 6.332, we have focused our discussion of BT’s historic margins on individual contracts on [≠] Contract 1 and Contract 2], reflecting [≠]. We therefore do not discuss in detail the results for each of the other 19 contracts individually modelled, which can be found in Annex 5. In summary, BT’s revenues failed to cover the adjusted EEO costs on six other contracts – in addition to [≠] Contract 1 and Contract 2] – over the period July 2008 to April 2009. These were the contracts with [≠]. Between them, these six contracts accounted for a loss (over adjusted EEO costs) of £[≠] million during this period. Of this figure, the [≠] contract accounted for £[≠] million (or [≠] 70-80%), and the [≠] contract for £[≠] million (or [≠] 10-20%).

6.356 Overall BT made a negative margin of £[≠] million on its Wholesale Calls product on an adjusted EEO basis between July 2008 and April 2009. [≠] Contract 1 and Contract 2] between them accounted for a negative margin of £[≠] million during this period.467 The difference of £[≠] million468 is accounted for by the (incremental) profit on BT’s other contracts and non-network costs that were included in our modelling as

466 Note that while migration may slow once the existing customer base is bulk migrated to Wholesale Calls, there will remain some CPS transaction costs reflecting on-going end user churn for the reseller.

467 For the avoidance of doubt this refers to the aggregate of the incremental losses made on these two contracts individually; it is not the result of a combinatorial test of the two contracts.

468 Note that totals may not appear to equal the sum of the components due to rounding.
incremental to the Wholesale Calls product rather than individual contracts. See Table 6.14 below.

6.357 We note that the “others” category in Table 6.14 contains £[]> million of non-network costs identified by BT as incremental to the product rather than individual contracts. BT noted in its submission that a part of these costs was driven by the functionality requirements of []> Company 1 and Company 2]. If we were to allocate some of these non-network costs to []> Contract 1 and Contract 2] the losses on these contracts would be even more significant. The effect at the total product level would be the same.

Table 6.14: Absolute margins on []> Contract 1, Contract 2] and other Wholesale Calls contracts, July 2008 to April 2009

Note: The total row is the sum of the three rows above. Totals may not appear to equal the sum of the components due to rounding.
Source: Ofcom analysis of BT data

6.358 Table 6.14 shows that BT’s failure to cover the costs of an (adjusted) EEO over the period July 2008 to April 2009 is primarily a result of BT’s pricing on []> Contract 1], and to a lesser extent, []> Contract 2]. Whilst we found negative margins on six other contracts over this period, they account for a loss of £[]> million, which is less than 5% of the total loss made on the Wholesale Calls product as a whole.

Total product excluding []> Contract 1]

6.359 As we explain in paragraphs 6.181 and 6.182, we also present the results for the total product excluding []> Contract 1], to inform the discussion of the impact of BT’s behaviour on competition. Table 6.15 shows that even excluding []> Contract 1], BT still fails to cover the costs of an equally efficient operator (on both an EEO and adjusted EEO basis) over the period July 2008 to April 2009.

Table 6.15: Absolute margins on the Wholesale Calls total product excluding []> Contract 1], July 2008 to April 2009

Source: Ofcom analysis of BT data

469 These costs are a mix of costs that are genuinely common to the business as a whole, and costs that are incremental to individual contracts but are allocated in BT’s financial recording systems as common costs.

470 In its report, CRA excludes these costs when it presents the results for “all other contracts” (see CRA Table 22, note [1]). Doing so increases the margins over EEO and adjusted EEO costs for “Others” by £[]> million to +£[]> million.

471 BT’s response to Question 45 of the 8th section 26 Notice.

472 The []> contract – the largest of the six other contracts for which we find BT made a loss over adjusted EEO costs – accounts for a loss of £[]> million, which is only []> 0-10%] of the total loss made on the Wholesale Calls product as a whole.
Sensitivity analysis on the relevant time period

6.360 In the Statement of Objections, we analysed margins over the period March 2008 to April 2009. We stopped our analysis at April 2009 as this was most recent month for which data was available at the time of requesting data from BT.

6.361 As explained in paragraphs 6.148 to 6.151, BT argues that the correct time period for assessing the profitability of individual contracts should reflect the lifetime of those contracts. In respect of overall profitability at the product level, BT argues that the product’s profitability should be assessed over at least the lifetime of [\(\times\) Contract 2].

6.362 We address BT’s comments in relation to the appropriate time period in this case in paragraphs 6.171 to 6.175 above and explain why we consider it appropriate to assess the sensitivity of BT’s margins to the time period modelled. Given this, and the availability of data, we have analysed margins over an extended time period from March 2008 to December 2010.473

**BT Wholesale Calls total product margin**

6.363 Table 6.16 summarises the profitability of BT’s Wholesale Calls product over the time period March 2008 to December 2010. Over this longer time period, BT’s Wholesale Calls business still does not cover the costs of an equally efficient operator. However, these negative margins are smaller in percentage terms than those incurred by BT over the shorter time period. Between March 2008 and December 2010, BT earned margins of [-[\(\times\) 0-10%] and -[\(\times\) 0-10%] over EEO and adjusted EEO costs respectively.

<table>
<thead>
<tr>
<th>Margins (%)</th>
<th>March 2008 to December 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum</td>
</tr>
<tr>
<td>Margin over interconnection costs</td>
<td>+[(\times) 0-10%]</td>
</tr>
<tr>
<td>Margin over interconnection costs and core network costs</td>
<td>-[(\times) 0-10%]</td>
</tr>
<tr>
<td>Margin over EEO costs</td>
<td>-[(\times) 0-10%]</td>
</tr>
<tr>
<td>Margin over adjusted EEO costs</td>
<td>-[(\times) 0-10%]</td>
</tr>
</tbody>
</table>

Source: Ofcom analysis of BT data

6.364 Figure 6.17 below shows how BT’s cost stack changed over the period March 2008 to December 2010. It shows that beyond April 2009, BT’s revenues failed to cover adjusted EEO costs in all but three months: August 2009, July 2010 and December 2010 (when it earned positive margins of -[\(\times\) 0-10%] and -[\(\times\) 0-10%] over EEO and adjusted EEO costs respectively).474 In nine of these months, BT’s revenues also did not cover its EEO costs.

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473 As explained in paragraphs 6.163, looking at margins over the longer time period March 2008 to December 2010 introduces additional costs of £\([\times\) million per month in the period March 2008 to April 2009. This is because development costs incurred over the period May 2009 to December 2010 (£\([\times\) million) are amortised over the entire period, which includes the months from March 2008 to April 2009.

474 Moreover, the positive margin in July 2010 is largely a result of the way in which \([\times\] has been applied to \([\times\) Contract 2] (see Annex 4).
costs. BT did however recover its interconnection and core network costs in all but one month (June 2009).475

Figure 6.17: Wholesale Calls total product: (adjusted EEO) cost stack as a percentage of revenues, March 2008 to December 2010

Source: Ofcom analysis of BT data

BT Wholesale Calls margins on [\(\text{Contract 1}\)]

Table 6.18 below provides a summary of the profitability of [\(\text{Contract 1}\)] over the period July 2008 to December 2010. Over the longer time period, the profitability of [\(\text{Contract 1}\)] is similar to that over the shorter time period. BT makes an average negative margin of [\(\text{[\(\text{\[0-10\%\]}\)]}\)] on an adjusted EEO basis and [\(\text{[\(\text{\[0-10\%\]}\)]}\)] on an EEO basis. BT failed to cover the interconnection costs associated with providing the Wholesale Calls product, recording a margin of [\(\text{\[0-10\%\]}\)].

Table 6.18: [\(\text{Contract 1}\)]: minimum, maximum and average margins, July 2008 to December 2010

<table>
<thead>
<tr>
<th>Margins (%)</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Margin over interconnection costs</td>
<td>[(\text{[0-10%]})]</td>
<td>[(\text{[0-10%]})]</td>
<td>[(\text{[0-10%]})]</td>
</tr>
<tr>
<td>Margin over interconnection costs and core network costs</td>
<td>[(\text{[20-30%]})]</td>
<td>[(\text{[0-10%]})]</td>
<td>[(\text{[0-10%]})]</td>
</tr>
<tr>
<td>Margin over EEO costs</td>
<td>[(\text{[20-30%]})]</td>
<td>[(\text{[0-10%]})]</td>
<td>[(\text{[0-10%]})]</td>
</tr>
<tr>
<td>Margin over adjusted EEO costs</td>
<td>[(\text{[20-30%]})]</td>
<td>[(\text{[0-10%]})]</td>
<td>[(\text{[0-10%]})]</td>
</tr>
</tbody>
</table>

Source: Ofcom analysis of BT data

Figure 6.19 below shows how the [\(\text{Contract 1}\)] cost stack changed over the period July 2008 to December 2010. It shows that BT’s revenues failed to cover interconnection costs in each and every month over the period.

Figure 6.19: [\(\text{Contract 1}\)]: (adjusted EEO) cost stack as a percentage of revenues, July 2008 to December 2010

Source: Ofcom analysis of BT data

BT Wholesale Calls margins on [\(\text{Contract 2}\)]

Table 6.20 below provides a summary of the profitability of [\(\text{Contract 2}\)] over the period July 2008 to December 2010. Unlike [\(\text{Contract 1}\)], the profitability of [\(\text{Contract 2}\)] improves significantly over the longer time period. However, BT still makes an average negative margin of [\(\text{\[0-10\%\]}\)] on an adjusted EEO basis and [\(\text{\[0-10\%\]}\)] on an EEO basis. BT does now earn a very small positive margin of [\(\text{\[0-10\%\]}\)] over interconnection and network costs. BT also earns an average margin of [\(\text{\[0-10\%\]}\)] over interconnection costs.

475 In June 2009, BT missed a price notification to all customers on variable rate contracts, relating to a change in mobile termination rates by Orange and H3G. Wholesale Calls thus failed to increase prices when it was contractually entitled to do so, costing an estimated £\(\text{\[0-5\]}\) million. See paragraph 149 of CRA’s Report.
Table 6.20: [Contract 2]: minimum, maximum and average margins, July 2008 to December 2010

<table>
<thead>
<tr>
<th>Margins (%)</th>
<th>July 2008 to December 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum</td>
</tr>
<tr>
<td>Margin over interconnection costs</td>
<td>[-][21-30]%</td>
</tr>
<tr>
<td>Margin over interconnection costs and core network costs</td>
<td>[-][21-30]%</td>
</tr>
<tr>
<td>Margin over EEO costs</td>
<td>[-][21-30]%</td>
</tr>
<tr>
<td>Margin over adjusted EEO costs</td>
<td>[-][21-30]%</td>
</tr>
</tbody>
</table>

Source: Ofcom analysis of BT data

6.368 Figure 6.21 below shows how the [Contract 2] cost stack changed over the period July 2008 to December 2010. It shows that BT’s revenues failed to cover adjusted EEO costs over the period July 2008 to June 2010, as well as in August 2010.

Figure 6.21: [Contract 2]: (adjusted EEO) cost stack as a percentage of revenues, July 2008 to December 2010

[Contract 2]

Source: Ofcom analysis of BT data

Conclusions

6.369 Overall BT made a loss of £[21-30] million on its Wholesale Calls product on an adjusted EEO basis between July 2008 and December 2010 (see Table 6.22 below). [Contract 1 and Contract 2] between them accounted for a loss of £[21-30] million during this period.476 The difference of £[21-30] million is accounted for by the (incremental) profit on BT’s other contracts and non-network costs that were included in our modelling as incremental to the Wholesale Calls product rather than individual contracts.478

6.370 Over the longer time period, BT’s revenues failed to cover the adjusted EEO costs on only one other contract in addition to [Contract 1 and Contract 2]. This contract was [Contract 1], on which BT made a loss of -[21-30]% (or £[21-30] million) on an adjusted EEO basis, over this period.479

6.371 The “others” category in Table 6.22 contains £[21-30] million of non-network costs identified by BT as incremental to the product rather than individual contracts.480 If we were to allocate some of these non-network costs to [Contract 1 and Contract 2] the losses on these contracts would be even more significant. The effect at the total product level would be the same.

476 For the avoidance of doubt this refers to the aggregate of the incremental losses made on these two contracts individually; it is not the result of a combinatorial test of the two contracts.

477 Note that totals may not appear to equal the sum of the components due to rounding.

478 These costs are a mix of costs that are genuinely common to the business as a whole, and costs that are incremental to individual contracts but are allocated in BT’s financial recording systems as common costs.

479 See Annex 5.

Table 6.22: Absolute margins on [Contract 1, Contract 2] and other Wholesale Calls contracts, July 2008 to December 2010

[ CONTRACT 1 ]

Note: The total row is the sum of the three rows above. Totals may not appear to equal the sum of the components due to rounding.
Source: Ofcom analysis of BT data

Total product excluding [Contract 1]

6.372 Table 6.23 below also shows that BT’s failure to cover the costs of an (adjusted) EEO over the period July 2008 to December 2010 is primarily a result of BT’s pricing on [Contract 1]. Therefore, as demonstrated in Table 6.23 below, when [Contract 1] is excluded from the analysis over the longer time period from July 2008 to December 2010, BT covered the costs of an equally efficient operator (on both an EEO and adjusted EEO basis).

Table 6.23: Absolute margins on the Wholesale Calls total product excluding [Contract 1], July 2008 to December 2010

[ CONTRACT 1 ]

Source: Ofcom analysis of BT data

6.373 In addition to our sensitivity on the relevant time period, we have also considered the sensitivity of our results to BT’s proposed treatment of network costs at the individual contract level (see paragraphs 6.276 to 6.277). However, as explained in paragraphs 6.271 and 6.272, the treatment of network costs at the individual contract level (and therefore the results of this sensitivity) are of secondary importance in this case. For completeness, we present the margins on individual contracts when network costs are excluded in Annex 6. In summary, the negative margin that BT earned on [Contract 1] is not sensitive to the exclusion of network costs (regardless of the time period considered), while the negative margin that BT earned on [Contract 2] is only sensitive to the exclusion of network costs when the longer time period is considered. With respect to the other contracts on which we have found negative margins (see Annex 5), removing network costs results in positive margins on all of these contracts.

6.374 For the reasons set out in paragraphs 6.278 to 6.279, we consider the arguments for including downstream network costs in the cost stack for the Wholesale Calls total product to be stronger than for individual contracts. We therefore have not explicitly included an additional scenario that excludes network costs at the total product level. However, if BT’s arguments in relation to whether network costs are incremental to the Wholesale Calls product as a whole are correct, this would only reinforce our conclusion that there are no grounds for action in this case.

Conclusions on historical evidence of negative margins

6.375 Our analysis of BT’s historical margins shows that BT failed to maintain a sufficient margin between its upstream and downstream prices such that it failed to cover downstream costs during the period July 2008 to April 2009. Specifically, we have found that BT failed to cover the costs of an (adjusted) EEO in each month over the period July 2008 to April 2009. Over the period as a whole, BT earned a negative margin over adjusted EEO costs of -0.10% (or -£ million). Using data covering a longer time period that BT provided as part of its Response, our analysis shows that this failure to cover adjusted EEO costs continued beyond April 2009, and
that over the period July 2008 to December 2010 as a whole, BT failed to cover its costs on an adjusted EEO basis.

6.376 Our analysis of the profitability of [contract 1 and contract 2] shows that BT earned significant negative margins on these contracts over the period July 2008 to April 2009. On an adjusted EEO basis, BT made a negative margin of [10-20%] (or £[millions]) and [0-10%] (or £[millions]) respectively over this period.

6.377 Our finding that BT priced below cost on [contract 1] is not sensitive to either the time period over which the analysis is carried out, or the treatment of network costs at the individual contract level. Moreover, we have found that BT’s prices were so low that they failed to cover the costs of the upstream inputs. Therefore, we conclude that BT’s prices failed to cover its appropriately measured incremental costs on [contract 1].

6.378 As regards [contract 2], our finding of negative margins is not sensitive to either the time period or the treatment of network costs, when these sensitivities are considered separately. It is only if the margins are considered over a longer time period and network costs are excluded that [contract 2] is profitable.

6.379 Therefore, we conclude on the basis of our historical analysis that BT failed to maintain a sufficient margin between its upstream and downstream prices such that it failed to cover its downstream costs on the total product, over at least the period July 2008 to April 2009.

**BT’s governance model for Wholesale Calls**

**Introduction**

6.380 In paragraphs 6.83 to 6.114 above, we explain the reasons why it is appropriate in this case to consider prospective evidence on the profitability of the entire BT Wholesale Calls business and individual contracts. In the Statement of Objections, we considered the extent to which BT’s governance models would have demonstrated that the pricing adopted by BT would have resulted in a margin squeeze. We based our approach on BT’s models to demonstrate that if BT had adopted and correctly implemented a more appropriate set of assumptions, even within its own governance modelling regime, it could have reasonably foreseen that it would incur losses as a result of its pricing behaviour.

6.381 We made a number of adjustments to BT’s governance models, reflecting either correction of particularly material errors or conceptual or methodological issues where we disagreed with BT’s assumptions. Our analysis led us to conclude that if BT had correctly implemented a more appropriate set of assumptions in its governance modelling when bidding for [contract 1 and contract 2], it would have forecast that the aggressive pricing that it was pursuing would lead to negative margins for both those contracts and the Wholesale Calls product as a whole.

6.382 As part of its Response, BT instructed CRA to review its governance modelling, and Ofcom’s adjustments. In its analysis, CRA considered the same question that we considered in the Statement of Objections, that is, “whether, given the information available to BT at the time, and based on reasonable assumptions, BT could have expected its margins to be negative”. CRA accepts a number of Ofcom’s

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481 See paragraph 5 of CRA’s Report.
adjustments, however, it raises issues in three areas: own call origination, margins on minor call types, and network costs. CRA concludes on the basis of its analysis that the only contract which appears to have been unprofitable on a prospective basis is the [.Company 1] bid.

6.383 The remainder of this sub-section is structured as follows:

- first, we introduce BT’s governance models;
- we then set out the changes we made to BT’s governance models in the Statement of Objections, CRA’s view on these changes, and our view on the most appropriate approach; and
- finally, we present our revised margin estimates for the [Company 1 and Company 2] individual contract tests and the total product test.

**BT’s governance models**

6.384 As explained above, we understand that BT has a governance process relating to approval of bids prior to the signing and entering into force of a Wholesale Calls contract. As part of this process BT uses models it has developed to estimate the margins that, it considers, an equally efficient operator would earn on the proposed contracts (i.e. the margin over the ‘CPSO cost floor’). The model outputs are used to inform BT’s assessment of whether any proposed pricing is consistent with its competition law responsibilities.

6.385 [.

6.386 The modelling approach originally adopted by BT following the Gamma Telecom case has changed over time. BT explained that its 2005 margin model had been built on a fully allocated cost ("FAC") basis. BT felt that this model over-recovered the Wholesale Calls’ fixed cost and so it reviewed the model on a number of occasions from August 2006 onwards. BT has told us that it was trying to develop a model that more realistically reflected the evolving market conditions. It was balancing the commercial imperative of bidding competitively for business, with BT’s best judgement as to the relevant legal and regulatory constraints.

6.387 Some key changes BT made over time to this model were as follows:

(i) A number of changes to the assumptions used in the model to ensure that what it considered to be inappropriate costs were excluded at the bid level.

(ii) Simplifying a number of detailed assumptions concerning the costs of routing calls across the BT network, the costs relating to service level agreements, rebates and grants and simplifying BT’s treatment of certain

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482 Question 25 of the 1st section 26 Notice.
483 See Section 9 below.
484 BT response dated 9 September 2008 to question 25 of the 1st Section 26 Notice
485 BT Response, paragraph B.57.
call types, such as calls to non-geographic numbers and ‘minor call types’.\textsuperscript{486}

(iii) Certain CPSO service costs that were either not, or were no longer fully or partially incurred by CPSOs, were removed from the margin model.

(iv) [\textsuperscript{\textbullet} change relating to core network costs].

(v) BT began using Ofcom statistics\textsuperscript{487} to make assumptions about the proportion of traffic and efficient CPSO would originate and terminate on its own network.

6.388 Generally speaking, BT’s changes have resulted in the so-called ‘CPSO cost floor’ (i.e. BT’s estimate of the costs of an EEO) reducing, and therefore enabling lower prices to still generate positive margin estimates.

6.389 For [\textsuperscript{\textbullet} Contract 1 and Contract 2] BT used both individual contract models and total product models.\textsuperscript{488} As explained above, the role of the contract-level test is to estimate the margins earned over BT’s view of the appropriate contract-specific incremental costs. The output of the individual contract models is the average annual margin over the contract lifetime.

6.390 BT’s total product governance model uses the forecast revenues, costs and margins on the [\textsuperscript{\textbullet} Wholesale Calls contracts] to calculate the profitability at a product level. [\textsuperscript{\textbullet}]. In addition to the margins earned on individual contracts, the total product governance model also includes an allowance for Wholesale Calls intra-product common costs.\textsuperscript{489}

\textsuperscript{486} In its response of 6 November 2008 to Q2 of the 4\textsuperscript{th} section 26 Notice, BT defined what it meant by minor calls: “BT views local and national geographic calls, calls to 0845 and 0870 and calls to O2, T-Mobile (including Virgin), Orange, Vodafone and Hutchison 3G as major call types with the remainder being minor call types.” Minor calls therefore include, for example, calls to other NTS services (i.e. 0800, 0808, 0871, premium rate), calls to directory enquiry services, and international calls.

\textsuperscript{487} For example, Ofcom’s quarterly Telecommunications Market Data Updates.

\textsuperscript{488} The use of a total product model appears to relate to the change in BT’s internal governance processes for these two contracts. Ofcom understands that generally speaking BT’s governance processes require contracts to [\textsuperscript{\textbullet}]. However, for [\textsuperscript{\textbullet} Contract 2] we understand that the guidance was changed to enable lower prices. Specifically, the revised approach would authorise pricing that [\textsuperscript{\textbullet}]. See, for example, CIB Paper No: CIB 159-2007-A, "WHOLESALE CALLS Bespoke Pricing for [\textsuperscript{\textbullet}] – 11 December 2007", supplied by BT in response to the 1\textsuperscript{st} section 26 Notice.

\textsuperscript{489} [\textsuperscript{\textbullet}].
Changes to BT’s governance models

6.391 In the Statement of Objections, we made a number of adjustments to these models, reflecting either:

- correction of material errors in the calculations we identified in reviewing the models; or
- conceptual or methodological issues where we disagreed with BT’s assumptions.

6.392 We only made changes to the [Contract 1 and Contract 2]-specific models (i.e. we did not change BT’s assumptions in relation to another contract or the rest of the Wholesale Calls business — however, we believed that similar errors may be repeated in these contracts and therefore our approach was likely to lead to an overstatement of the margin for the total product).

6.393 We also made changes to BT’s treatment of network costs in the total product governance model.

6.394 We noted in the Statement of Objections that our use of BT’s models should not be interpreted as an endorsement of the broad approach adopted by BT. Neither should our changes be considered an exhaustive list of the changes to be made to ensure that BT’s pricing remains compliant with competition law. Rather, our approach was focused on addressing the specific issue of whether, on the basis of its own governance modelling, BT could have reasonably foreseen, at the time of entering into [Contract 1 and Contract 2] in particular, negative margins arising on the Wholesale Calls product as a whole.

Changes to the [Contract 1 and Contract 2] models

6.395 Below, we set out the main changes we made to the [Contract 1 and Contract 2] governance models, BT’s/CRA’s view on these changes, and our conclusions.

Treatment of upstream interconnection costs for major call types

6.396 As we explain in paragraphs 6.209 to 6.212, BT assumes in its governance modelling that less than 100% of call minutes for major call types incurs upstream interconnection costs. This is based on two principal assumptions:

(i) that the EEO would have its own access network; and

(ii) that the EEO would be active in the market for hosting non-geographic numbers (i.e. 0845 and 0870).

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490 Although we have not made explicit changes to the modelling of the margins earned on the rest of the Wholesale Calls business (i.e. the entries for BT “internal sales” or “BTW forecast”), to the extent that certain parts of the modelling for these contracts are based on the [Contract 1 and Contract 2] models (e.g. using the same call origination as a percentage of revenue estimate as modelled in [Contract 1]), the margins will vary from BT’s original.

491 We have not altered BT’s governance models to reflect windfall gains and losses which we consider could not have been reasonably foreseen by BT at the time of entering into contracts.
We disagreed with both of these assumptions (see paragraphs 6.235 to 6.256 above). We therefore adapted BT’s models to include 100% of the relevant upstream call origination, call termination\(^{492}\) and PPP costs for all call types.

CRA agrees with BT that it is reasonable to assume that an EEO would avoid some call origination charges, and that it is reasonable to use the actual extent to which other operators avoid call origination charges as a proxy for the EEO. However, CRA assumes \(\geq 1\)% own call origination in their base case, describing its approach as “very conservative”. As a sensitivity, CRA reports the effect of assuming \(\geq 1\)% own call origination for \(\geq 1\) Contract 2 only.

With respect to the proportion of non-geographic calls that terminate on another operator’s network, CRA believes that it was reasonable for BT to assume this is less than 100%. In CRA’s view, it is reasonable to think of an EEO as having some network of its own, and therefore there may have been some non-geographic number service providers on its own network. However, CRA assumes that 100% of these calls are terminated on other operators’ networks, describing its approach as “conservative”.

For the reasons explained in paragraphs 6.246 to 6.247, we maintain that the appropriate approach in this case is to include 100% of the relevant upstream call origination, call termination and PPP costs for all call types.

**Inclusion of minor call type margins**

In the Statement of Objections, we explained that BT’s modelling of the margins made on minor calls in \(\geq 1\) Contract 1 and Contract 2\] models was highly simplified and based on a number of assumptions which appear to be based on little empirical analysis.\(^{493}\) In addition, the treatment between the two contracts was inconsistent. In particular, BT assumed that:

- the average revenue per minute for minor call types was equal to a multiple of the average revenue per minute for major calls;\(^{494}\) and
- the margin earned on minor call types was on average \(\geq 1\)%\(^{495}\).

The result of BT’s approach was that minor calls were assumed to contribute a significant positive margin to the overall contract margin. On the basis of our

\(^{492}\) In making this change for local and national geographic number ranges we have assumed that all non-CPS SAD traffic attracts the BT DLE call termination rate. This will understate the true cost of termination as some traffic will terminate on networks operated by other CPs which have higher termination rates (i.e. on the basis of their level of interconnection with BT, other CP termination rates can be higher than the BT DLE rate). Therefore, our approach is conservative (i.e. in BT’s favour).

\(^{493}\) \(\geq 1\).

\(^{494}\) This multiple was \(\geq 1\)% for \(\geq 1\) Contract 2 and \(\geq 1\)% for \(\geq 1\) Contract 1. These values are used to generate the weight attached to the minor calls margins in the overall contract margin estimate.

\(^{495}\) This is BT’s weighted average cost of capital (“WACC”). Ofcom notes that this is a measure of the return on capital not the return on sales as it was applied by BT.
historical analysis of margins, we considered that BT significantly overestimated the margins earned on minor call types when bidding for contracts.\textsuperscript{496}

6.403 In our analysis, we sought to base the margin assumptions for minor calls on empirical evidence. We retained BT’s basic modelling approach, but adopted assumptions/parameters based on evidence from our historical analysis.\textsuperscript{497} The result of these changes was to significantly reduce the contribution to overall margins made by minor call types. Specifically, our approach used:

- the same revenues and minutes\textsuperscript{498} data for \textsuperscript{\textless}Contract 1 and Contract 2\textsuperscript{\textgreater} used in our historical margin modelling to calculate the average revenue per minute for major and minor call types in September 2008. This showed that BT’s assumptions on minor calls in \textsuperscript{\textless}Contract 1 and Contract 2\textsuperscript{\textgreater} bid models underestimated the revenue per minute for minor calls compared to that for major calls. As a consequence, BT’s approach understated the importance of the minor calls margin in the overall contract or total product margin. The ratios we estimated were approximately \textsuperscript{\textless}400-600\%\textsuperscript{\textgreater} (i.e. the revenue per minute for minor calls was five times that for major calls) and \textsuperscript{\textless}600-800\%\textsuperscript{\textgreater} on \textsuperscript{\textless}Contract 2\textsuperscript{\textgreater} and \textsuperscript{\textless}Contract 1\textsuperscript{\textgreater} respectively, whereas BT assumed \textsuperscript{\textless}100-300\%\textsuperscript{\textgreater} and \textsuperscript{\textless}100-300\%\textsuperscript{\textgreater}.

- our revised minor calls analysis, which calculated the margins on minor call types (as a whole) over interconnection costs earned on \textsuperscript{\textless}Contract 1 and Contract 2\textsuperscript{\textgreater} in September 2008. This showed that BT significantly overestimated the margins earned on minor calls in its governance models. We found that, rather than the \textsuperscript{\textless}1\%\textsuperscript{\textgreater} margin BT assumed, the average margin for these call types in \textsuperscript{\textless}Contract 2\textsuperscript{\textgreater} was around \textsuperscript{\textless}1\%\textsuperscript{\textgreater}, while for \textsuperscript{\textless}Contract 1\textsuperscript{\textgreater} it was around \textsuperscript{\textless}1\%\textsuperscript{\textgreater}. We explained that the difference between these margins was largely the consequence of \textsuperscript{\textless}Company 1\textsuperscript{\textgreater} not using Wholesale Calls for \textsuperscript{\textless}certain call types\textsuperscript{\textless}.

\textbf{BT’s representations}

6.404 CRA agrees with Ofcom that BT should have modelled minor calls on the basis of empirical evidence.\textsuperscript{500} However, it criticises our approach as it uses information that was not available to BT at the time it was bidding for the contracts.\textsuperscript{501}

\textsuperscript{496} We estimated that the average percentage margin over interconnection costs earned by BT on the Wholesale Calls product across all minor call types was 6.4\% over the entire modelling period March 2008 to April 2009.

\textsuperscript{497} We retained BT’s basic modelling approach because the approach we took to modelling minor calls in our historic analysis was not readily transferable into BT’s governance models.

\textsuperscript{498} Response to Question 21 in the 6\textsuperscript{th} section 26 Notice received 7 August 2009.

\textsuperscript{499} We note that BT was aware of \textsuperscript{\textless}Company 1\textsuperscript{\textgreater}’s intentions in this regard at the time of negotiating the contract.

\textsuperscript{500} In the Oral Representations Meeting, BT accepted that its approach to modelling margins on minor call types in its governance modelling for the \textsuperscript{\textless}Contract 1 and Contract 2\textsuperscript{\textgreater} bids was inappropriate.

\textsuperscript{501} In addition, CRA identified that we had made an error in our calculation of minor calls minutes when making our adjustments to the \textsuperscript{\textless}Contract 2\textsuperscript{\textgreater} model (discussed in paragraphs 6.410 to 6.411 below). Specifically, we calculated minor calls minutes over the life of the contract by multiplying the minor calls minutes associated with the \textsuperscript{\textless}\textgreater million CLIs to be transferred at the start of the contract.
6.405 CRA argues that prior to signing [齁 Contract 1 and Contract 2], BT could have used invoice data for other Wholesale Calls customers to determine margins over interconnection costs. Therefore, for its prospective analysis, CRA has analysed margins on minor calls for the three largest Wholesale Calls contracts that BT had at the time ( [~, ]). CRA argues that focusing on BT’s largest customers is appropriate as it was known that [~, Contract 1 and Contract 2] would be large. In addition, the charging structure for IDD calls to these customers is similar to the charging structure that was planned ( [~, ).

6.406 CRA focuses in particular on [~, another] contract, [~, ]. However, its analysis of the margins on minor call types for [~, two other] contracts suggests that they are similar. 

6.407 CRA carried out its analysis over a number of months so that it would not be influenced by month-to-month fluctuations in call patterns. Specifically:

- For [~, Contract 1], CRA has analysed data for the period September 2007 ( [~, ]) and February 2008 ( [~, ]).  
- For [~, Contract 2], CRA has analysed data for the period September 2007 and May 2008 ( [~, ]).  

6.408 CRA makes a number of adjustments to the [~, other contract] data to reflect differences between that contract and [~, Contract 1 and Contract 2]:

- For [~, Contract 1], CRA assumed [~, certain call types] revenues to be [~, ], because it was known that [~, ]. CRA also reduced the revenues of certain call types of ( [~, ).  
- For [~, Contract 2], CRA ( [~, ).

6.409 CRA also makes an adjustment for a billing error on DQ 118 500 calls. Over the period analysed by CRA, BT Wholesale charged for the precise duration of the call when it was contractually entitled to round up charges to the whole minute. CRA reasons that because customers would not have assumed that BT would make billing errors when assessing rival bids, the prospective analysis should include an adjustment for this error.

6.410 Table 6.24 summarises CRA’s assumed margin on minor calls for [~, Contract 1], alongside BT’s original assumption and the estimate we used in the Statement of Objections. CRA’s analysis for [~, Contract 1] shows ( [~, ). CRA’s analysis also by ( [~, the number of years of the contract). We should have scaled up the minutes to reflect the fact that the average number of CLIs over the life of the contract was expected to be ( [~, ] million. Correcting this error increases minor calls minutes over the life of the contract from Ofcom’s figure of ( [~, 0-5] billion to (~, 5-10] billion. This error resulted in a lower margin estimate for ( [~, Contract 2], by £ ( [~, ] million over ( [~, ] months.

502 CRA Report, Appendix B.

503 BT did not correct this billing error until August 2010. However, in the context of its historic analysis, CRA does not include missed revenues due to this billing error (CRA report, section 3.12). CRA also notes that BT mis-priced certain other minor calls, but does not make an adjustment to reflect this. Specifically, BT Wholesale neglected to charge a call setup fee on call types such as 0844 and 0871 calls. CRA argues that it is debateable whether BT would have amended its pricing had BT carried out this analysis.
shows that BT’s margin assumption of $[>10-20\%]$ was too optimistic, and that margins could have been expected to be negative ($[<]$). CRA’s analysis gives an average margin for minor call types of around $[<0-5\%]$ for $[<\text{Contract 1}]$.

**Table 6.24: Minor calls margin assumptions for $[<\text{Contract 1}]$ prospective analysis $[<]$**

Source: BT’s governance model for $[<\text{Contract 1}]$; Ofcom analysis based on BT data; and Table 15 of CRA’s Report.

6.411 Table 6.25 summarises CRA’s assumed margin on minor calls for $[<\text{Contract 2}]$, alongside BT’s original assumption and the estimate we used in the Statement of Objections. CRA’s analysis for $[<\text{Contract 2}]$ shows that BT’s assumption on minor calls revenues was too conservative. It also shows that BT’s assumption on minor calls margins of $[<10-20\%]$ was higher than justified. CRA analysis gives an average margin for minor call types of around $[<0-10\%]$ for $[<\text{Contract 2}]$.

**Table 6.25: Minor calls margin assumptions for $[<\text{Contract 2}]$ prospective analysis (over the life of the contract) $[<]$**

Source: BT’s governance model for $[<\text{Company 2}]$; Ofcom analysis based on BT data; and Table 19 of CRA’s Report.

**Conclusion on inclusion of minor call type margins**

6.412 In the Statement of Objections, we sought to base the assumptions on actual data. Our decision to use the parameters from our historical analysis reflected the data we had at the time. We recognise that our approach used information that was not available to BT at the time it was bidding for the contracts. This reflected our view that it was proportionate to use this data rather than request further data from BT.

6.413 We see merit in an approach that is based on information that would have been available to BT at the time. Therefore, we have adopted CRA’s approach for our analysis.

6.414 We appreciate that there are many possible approaches that BT could have taken had it chosen to base its modelling on empirical evidence, of which the approach suggested by CRA is just one. Indeed, this lack of clarity over the single most appropriate approach supports the view we expressed in paragraph 6.110, that prospective analysis involves using forecasts and assumptions which are speculative and uncertain. However, we consider that CRA’s approach is reasonable. We would note that CRA has used a sample for specific contracts and a specific time period. However, given our findings on effects, we have not felt it necessary to explore the effect of considering other contracts or other time periods.

**Inclusion of Freefone margins**

6.415 BT did not include the Freefone call type in its analysis of the margins earned on Wholesale Calls. BT informed us that this was due to a lack of data on Freefone call minutes. Calls to Freefone numbers are, however, included in the basket of calls relevant to the wholesale end-to-end calls product. Therefore, we considered that they should be included in the modelling of Wholesale Calls margins.
6.416 As there was no forecast of Freefone minutes in the governance models we used the same proxy as that used in our historical analysis of BT’s margins (see Annex 4). This resulted in an estimate of Freefone call minutes that was equal to \( \geq \% \) of non-Freefone major calls minutes for \( \geq \) Contract 2 and \( \geq \% \) on \( \geq \) Contract 1. The revenues from Wholesale Calls customers were zero, however there were both costs and revenues from the upstream interconnection charging agreements. As discussed in Annex 4 the upstream revenues from Freefone calls differed between BT-terminated calls and calls terminated by other CPs so we calculated the weighted average Freefone termination rates.

**CRA’s view**

6.417 CRA agrees that Freefone minutes should be included in the modelling, and considers Ofcom’s approach to approximating Freefone volumes to be reasonable.

6.418 CRA notes that Ofcom’s approach used a figure for the proportion of Freefone calls terminating on BT’s network (compared to terminating on other networks) that was based on data that would not have been available to BT prior to signing \( \geq \) Contract 1 and Contract 2. However, the range of figures that would have been available to BT at that time includes the figure Ofcom used, and in any case, the precise assumption adopted makes very little difference to the results.

**Conclusion on inclusion of Freefone margins**

6.419 We maintain the approach taken in the Statement of Objections of including Freefone margins in the \( \geq \) Contract 1 and Contract 2 models.

**Treatment of network costs at the contract level**

6.420 BT treats network costs as being incremental at the total product level, but not at the contract level. Therefore the individual contract models do not include any network costs. In paragraphs 6.274 to 6.279 we explain why we disagree with BT’s approach.

6.421 However, we explained in the Statement of Objections that for the purposes of our analysis, and for illustrative purposes, we had not included network costs in the contract-level analysis, but had included them in the total product test (as explained below). The effect of this assumption (all other things being equal) was to reduce the cost stack for individual contracts. However, it had no impact on the cost stack for the total product test. Therefore, while it made the individual contract tests easier to pass, it had no effect on the total product test.

6.422 As explained in paragraphs 6.268 to 6.272, CRA believes that network costs should be excluded from the contract (as well as product) level analysis.

6.423 We deal with BT/CRA’s arguments on network costs in paragraphs 6.274 to 6.284 above. In summary, we consider that there are reasons to believe that network costs

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504 We have also used the weighted average Freefone termination rates which take into account the difference in termination rates between BT-terminated and other CP-terminated Freefone calls.

505 Note that these proportions relate to the share of non-Freefone major call minutes. In comparison the estimate in Annex 4 relates to Freefone minutes as a share of all major call minutes (including Freefone itself) for the total product.

are incremental at the contract level, particularly for the largest contracts. However, we maintain the approach we took in the Statement of Objections.

**Correction of errors**

6.424 In addition to the conceptual/methodological changes discussed above, we also made corrections for a number of material modelling errors:\[507\]

- [\(\times\)].\[508\]
- [\(\times\)].
- [\(\times\)].
- [\(\times\)].\[509\]

6.425 CRA agrees with the corrections we made to BT's modelling. We retain these adjustments in our modelling.

**Changes to the BT Wholesale Calls' total product model**

6.426 There are two main types of revenue and cost data included in the total product model:

- the margins earned on [\(\times\) specific customer contracts] and the rest of the Wholesale Calls business (treated in aggregate) – these are the outputs from the individual contract modelling; and
- those costs and revenues that are incremental only at the total product level (i.e. within Wholesale Calls common costs).

6.427 We discuss our treatment of these two categories below:

(i) First, as we have explained above, we have only changed the [\(\times\) Company 1 and Company 2] models.\[510\] We have not made any changes to the modelling of the [\(\times\)] other Wholesale Calls contracts from that adopted by BT to keep this exercise manageable.\[511\]

(ii) [\(\times\)].\[512\]

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\[507\] In addition we have also corrected for a number of more minor spreadsheet errors such as the inappropriate use of rounded, hard-coded parameters by referring directly to the routing data contained within the original spreadsheet. We also corrected for an error in the [\(\times\) Company 2] model which resulted in the incorrect division of annual non-network costs by 3.25.

\[508\] [\(\times\)].

\[509\] [\(\times\)].

\[510\] Note that we have also used the [\(\times\) Company 1 and Company 2] contract-specific non-network costs from the individual bid models in the total product test.

\[511\] In this respect, CRA adopted the same approach.

\[512\] [\(\times\)].
Approach adopted in the Statement of Objections

6.428 In the Statement of Objections, we made no changes to the total product incremental non-network costs. However, we made a number of changes to BT’s treatment of network costs:

- \[ \geq \].
- \[ \geq \].
  - (i) \[ \geq \].
  - (ii) \[ \geq \].
  - (iii) \[ \geq \].
  - (iv) \[ \geq \].

CRA’s view

6.429 CRA does not comment on BT’s treatment of non-network costs. However, it does argue that network costs should be excluded from the product level when conducting an incremental cost test. This is because it understands that BT’s network costs are either common to a number of services, or can be regarded as sunk. CRA also understands \[ \geq \].

6.430 However, CRA also presents an alternative case that includes network costs at the product level. CRA maintains the broad approach followed by BT in early 2008, and agrees with the changes that Ofcom made in the Statement of Objections.

6.431 CRA believes that the following additional changes should be made:

- Whilst CRA agrees that it is more appropriate to allocate network costs to Wholesale Calls based on volumes rather than revenues, it argues that the figure Ofcom used was based on data that would not have been available to BT prior to signing \[ \geq \] Contract 1 and Contract 2.
- CRA argues that it is reasonable that BT should have used the more recent network cost model from 2006/07, which it would have had access to at the time of signing \[ \geq \] Contract 1 and Contract 2.

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513 We have made no modifications to the underlying calculations used to generate the non-network costs. However, this does not mean that we agree with BT’s approach. Indeed we consider there to be a significant risk that BT has underestimated the non-network costs. For example, \[ \geq \].

514 \[ \geq \].

515 \[ \geq \].

516 \[ \geq \].

517 CRA argues that Ofcom should not have excluded the costs associated with IDD specific conveyance. We accept this change.
Table 6.26: Comparison of network costs under BT, Ofcom and CRA approaches

Table 6.26 shows that CRA’s approach results in a higher allocation of network costs to Wholesale Calls compared to Ofcom’s approach in the Statement of Objections.

6.432 Table 6.26 shows that CRA’s approach results in a higher allocation of network costs to Wholesale Calls compared to Ofcom’s approach in the Statement of Objections.

Table 6.26: Comparison of network costs under BT, Ofcom and CRA approaches

[Table]

Source: BT’s governance model for the total product; Ofcom analysis based on BT data; and Table 20 of CRA’s Report.

Conclusions on changes to the BT Wholesale Calls total product model

6.433 We maintain the broad approach taken in the Statement of Objections to the total product model.

6.434 We accept that we used data to allocate network costs to Wholesale Calls that would not have been available to BT at the time. Our approach reflected the data we had at the time, and our view that it was proportionate to use this rather than seek additional data, particularly given that we were not relying on the analysis of BT’s governance models alone, but rather using it in conjunction with our historical analysis to form an overall view of profitability. We see merit in an approach based on data that would have been available to BT at the time, and therefore adopt CRA’s approach in this respect. We note that CRA’s approach actually gives a higher figure for the percentage of total calls attributable to the Wholesale Calls business than the figure we calculated in the Statement of Objections ($\geq 10-20\%$ versus $\geq 10-20\%$ for the total product including [Contract 1]).

6.435 Regarding CRA’s use of the more recent network cost model from 2006/07, we accept that, in principle, the most appropriate thing for BT to have done would be to use the most recent network cost model available to it. Therefore, we have adopted CRA’s approach in our analysis.

6.436 Taken together, these two changes result in higher network costs allocated to Wholesale Calls.

Margin estimates

6.437 Both BT’s individual contract and total product governance models reported what it referred to as the “net margin”. In the context of individual contracts the “net margin” was the margin over interconnection costs and any contract specific additional costs (e.g. contract inducements or transactions costs). In the context of the Wholesale Calls total product test, “net margin” included interconnection costs, network costs and all other non-network costs, including CPS transaction costs (i.e. is equivalent to the adjusted EEO test).

6.438 Table 6.27 summarises our revised net margin estimates for the [Company 1 and Company 2] individual contract tests and the total product test. The table also shows BT’s original net$^{518}$ (percentage) margin estimates and the net margin estimates we calculated in the Statement of Objections.

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518 The difference between the gross margin and the net margin in BT’s models was that the gross margin was the margin over interconnection costs, whereas the net margin took into account non-network costs, CPS transaction charges and, in the case of the total product test, network costs.
Table 6.27: Summary results of prospective analysis – absolute margin (£m) and percentage margin

<table>
<thead>
<tr>
<th></th>
<th>[∃] Contract 2 (over [∃] months)</th>
<th>[∃] Contract 1 (over one year)</th>
<th>Wholesale Calls product including [∃] Company 1 (over one year)</th>
<th>Wholesale Calls product excluding [∃] Company 1 (over one year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT’s original governance models</td>
<td>+£[∃]m +£[∃] 0-10%</td>
<td>+£[∃]m +£[∃] 0-10%</td>
<td>+£[∃]m +£[∃] 0-10%</td>
<td>+£[∃]m +£[∃] 0-10%</td>
</tr>
<tr>
<td>Statement of Objections\textsuperscript{519}</td>
<td>-£[∃]m -£[∃] 0-10%</td>
<td>-£[∃]m -£[∃] 0-10%</td>
<td>-£[∃]m -£[∃] 0-10%</td>
<td>-£[∃]m -£[∃] 0-10%</td>
</tr>
<tr>
<td>Our estimate</td>
<td>+£[∃]m +£[∃] 0-10%</td>
<td>-£[∃]m -£[∃] 0-10%</td>
<td>-£[∃]m -£[∃] 0-10%</td>
<td>+£[∃]m +£[∃] 0-10%</td>
</tr>
</tbody>
</table>

Source: BT’s governance model for the total product; Ofcom analysis based on BT data.

6.439 Our analysis in the Statement of Objections demonstrated that, once the adjustments we believed were necessary were made to BT’s governance models, the margins earned on [∃ Contract 1 and Contract 2] and the total product were negative.

6.440 Our revised analysis shows that the margins earned on [∃ Contract 1] and total product are negative, but the margin earned on [∃ Contract 2] is positive. This analysis still demonstrates that, if BT had adopted and correctly implemented a more appropriate set of assumptions, even within its own governance modelling regime, it could have reasonably foreseen that a negative margin on the Wholesale Calls product as a whole would have resulted from its pricing behaviour.

6.441 As regards [∃ Contract 2], we note that BT’s governance modelling did not include any core network costs at the individual contract level. As we explain in paragraphs 6.274 and 6.276, we believe that it is reasonable to assume that there are some network costs that are incremental to individual contracts – particularly [∃] contracts such as [∃ Contract 1 and Contract 2] – in the long run. Had BT included network costs at the individual contract level, the margin on [∃ Contract 2] over its lifetime is likely to have been negative. Such a result would be consistent with our historical analysis, which shows that [∃ Contract 2] is positive over the period July 2008 to December 2010 with network costs excluded, but negative over the same period with network costs included.

Conclusions: BT earned a negative margin over the period July 2008 to April 2009 that was reasonably foreseeable

6.442 The analysis presented in this Section demonstrates that BT’s actions meet the fifth element of our margin squeeze test, namely that BT has failed to maintain a sufficient margin between its upstream and downstream prices such that it failed to cover downstream costs.

6.443 Specifically, between July 2008 and April 2009, BT failed to cover the costs of an equally efficient operator on either the EEO or adjusted EEO basis:

- for the total Wholesale Calls product as a whole; and

\textsuperscript{519} Includes correction for calculation error in adjustment to the [∃ Company 2] model. See paragraph 6.297.
6.444 Our historical modelling suggests that BT’s pricing on [✓ Contract 1] was the most significant factor responsible for BT earning a negative margin on the total Wholesale Calls product. BT’s pricing on [✓ Contract 1] was particularly low; not only did it result in BT failing to recover the costs of an adjusted or unadjusted EEO between July 2008 and April 2009, it was also insufficient to even allow BT to recover its upstream interconnection costs.

6.445 In addition, our sensitivity analysis shows that BT’s prices continued to fail to recover adjusted EEO costs beyond April 2009, and that over the period July 2008 to December 2010 as a whole, BT earned a negative margin on the Wholesale Calls product as a whole, and on both [✓ Contract 1 and Contract 2].

6.446 Moreover, our analysis shows that if BT had correctly implemented a more appropriate set of assumptions in its governance modelling when bidding for its [✓] contracts it would have forecast that the aggressive pricing that it was pursuing would lead to negative margins for the Wholesale Calls product as a whole. In other words, BT could have reasonably expected to earn the negative margin that we have observed in our historical margin modelling.

6.447 Therefore, we conclude that BT failed to maintain a sufficient margin between its upstream and downstream prices such that it failed to cover downstream costs in relation to its Wholesale Calls product during the period July 2008 to April 2009, and that it could have reasonably expected this.
Section 7

Anti-competitive effects

Introduction

7.1 In this Section we consider the extent to which BT’s pricing conduct for Wholesale Calls has the potential to give rise to anti-competitive effects, or has actually led to anti-competitive effects.

7.2 Following a summary of the key points raised in this Section, we start by setting out the legal test as to what we are required to show in terms of the effect of BT’s behaviour on competition in the relevant markets in order to demonstrate that a margin squeeze has taken place. We consider that it is unnecessary to demonstrate that actual anti-competitive effects have occurred; it is sufficient for us to show that BT’s conduct has at least the potential to have anti-competitive effects.

7.3 We then go on to consider the evidence of effects in this case. We begin by summarising the provisional assessment of anti-competitive effects that we set out in the Statement of Objections, before setting out the key arguments raised by BT and other interested CPs in their responses to the Statement of Objections.

7.4 Our assessment reconsiders the provisional conclusions we set out in the Statement of Objections in light of:

(i) additional evidence on the effects of BT’s pricing behaviour that we have collected from BT, its main CPSO competitors, and other relevant parties in the period following our publication of the Statement of Objections;

(ii) the responses to the Statement of Objections received from BT and other interested parties, on the actual and potential effects of BT’s behaviour;

(iii) new data received from BT which has led us to update our conclusions on the margins earned by BT on the Wholesale Calls product; and

(iv) responses to our draft final decision from BT, C&W, Gamma and Verizon dated 31 January, in which C&W, Gamma and Verizon disagreed with our proposed view that BT’s conduct has not infringed Article 102 TFEU or the Chapter II prohibition.

7.5 We go on to explain why, having carried out the above assessment we are no longer satisfied that the evidence demonstrates that BT’s pricing conduct has the potential to give rise to anti-competitive effects. In particular, we do not have sufficient evidence to demonstrate that any of the potential effects identified in the Statement of Objections have materialised in the more than four years since BT first earned negative margins on the Wholesale Calls product. Given the time elapsed since BT’s conduct, the failure of actual effects to have materialised so far, and the reasons for this, we consider it unlikely that the effects identified in the Statement of Objections were likely to materialise, and that they are unlikely to materialise in the future.

Summary

7.6 Our provisional view in the Statement of Objections was that BT had engaged in conduct amounting to an abuse of its dominant position by virtue of its exercise of a
margin squeeze between July 2008 and April 2009. We provisionally concluded that the negative margins earned by BT had the potential to give rise to anti-competitive effects through various channels, e.g. causing equally efficient competitors to lose market share or accept lower margins, raising the costs of competitors and reducing the longer-term incentives to invest in the development of networks. Furthermore, we considered that the reputational effects associated with BT’s behaviour, particularly if left unchecked, had the potential to further chill competition in the market for wholesale end-to-end calls and could potentially spill over into other markets where BT operates.

7.7 In response to the Statement of Objections, C&W and Verizon supported Ofcom’s theory of harm and argued that BT’s conduct had already affected its rivals’ ability to compete in the downstream market.

7.8 However, BT argued that Ofcom had not adduced strong and compelling evidence of there being a realistic prospect of exclusionary effects arising from BT’s allegedly abusive conduct. BT submitted that a “realistic analysis” of the market would indicate that BT’s pricing had not generated any detrimental effect on competition in the downstream and further downstream markets, nor that it had the potential to generate any such effects in the future. BT’s view was that, to the contrary, the available evidence suggested that competition had remained strong and was unlikely to diminish.

7.9 Following these representations, we gathered additional evidence from BT and other CPs on actual market developments since the start of the alleged abusive conduct (i.e. a period of more than four years) to further inform the assessment of what was likely to happen as a result of BT’s conduct. We also reassessed the position set out in the Statement of Objections to take into account the results of the revised financial analysis set out in Section 6.

7.10 Having assessed all the evidence and arguments put to it, Ofcom considered that it was no longer able to conclude that BT’s conduct had or was likely to have an anti-competitive effect. We shared our provisional views with the Parties and, having taken their responses into consideration, we still consider that there is insufficient evidence to demonstrate that actual or potential anti-competitive effects have arisen, or are likely to arise as a result of BT’s conduct.

7.11 Our assessment suggests that competition in the market for the supply of wholesale end-to-end calls has not reduced in the more than four years since BT first earned negative margins on the Wholesale Calls product. While total volumes across the merchant market have declined since 2008, and this decline has not been evenly distributed across CPSOs, we have not seen evidence that this is a result of BT’s pricing conduct. The loss of CPS volumes would not seem to have significantly affected the CPSOs’ cost base, nor their incentives to maintain and invest in core networks. Moreover, we do not have evidence that BT’s pricing conduct gave rise to reputational effects and discouraged competitors from bidding for wholesale end-to-end call contracts.

7.12 The potential anti-competitive effects we set out in the Statement of Objections were based on the types of effect that we would typically expect to be associated with a firm earning negative margins across the downstream business as a whole. The failure of the potential anti-competitive effects to materialise in this case reflects the specific circumstances of the case. In particular, as opposed to being driven by a generalised pattern of pricing below incremental cost, the negative margins observed for July 2008 to April 2009 were driven by BT’s aggressive pricing on [Contract 1].
Absent [Contract 1], the evidence of BT earning negative margins on the Wholesale Calls product is sensitive to the time period over which we model BT’s margins. In particular, although the total product margins are negative for the 10 months ending April 2009 (principally as a result of the negative margins earned on [Contract 2]), if we extend the period modelled to July 2008 to December 2010 (i.e. 30 months) we find that the margins become positive (see Tables 6.15 and 6.23 above). Furthermore, absent [Contract 1], the margins earned on the total product are positive for each of the 18 months up to December 2010, and BT earned positive margins in April and May 2009.

7.13 Absent [Contract 1], the total product was contestable by an equally efficient operator (certainly in relation to the longer period to December 2010). For anti-competitive effects to have arisen in this case, this would be most likely in relation to [Contract 1]. On this basis, we have therefore considered the circumstances surrounding [Contract 1] to understand why anti-competitive effects have not materialised, and the ongoing potential for effects to arise.

7.14 There are specific factors in this case that suggest that the pricing of [Contract 1] has not, and is unlikely to, lead to anti-competitive effects. In summary, BT’s conduct did not risk excluding any other CPSO from winning [Contract 1] as [Company 1] was engaged exclusively in bilateral negotiations with BT and no other CPSO. The exclusive bilateral negotiations were consistent with there being no other CPSO that would have been willing to offer [Company 1] prices that it would have been willing to accept. Further, although [Company 1] is now (at least to some extent) dependent on the supply of Wholesale Calls from BT to compete in the downstream market, BT’s ability to use this dependence to pursue an exclusionary strategy is, in the normal course of events, highly restricted by the terms of the long term agreement between BT and [Company 1]. Specifically, BT’s ability to unilaterally increase prices or terminate the contract is highly limited.

7.15 For the reasons explained in Section 6, the focus for our analysis in this case is on the total Wholesale Calls product. However, we have also considered whether there are particular characteristics of [Contract 2] that warrant it being considered in isolation. In our view, although the contract is very large and the margins associated with it were negative during the period we considered, such characteristics do not exist.

7.16 In our view it is unlikely that the potential for anti-competitive effects arising from BT’s allegedly abusive pricing behaviour remain because of the following factors taken together:

- we do not have sufficient evidence to demonstrate that anti-competitive effects (including the foreclosure of any of BT’s CPSO competitors) have materialised in the period since BT began earning negative margins on the Wholesale Calls product;

- [Contract 1] drives the negative margins and the specific characteristics of that contract suggest that anti-competitive effects are unlikely to be associated with it;

- absent [Contract 1], BT has earned positive margins on the total product in each month over the period July 2009 to December 2010 (as such this portfolio of contracts was contestable by an equally efficient operator); and
• we consider that the reasons we have found which explain why no actual effects have occurred (combined with the particular circumstances of [\(\text{Contract 1}\)] ) also make it unlikely that the potential effects we identified in the Statement of Objections will occur in the future.

7.17 Therefore we are not satisfied that the evidence is sufficient to demonstrate that actual or potential anti-competitive effects have arisen, or are likely to arise as a result of BT having earned a negative margin on its Wholesale Calls product.

**The legal test for margin squeeze: the need to establish anti-competitive effect**

7.18 The case law and decisional practice of the European Courts, the European Commission and the CAT shows that in order to establish a finding of an abuse of dominance in a margin squeeze case, it is not necessary to demonstrate that there has been an actual effect on competition in the relevant markets. Rather, a competition authority needs to show that the actions of the dominant undertaking had the potential to have an anti-competitive effect.

7.19 EC jurisprudence from the General Court consistently establishes that in a margin squeeze case it is not necessary to show that the conduct has had concrete effects on the market, rather it is sufficient to demonstrate that it tends to restrict competition, or is capable of having that effect (see, for example, *Michelin II*\(^{520}\), and *Virgin/British Airways*\(^{521}\)).

7.20 In *Michelin II*, the General Court disagreed with Michelin’s arguments that the Commission should have carried out an analysis of the effects of the conduct. In its judgment the General Court stated:

“For the purposes of establishing an infringement of Article 82 EC, it is sufficient to show that the abusive conduct of the undertaking in a dominant position tends to restrict competition or, in other words, that the conduct is capable of having that effect.”\(^{522}\)

7.21 This reasoning was followed by the General Court in *Virgin/British Airways*, where it stated:

“…for the purposes of establishing an infringement of Article 82 EC, it is not necessary to demonstrate that the abuse in question had a concrete effect on the markets concerned. It is sufficient in that respect to demonstrate that the abusive conduct of the undertaking in a dominant position tends to restrict competition, or, in other words, that the conduct is capable of having, or likely to have, such an effect.”\(^{523}\)

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\(^{522}\) *Michelin II*, paragraph 239.

\(^{523}\) *British Airways plc v Commission*, paragraph 293. This was repeated again by the General Court in Case T-155/06 *Tomra v Commission* [2011] 4 CMLR 7.
7.22 In 2010, the ECJ stated in its judgment in the Deutsche Telekom case that:

“... in order to determine whether the undertaking in a dominant position has abused such a position by its pricing practices, it is necessary to consider all the circumstances and to investigate whether the practice tends to remove or restrict the buyer’s freedom to choose his sources of supply, to bar competitors from access to the market, to apply dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage, or to strengthen the dominant position by distorting competition....

The General Court therefore held in paragraph 235 of the judgment under appeal, without any error of law, that the anti-competitive effect which the Commission is required to demonstrate, as regards pricing practices of a dominant undertaking resulting in a margin squeeze of its equally efficient competitors, relates to the possible barriers which the appellant’s pricing practices could have created for the growth of products on the retail market in end-user access services and, therefore, on the degree of competition in that market.

… a pricing practice such as that at issue in the judgment under appeal that is adopted by a dominant undertaking such as the appellant constitutes an abuse within the meaning of Article 82 EC if it has an exclusionary effect on competitors who are at least as efficient as the dominant undertaking itself by squeezing their margins and is capable of making market entry more difficult or impossible for those competitors, and thus of strengthening its dominant position on that market to the detriment of consumers’ interests.”

7.23 Most recently, in TeliaSonera, the ECJ held that:

“... the Court has ruled out the possibility that the very existence of a pricing practice of a dominant undertaking which leads to the margin squeeze of its equally efficient competitors can constitute an abuse within the meaning of Article 102 TFEU without it being necessary to demonstrate an anti-competitive effect (see, to that effect, Deutsche Telekom v Commission paragraphs 250 and 251).

The case-law has further made clear that the anti-competitive effect must relate to possible barriers which such a pricing practice may create to growth on the retail market of the services offered to end users and, therefore, on the degree of competition in that market (see, to that effect, Deutsche Telekom v Commission, paragraph 252).

Accordingly, the practice in question, adopted by a dominant undertaking, constitutes an abuse within the meaning of Article 102 TFEU, where, given its effect of excluding competitors who are at least as efficient as itself by squeezing their margins, it is capable of

524 Deutsche Telekom ECJ Judgment at paragraphs 175, 252 and 253.
making more difficult, or impossible, the entry of those competitors onto the market concerned (see to that effect, Deutsche Telekom v Commission, paragraph 253).

It follows that, in order to establish whether such a practice is abusive, that practice must have an anti-competitive effect on the market, but the effect does not necessarily have to be concrete, and it is sufficient to demonstrate that there is an anti-competitive effect which may potentially exclude competitors who are at least as efficient as the dominant undertaking.

... However, in the absence of any effect on the competitive situation of competitors, a pricing practice such as that at issue in the main proceedings cannot be classified as an exclusionary practice where the penetration of those competitors in the market concerned is not made any more difficult by that practice." 525

7.24 This approach has been followed by the General Court in the Telefónica and Spain v Commission judgments. 526

7.25 It is also unnecessary to demonstrate a direct adverse effect on consumers to make out a case of margin squeeze. This was confirmed again by the ECJ in France Telecom, where it stated that Article 102 "refers not only to practices which may cause prejudice to consumers directly, but also to those which are detrimental to them through their impact on an effective competition structure". 527

7.26 In its Response, BT states that the ECJ and the European Commission have provided guidance as to the type of evidence which is generally relevant to the assessment of anti-competitive effects. BT claims that Ofcom has not properly considered this guidance. 528

7.27 BT argues that it is only appropriate for competition authorities to act on the basis of potential effects alone (i.e. in a situation where no actual effects have materialised) in order to forestall anti-competitive outcomes that would otherwise be likely to arise. Once allegedly abusive behaviour has taken place, in assessing the exclusionary effect of that behaviour, BT argues that more weight should be given to the fact that actual effects have failed to materialise, than to any potential effects which may occur. 529 BT submits that where a competition authority is considering conduct, the


527 Case C-95/04 P British Airways plc v Commission [2007] ECR I-2331 paragraph 106. This has been followed by the General Court in Telefónica at paragraph 171 and Spain v Commission at paragraphs 91 to 92; the Commission in Decision COMP/39.525 Telekomunikacja Polska at paragraphs 812 and 813, and the CAT in National Grid PLC v The Gas and Electricity Markets Authority, Case 1099/1/2/08 at paragraphs 11 and 12.

528 BT Response paragraphs D.169 to D.175.

529 BT Response paragraph D.180.
effect of which is in the past, the competition authority should in general be required to demonstrate the actual effects of that conduct. 530

7.28 In its response to the draft decision, C&W argues that Ofcom has wrongly applied the test for potential effects. It states that the correct approach must be “for the competition authority to examine what effects were capable of arising at the time the conduct was undertaken, i.e. without taking account of any unconnected events occurring afterwards”. 531 Gamma argues that Ofcom should assess the potential for anti-competitive effects from the April 2009, and not looking forward from the present. 532

7.29 BT also argues that Ofcom has not shown any harm to consumers and cannot rely on demonstrating harm to the structure of competition as a proxy for harm to consumers. 533

7.30 Ofcom considers that the case law set out above clearly shows that a margin squeeze is not a per se abuse. Ofcom is however, only required to demonstrate a potential anti-competitive effect (rather than an actual effect) and does not need to demonstrate actual harm to consumers. It would run counter to the object of the competition law provisions, which seek to maintain undistorted competition in the common market, if Ofcom was required to wait until consumers or competition were actually harmed before taking enforcement action. Given the passage of time in this case, it is, however, appropriate to take into account available evidence of what has happened in the market to inform our assessment of what was likely to happen. We have therefore considered the likely potential effects of BT’s conduct, both at the time of the alleged infringement and in the future, informed by all available evidence. 534

7.31 In this respect, we would also note that the ECJ stated in Deutsche Telekom that:

“... where a dominant undertaking actually implements a pricing practice resulting in a margin squeeze of its equally efficient competitors, with the purpose of driving them from the relevant market, the fact that the desired result is not ultimately achieved does not alter its categorisation as an abuse within the meaning of Article 82 EC. However, in the absence of any effect on the competitive situation of competitors, a pricing practice such as that at issue cannot be classified as exclusionary if it does not make their market penetration any more difficult.” 535

7.32 Having found that a company has earned negative margins consistent with a margin squeeze, Ofcom is therefore not required to demonstrate that this behaviour causes

530 BT Response, paragraph D.185.

531 CWW Response of 31 January 2013, paragraph 2.5.

532 Gamma Response of 31 January 2013 paragraph 4.

533 BT Response, paragraphs D.192 to D.198.

534 See Case T-201/04 Microsoft Corp v Commission of the European Communities [2007] ECR II-3601 paragraph 561; Telefónica paragraph 272; TeliaSonera paragraph 108; European Commission Article 82 Guidance paragraph 19 and 20; OFT Guidance 414a paragraph 6.5.

535 Deutsche Telekom, ECJ, paragraph 254.
an actual effect on competition or actual harm to consumers. Rather, it is sufficient to demonstrate that it will have a potential effect on competition. In accordance with British Airways\textsuperscript{536}, the potential barriers to effective competition resulting from any pricing practices are sufficient to indicate that there may be indirect consequences for consumers.

7.33 In addition, BT notes that in *TeliaSonera*, the ECJ established a number of circumstances in which it is probable that a margin squeeze will have had an at least potential anti-competitive effect on the market. The circumstances referred to by the ECJ are: i) where the relevant upstream input is indispensible to the provision of the downstream product; ii) where the margin squeeze has resulted in a "negative" margin; and, iii) where there was exclusionary intent. BT claims that none of these circumstances arise in this case, and so no presumption as to the likelihood of anti-competitive effect can be inferred.

(i) BT argues that in this case, the relevant upstream input is not indispensible to the provision of the downstream product. This, however, is inconsistent with other statements that BT makes in its Response. For example, BT recognises that: "it is likely that, for the foreseeable future, some regulated inputs from BT will be needed in order to provide a comprehensive UK-wide service".\textsuperscript{537} In any event, and as noted by C&W in its response to the Statement of Objections, the ECJ is clear that even where a product is not indispensible for the supply of the retail product, a pricing practice which causes a margin squeeze can have an anti-competitive effect on the market concerned.\textsuperscript{538}

(ii) BT states that it is not alleged that BT’s conduct has resulted in a “negative” margin squeeze.\textsuperscript{539} We disagree. As set out in paragraphs 6.375 to 6.379 above, our assessment of BT’s margins concludes that BT’s behaviour did result in a negative margin (whether \(<\text{Contract 1}\) is included in the product level assessment or not) between its downstream incremental costs (which include the wholesale price for BT inputs) and the price offered by BT for its wholesale end-to-end calls product. It is this negative margin which is central to Ofcom’s concerns, resulting in a detailed examination of the effect of BT’s behaviour.

(iii) BT correctly notes that Ofcom has not alleged that BT had any exclusionary intent, and so no presumption of “probable effect” should arise on that basis.\textsuperscript{540}

\textsuperscript{536} Case C-95/04 P *British Airways plc v Commission* [2007] ECR I-2331.

\textsuperscript{537} See paragraph D.172 of BT’s Response. Although, as discussed in Section 4 above, we have not needed to reach a conclusion as to the precise definition of the downstream market, we would note that even on the basis of the broader market definition proposed by BT, BT wholesale call origination is a necessary input in order for a nationwide service to be provided.

\textsuperscript{538} *TeliaSonera*, ECJ paragraph 72, and see also the General Court in *Spain v Commission* at paragraphs 91 to 92.

\textsuperscript{539} BT Response, paragraph D.172.

\textsuperscript{540} BT Response, paragraph D.172.
Our assessment of anti-competitive effects in the Statement of Objections

Introduction

7.34 In the Statement of Objections we identified four main ways in which BT’s conduct might result in potentially anti-competitive effects:

(i) a reduction in the intensity of competition, as equally efficient competitors are likely to lose market share or be forced to accept lower margins.

(ii) a weakening of the competitive constraint imposed by BT’s competitors, to the extent that their unit costs increase as their sales volumes decline;

(iii) a reduction in the incentives for equally efficient competitors to make investments in expanding and maintaining their core networks in competition to BT, resulting from lower expected margins and sales volumes; and/or

(iv) potentially high barriers to entry or expansion, as entry in the market for the provision of wholesale end-to-end calls requires significant sunk costs and BT’s conduct may lead to reputational effects, which would risk dampening CPSOs’ incentives to compete against BT in the wholesale end-to-end calls market as well as, potentially, in other markets.

7.35 The following sub-sections summarise our analysis in the Statement of Objections for each of these potential anti-competitive effects. We then consider the representations made by BT and other respondents in response to the Statement of Objections and our draft final decision, before setting out our final analysis of anti-competitive effects.

Reduction in the intensity of competition

7.36 In principle, a margin squeeze is likely to result in equally efficient competitors losing market share as they would be unable to match the prices offered by the dominant firm without incurring losses. This may lead to equally efficient competitors being foreclosed from the downstream market or being forced to reduce the scale of their operations. Alternatively, equally efficient competitors might instead choose to match the prices (embodying negative margins) offered by the dominant company and suffer low margins as a result. If the loss of margins is sufficiently large, a competitor may have to reappraise the viability of remaining in the market.

7.37 In the Statement of Objections, we considered that BT’s pricing of its Wholesale Calls product might lead to competition being diminished or distorted. We noted that the negative margin earned by BT may have a direct impact on competition if it caused: i) a reduction in the number of effective competitors in a market; or ii) if it caused those competitors that remain to compete less intensively with the dominant firm. We considered, alternatively, that a competitive impact may be indirect, distorting the process of competition, as the most efficient firms in the market may not secure the highest market share. Both direct and indirect anti-competitive effects could result in a loss of economic efficiency and, in the longer run, an increase in prices to resellers.
7.38 We took the view in the Statement of Objections that there was a likelihood that BT’s conduct had the potential to generate such effects. This view was based on three main factors:

(i) A significant increase in BT’s market share at the expense of competitors. BT’s market share increased from [扩大至 21-30%] in April 2008 to [扩大至 61-70%] in April 2009. The shares of its main competitors fell from [扩大至 11-20%] to around [扩大至 5-15%] in the same period.

(ii) A reduction in average margins over interconnection costs (typically by [扩大至 0-10%])\(^{541}\) to between [扩大至 0-10%] and [扩大至 11-20%].\(^{542}\)

(iii) The change in the position of some competitors in the downstream market. THUS was acquired by C&W and [扩大至 Company 1] switched to using BT Wholesale Calls for [扩大至 certain call types]\(^{543}\) (rather than [扩大至])\(^{544}\).

7.39 We provisionally took the view that the combination of falling volumes and falling average margins over interconnection costs had the potential to significantly affect the overall profitability of CPSOs and cause them to re-appraise the viability of remaining in the market.\(^{545}\) We additionally concluded that BT’s winning of [扩大至 Contract 1] \(^{546}\).

7.40 In light of the above, we expressed concerns that the significant increase in market concentration would lead to a reduction in competition between the suppliers of core networks. However, we considered that BT’s ability to exploit its position in the wholesale end-to-end calls market was likely to be constrained to some extent by the countervailing buyer power of some resellers and, in the short and medium run, the relatively low barriers to expansion (see discussion in paragraphs 7.59 to 7.72 below).

**Weakening of constraints imposed by competitors**

7.41 In principle, a margin squeeze can give rise to anti-competitive effects by raising competitors’ costs, thereby weakening their ability to exert a competitive constraint on the dominant firm.

7.42 We identified that core networks are characterised by economies of scale, and that a CPSO could achieve significantly lower unit and marginal costs by increasing the

\(^{541}\) The exception was [扩大至], which witnessed a more modest decline of approximately [扩大至 0-10%].

\(^{542}\) This margin needs to cover a contribution to the costs of providing a core network, CPS migration charges, sales and marketing, other non-network costs of wholesaling end-to-end calls and the cost of capital employed.

\(^{543}\) [扩大至 Company 1] continued to use its own network to supply [扩大至 certain call types].

\(^{544}\) [扩大至].

\(^{545}\) We acknowledged, however, that the data on margins needed to be interpreted cautiously and that the loss of market shares and margins could simply be the result of increased price competition, rather than anti-competitive pricing.

\(^{546}\) We noted, however, that [扩大至 Company 1]’s network was still largely in place, and that interconnectivity at DLEs as well as at all of [扩大至 Company 1]’s ISIs and IECs had been retained.
volume of calls that are conveyed over its network and optimising its interconnection with BT.

7.43 BT supports interconnection at two layers in its network – the local exchange layer ("DLE") and the tandem layer. Interconnection at the DLE only supports traffic to and from that DLE but avoids the payment of local to tandem conveyance ("LTC") charges which would be incurred for traffic handed over at the tandem layer.

7.44 DLE interconnection involves the CPSO incurring significant sunk costs but allows calls to be conveyed at a zero short-run marginal cost.\(^{547}\) Therefore, direct interconnection to a DLE is more likely to be cost efficient for a CPSO with sufficient traffic volumes to that DLE. The average conveyance cost may also be reduced provided call volumes are sufficiently high.

7.45 Conversely, when call volumes are expected to be low, it is more likely to be cost efficient for a CPSO to connect with BT's network at the tandem layer and then purchase LTC from BT to convey the call from the DLE to the tandem. As LTC is charged on a pence per minute basis, low scale network operators who use LTC will have higher marginal costs than their high volume rivals.\(^{548}\)

7.46 A CPSO's network costs are also affected by the utilisation of interconnection circuits. Higher utilisation enables CPSOs to achieve lower costs. Furthermore, standard traffic theory\(^{549}\) indicates that, for a given grade of service, a higher utilisation can be achieved on larger routes.\(^{550}\) It follows that it is more cost efficient for a CPSO to implement larger routes, and gain higher utilisation over those routes.\(^{551}\)

7.47 Therefore, a CPSO will be able to interconnect at all (or a majority of) the DLEs, and thereby minimise its marginal costs, only if it has sufficient traffic volumes and can achieve a high enough utilisation to justify each route. Otherwise, if its traffic volumes are not sufficient, it would be more efficient for the CPSO to interconnect at few DLEs and instead connect at the tandem exchanges so that it has fewer, larger routes.

7.48 If an equally efficient competitor loses significant call volumes, in the short-run it is likely to maintain its existing network configuration as most costs are fixed. There are therefore no immediate cost savings from changing network configuration. The competitor may also take a strategic decision to maintain its existing network capacity to give itself the opportunity to regain its market share. In the short-run, average unit

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\(^{547}\) Connecting at the DLE will also enable the CPSO to purchase CPS SAD, further reducing its costs.

\(^{548}\) We explained that the average cost of LTC was 0.0792 ppm, which was approximately 6% of an equally efficient competitor's cost stack. A CP that interconnects at the tandem layer only would need to make two LTC payments of 0.0792 ppm each (one from the originating DLE to the tandem, and another from the tandem to the terminating DLE).

\(^{549}\) Standard traffic theory uses the Erlang B distribution function to calculate blocking probability based on offered traffic and number of simultaneous calls that can be supported.

\(^{550}\) For example, a single 2Mbit/s circuit (which allows 30 calls to be carried at the same time) will, on average, block one call attempt in 100 if it is utilised at 67%, whereas four 2Mbit/s circuits (120 simultaneous calls) will, on average, block one call attempt in 100 if it is utilised at 85%.

\(^{551}\) As expected volumes and capacity increases, the variance of call volumes declines, which allows a CPSO to run at a higher utilisation rate for the same level of quality.
costs are therefore likely to increase as the same level of fixed costs are recovered from fewer minutes. However, marginal costs are unlikely to change significantly.

7.49 In the medium run, an equally efficient competitor may choose to make unit cost savings by re-configuring its network to bring it into line with a lower expected level of call minutes. The action taken is likely to depend on the magnitude of the volume loss.

7.50 For small reductions in volumes, a competitor is likely to maintain its DLE interconnectivity but reduce the size of its routes. Should a competitor lose more significant volumes, it may no longer be cost efficient for that CPSO to interconnect with BT at the DLE level, and it may instead choose to interconnect at the tandem layer, where it then has to pay for LTC on a pence per minute basis. This would negatively affect both marginal and average interconnection costs.

7.51 In the Statement of Objections we noted that, by failing to earn a positive margin on its Wholesale Calls product BT had caused equally efficient competitors to lose sales volumes. We considered that, given the economies of scale inherent in DLE connectivity and circuit utilisation, a loss of sales volumes had the potential to cause long term increases in both the marginal and average costs of BT’s competitors. We explained that, to the extent that marginal and average costs for BT’s competitors would increase, price competition in the market for wholesale end-to-end calls was likely to be dampened. This would ultimately result in higher prices to end-consumers in the long run.

7.52 The evidence available at the time of the Statement of Objections, however, suggested that CPSOs had chosen to maintain the size and shape of their existing network as their volumes declined, rather than taking out capacity. We considered the main reasons for this were:

- While volumes had declined, for the most part they had not declined to the level where it becomes more cost efficient to interconnect at the tandem layer (this was partly driven by the impact of CPS SAD on costs);
- Some CPSOs, such as [\text{\ldots}], have a network that is primarily configured to serve their broadband business. For these CPSOs, a reduction in the volume of wholesale end-to-end calls would generally have a limited impact on their choice of network size and shape;
- As there are significant sunk costs in removing interconnection circuits and then adding them again at a later date, some CPSOs, such as [\text{\ldots}], were likely to have chosen to retain their network in the expectation that demand from other traffic streams would gradually replace the lower wholesale end-to-end call volumes; and

\footnote{We explain in footnote 279 (paragraph 6.44) why we consider economies of scale in this market to be more relevant to BT’s competitors than to BT.}

\footnote{We acknowledge that BT may have conflicting incentives here. While higher downstream prices are likely to increase downstream profits, they may also lead to BT earning lower profits upstream to the extent that higher downstream prices reduce the demand for BT wholesale call origination and termination.}
- Interconnecting at the DLE allows CPSOs to be eligible for SAD.\textsuperscript{554}

7.53 As CPSOs had chosen in general to maintain their DLE interconnectivity they had not incurred additional LTC costs. In practice therefore we found no evidence of short-run marginal costs increasing, although we were concerned that this could change in the future were volumes to drop further.

7.54 However, given that CPSOs (for the most part) had maintained the number of interconnect circuits but had lost volumes, we noted in the Statement of Objections that average costs of interconnect circuits (particularly those provided via IECs) were likely to have increased. However, our view was that the effect was likely to be limited.\textsuperscript{555}

\textbf{Reduction in the incentives to invest}

7.55 A key factor in the investment decisions that firms make is the expected return that the firm will earn on that investment. All things being equal, the lower the expected market prices for services, the lower the expected return and, therefore, the lower the incentive for the firm to invest.

7.56 Where prices are low but reflect the competitive level, the reduced incentive for firms to invest may encourage efficient levels of investment. Specifically, if the market price is competitive and does not support additional investment, the pricing signals provided to firms will incentivise them not to engage in investment that may be inefficient.

7.57 However, where low prices arise from sustained pricing below long-run incremental cost (as is the case with a margin squeeze), the reduced incentives for firms to invest in new technologies or capacity may lead to inefficient investment outcomes. Specifically, the low prices may prevent investment that would have been feasible if prices had been set at the competitive level.

7.58 Our concern in the Statement of Objections was therefore that BT’s conduct, by earning negative margins and distorting prices, had the potential to give rise to an (inefficient) under investment in new technologies. This could prevent or delay the emergence of networks to rival BT’s, and the associated dynamic competition, which in turn could result in both higher costs to industry (if innovations are deterred or delayed) and higher prices for end-consumers.

\textbf{Increase in barriers to entry or expansion}

7.59 The extent to which prices to resellers could rise in the future following a margin squeeze depends, in large part, upon the extent to which there are barriers to entry or expansion that prevent CPs from competing to supply resellers.

7.60 Our analysis in the Statement of Objections considered different types of possible barriers that were relevant in this case:

\textsuperscript{554} See paragraphs A4.57 to A4.62 for an explanation of CPS SAD.

\textsuperscript{555} For example, BT’s two largest competitors at the time, C&W and Gamma, witnessed a drop in sales volumes of approximately [\(\leq 10\%-20\%\)] between March 2008 and March 2009. Assuming an average length IEC and a prior utilisation rate of 75\%, we estimated that the lost volumes would increase average costs by [\(\leq\)], which was just over 0.1\% of a CPSOs cost stack at that time.
(i) barriers to entry or expansion arising from the reputational effects of a margin squeeze;

(ii) barriers to new entry\footnote{These depend upon whether a CPSO seeks to compete by operating a complete core network of their own, or through contracting with third parties to provide access to core networks. We analysed each of these extremes in turn, while recognising that many CPSOs obtain their core network requirements through a mix of self-supply and third-party purchases.}; and

(iii) barriers to expansion for CPSOs who are already active in the market.

**Barriers to entry or expansion arising from reputational effects**

7.61 Barriers to entry or expansion can result from a vertically integrated firm establishing a reputation for responding aggressively and selectively to entry or expansion through anti-competitive behaviour.\footnote{Such an effect was, for example, considered by the OFT in its *Cardiff Bus* abuse of dominance investigation (Case CA98/01/2008), available at \url{http://www.oft.gov.uk/OFTwork/competition-act-and-cartels/ca98/decisions/cardiffbus}.} These reputational effects can arise in the market upon which the margin squeeze occurs, and more widely across the range of markets in which the vertically integrated firm operates.

7.62 The Statement of Objections noted that reputational effects were a concern in the present case. We considered that BT’s pricing behaviour had the potential to deter CPSOs from competing, by making them less willing to incur the costs associated with bidding for contracts that they were less likely to win than if BT had not adopted such pricing conduct. We observed that this could give rise to reduced incentives for future investment in the development of competing networks. We were also concerned that the reputational effect arising from BT’s pricing conduct in the wholesale end-to-end calls market could spill over into other markets in which BT competes, and deter BT’s competitors from competing in those markets too.

**Barriers to entry to wholesaling using third parties to supply access to core networks**

7.63 In the Statement of Objections we took the view that there were unlikely to be substantial entry barriers to providing wholesale end-to-end calls when using third parties to provide network access. A CPSO would be able to obtain wholesale inputs through a mix of purchases from BT at regulated prices, and purchases from BT and other CPs on the open market.

7.64 We explained that entry may occur in several ways in this market. The costs associated with each mode of entry, however, depend upon the extent to which the potential entrant is interconnected to BT’s network:

(i) Where the CPSO has limited interconnection to BT but has, nevertheless, a few ISIs in place, it could continue to use its existing circuits to interconnect at the tandem exchanges. Alternatively, it could purchase IECs and combine them with the ISIs to terminate at some DLEs or it could purchase a third party transit solution.\footnote{These two options would involve some relatively low sunk costs involved in purchasing these circuits.} The CPSO would also face some sunk costs associated with retailing and marketing a wholesale end-to-end calls product,
though these are likely to be relatively low and are unlikely to represent a significant barrier to entry.

(ii) If the CPSO has no interconnect to BT deployment of ISI is expensive and would be a barrier to entry. The entrant could use CSI,\textsuperscript{559} which would reduce upfront cost but would result in a higher per circuit annual rental and interconnect would most likely be to BT tandem exchanges. Alternatively, the entrant could use a transit service provider.

7.65 In light of this analysis, we took the view that barriers to entry to the wholesale end-to-end calls market without owning a core network were unlikely to be significant. However, we also noted that a CPSO relying on this mode of market entry would be likely to face higher costs than BT and would therefore be unlikely to be as efficient as BT. Our view was therefore that, while the threat of entry from suppliers using third-party access would cap the price that a hypothetical monopoly supplier of wholesale end-to-end calls could charge, it was unlikely to limit that supplier to charging the competitive price.

Barriers to entry for vertically integrated wholesalers

7.66 The barriers to entry to providing a core network are significant. Such entry requires either the construction of new infrastructure or the purchase or lease of existing infrastructure from CPs with excess capacity or who are seeking to exit the market.

7.67 As noted in Section 4 above, constructing a new core network requires very significant sunk costs and time to complete. It is unlikely to be economically viable for a CP to construct a full core network connected to all, or even the majority of BT’s DLEs, for the purpose of entering the calls market. This is for three main reasons. First, calls are a relatively low value product compared to the cost of network provision and so some certainty of substantial future volumes are needed to justify investment. Second, the market shares of wholesale end-to-end calls are to a large extent contestable, increasing the risks of any capital investment. Third, the industry has been characterised by an excess of network capacity since 2004. The evidence available at the time of the Statement of Objections also indicated that investment in core networks had hitherto been driven more frequently by demand for data and other value added services often aimed at the corporate market.

7.68 In addition to building a core network, a CPSO would also need to connect the network to BT’s network (and those of other CPs) in order to originate and terminate calls,\textsuperscript{560} and pay the associated costs (see description at paragraphs 7.41 to 7.50).

\textsuperscript{559} Customer Site Interconnection (“CSI”): CSI does not require any infrastructure build by the CPSO. Instead, BT builds to the CPSO’s site. Once the build is complete, the CPSOs can use this BT-provided infrastructure to interconnect to other BT exchanges.

\textsuperscript{560} The process for establishing interconnection to BT is set out in the BT Interconnect Agreement. The customer would need to provide Advanced Capacity Orders (“ACOs”) showing a (contractually binding) forecast for the following quarter. If BT accepts the ACO (it may be rejected for capacity reasons) the CPSO would need to order at least 80% of the forecasted circuits. If it does not order sufficient circuits it can be charged for the deficit. The CPSO would need to provide resources to support interconnect testing and turn-up with BT and would need to order, and pay for, Data Management Amendments (“DMAs”) to change BT’s routing data at the DLEs. Therefore, entering the market if a CPSO does not have DLE interconnection is not a trivial task.
We concluded that barriers to entry through investing in network infrastructure were relatively high, in light of the substantial sunk costs and the risks associated with undertaking such investments, and given the low value of the product, the contestability of market shares and the levels of excess capacity at the time. We were of the view that the threat of this type of entry was unlikely to exert a significant competitive constraint on the price of wholesale end-to-end calls.

Barriers to expansion

In the Statement of Objections we noted that, while the structure of the wholesale end-to-end calls market had become progressively more concentrated, BT’s rivals had generally retained their network capacity. We therefore concluded that the existence of any significant barriers to them competing with BT for future contracts in the short to medium run was unlikely, because of the significant amount of spare capacity they would have available if their volumes increased.

We also noted that some CPs, such as [X Company 1], who retained their DLE interconnectivity but reduced the size of their network, may have needed to rent additional E1 circuits in order to compete for a large new contract. However, information gathered from [X Company 1] during the course of the investigation suggested that these costs represented approximately 5% of the value of [X Company 1]’s annual purchases of Wholesale Calls from BT. We therefore came to the conclusion that those costs were unlikely to constitute a significant barrier to expansion.

However, we explained that barriers to entry were likely to become much more significant in the longer run, particularly in case of a progressive reduction of the surplus capacity on CPSOs’ networks. In that case, expansion would only be possible by making sunk investment in network infrastructure. We therefore concluded that a sustained margin squeeze was likely to cause CPSOs to choose to exit the market or fail to make the necessary investments in network capacity to remain an effective competitor.

BT’s response to our assessment

Overview

In its Response to the Statement of Objections, BT argues that Ofcom has not adduced strong evidence that there is a realistic prospect of exclusionary effects arising from BT’s allegedly abusive conduct. BT argues, instead, that it faces strong competition on the downstream and further downstream markets, and this is unlikely to diminish. It also argues that its conduct does not have the potential to generate anti-competitive effects in the future.

Furthermore, BT argues that, even if any of its rivals were foreclosed from the market, this could not result in any harm to consumers, in light of the indirect competitive constraints that operate on the wholesale end-to-end calls market.

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561 [X Company 1] told Ofcom that its estimated total costs of expanding supply to meet its internal needs were approximately £[X] million per annum. [X].

562 Estimate based on [X Company 1]’s purchases of Wholesale Calls between November 2008 and April 2009 according to data provided by BT in response to a section 26 Notice dated 1 July 2009.
In the following subsections we first set out BT’s arguments in relation to the significance of [X< Contract 1 and Contract 2] for the assessment of anti-competitive effects. We then summarise BT’s views on the four types of anti-competitive effects that Ofcom identified in the Statement of Objections as potentially flowing from BT’s conduct.

**BT’s views on the significance of [X< Contract 1 and Contract 2]**

**Introduction**

7.76 In its Response, BT observes that [X< Contract 1 and Contract 2] receive a specific focus in Ofcom’s analysis because of their relative size compared to the remainder of Wholesale Calls contracts, and the particularly low margins BT made on those two contracts.

7.77 BT submits that Ofcom’s focus on [X< Contract 1 and Contract 2] is not justified, as our designation of these two contracts as “competition enablers”\(^{563}\) is flawed. Specifically, BT argues that, in this case, it is not true that there are substantial economies of scale such that, by winning these contracts, it could deny a new entrant the opportunity to achieve minimum efficient scale. BT provides two reasons. First, BT’s primary competitive constraint came not from potential entrants but from established players. Second, those players were already operating above the minimum efficient scale and their costs were either sunk or scalable, so they were unlikely to achieve significant further economies of scale by increases in volumes.

7.78 In the following paragraphs, we present BT’s arguments in relation to the lack of anti-competitive effects associated with the pricing of [X< Contract 1 and Contract 2].

**[X< Contract 1]**

7.79 BT argues that its pricing of [X< Contract 1] is largely irrelevant to Ofcom’s assessment of exclusionary effects because of the intrinsic differences of this contract compared to any other Wholesale Calls contract. As a consequence, BT’s view is that [X< Contract 1] should be excluded from Ofcom’s analysis of effects.\(^{564}\)

7.80 BT makes three main points in relation to [X< Contract 1]:

- [X< Company 1] differs from BT’s other customers and purchased Wholesale Calls for a different purpose;
- [X< Contract 1] could not have any exclusionary effects, either in respect of third party CPSOs or in respect of [X< Company 1] itself;
- The contract generated pro-competitive effects, in that it eliminated the need for [X< Company 1] to make inefficient, and potentially short lived, investments in TDM capacity, and therefore enhanced [X< Company 1]’s ability to compete in the downstream and further downstream markets.

7.81 We set out BT’s arguments in detail in the paragraphs below.

\(^{563}\) Statement of Objections, paragraph 6.30.

\(^{564}\) BT also argues that [X< Contract 1] should be excluded from the financial analysis. However, for the reasons discussed in Section 6, we do not consider that this is appropriate.
The [Company 1] deal has unique characteristics compared to any other Wholesale Calls contract

7.82 BT states that the [Company 1] deal should be treated differently for the purposes of Ofcom’s margin squeeze analysis because it differs from any other Wholesale Calls contract in two main respects.

7.83 [Company 1].

7.84 [Company 1].

7.85 [Company 1].

7.86 [Company 1].

7.87 [Company 1].

[Contract 1] is not exclusionary, either in respect of third party CPSOs or in respect of [Company 1]

7.88 [Company 1]. [Company 1].

7.89 [Company 1].

7.90 [Company 1]. [Company 1].

7.91 [Company 1].

7.92 BT observes that there is no evidence of [Company 1] being excluded, or partially excluded, from the market. [Company 1].

7.93 BT denies that the Wholesale Calls deal has the potential to ever generate exclusionary effects on [Company 1]. It notes that the contract is effectively open-ended [Company 1]. BT argues that its inability to unilaterally terminate the contract means that there is no prospect of BT being able to foreclose [Company 1] from the downstream market by removing its supply [Company 1].

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565 BT Response, paragraph B.95.

566 BT Response, paragraph B.91.

567 BT Response, paragraph B.98. BT refers to comments made by [Company 1] during a meeting with Ofcom on 25 November 2008: “[Company 1]”


569 BT Response, paragraph B.101.

570 BT Response, paragraph B.100 and [Company 1] response to Q32, August 2009 section 26 Notice.

571 See paragraphs 3.45 and 3.46 for an explanation of the circumstances in which BT can terminate the contract.
**[× Contract 1] produces pro-competitive effects**

7.94 BT submits that the economic consequences of [× Contract 1] are actually pro-competitive. By purchasing Wholesale Calls from BT rather than [×], [× Company 1] has been able to "[×]". As a consequence, the net effect of the deal has been that BT, by giving [× Company 1] the option to use BT's network at a low cost for an indefinite period of time, "will have enhanced its ability to compete" for as long as [× Company 1] needs, and not only against other CPSOs but also against BT itself.

**[× Contract 2]**

7.95 In its Response, BT denies that it won [× Contract 2] by reason of anti-competitively low prices. In BT’s view, Ofcom has made two material errors in its assessment of the exclusionary potential of BT’s pricing of [× Contract 2]:

- BT did not win [× Contract 2] on the basis of price, but on the basis of the superior quality of its Wholesale Calls product; and
- [× Contract 2], on a proper analysis, did not make a negative margin. As such, the contract did not have any exclusionary potential.

7.96 The paragraphs below set out BT’s arguments in more detail.

**BT did not win [× Contract 2] on the basis of price**

7.97 BT argues that Ofcom has not properly investigated the factual circumstances of the [× Company 2] bid, and has instead formed its views on the basis of [×]'s one-sided and misleading account of the negotiations. As a consequence, Ofcom has failed to recognise that [× Contract 2] was won on merit and independently of any issue of price.

7.98 BT argues that, in light of the information provided to Ofcom by [× Company 2] during the investigation, it is clear that none of the competing wholesale end-to-end calls suppliers were viewed by [× Company 2] as credible alternatives to BT. [×].

**BT’s pricing of [× Contract 2] was not below cost**

7.99 As discussed in Section 6, BT also disputes Ofcom’s finding of a negative margin in relation to [× Contract 2], and submits that, once the correct approach to the financial analysis is adopted, it becomes evident that BT won the contract "at a price that could have been matched, profitably, by an equally efficient competitor".

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572 BT Response, paragraph B.102.
573 BT Response, paragraph B.102.
574 BT Response, paragraph B.138.
575 BT Response, paragraph B.79(2).
576 BT Response, paragraph B.152.
BT’s views on the potential effects identified by Ofcom in the Statement of Objections

7.100 As discussed in paragraph 7.34 above, Ofcom identified four types of potential effects that might arise as a result of BT having earned a negative margin on its Wholesale Calls product between July 2008 and April 2009. In the following paragraphs we set out BT’s views in relation to each of these potential effects.

Reduction in the intensity of competition

7.101 In its Response, BT argues that Ofcom’s theory of harm in relation to the potential effects of BT’s negative margin on the intensity of competition in the downstream market is incorrect and unsupported by evidence. BT claims that, to the contrary, the available evidence indicates that competition in the supply of wholesale end-to-end calls remains intense. The following paragraphs summarise BT’s arguments.

7.102 We have taken BT’s Response into account in reaching our conclusions. For the purposes of this decision it was not necessary to respond in detail to every point raised, but where relevant, we address points made in their Response below.

Market shares and concentration

7.103 BT does not dispute Ofcom’s finding of increased concentration in the market for the supply of wholesale end-to-end calls in the period July 2008 to April 2009. However, it does argue that, in this market, market shares cannot be relied upon as an indicator of the intensity of competition. Specifically, BT contends that if one supplier in a market increases its market share and the market shares of its rivals are reduced, this “fact taken in isolation does not imply that those rivals are likely to be foreclosed from the market or that competition will be any less intense”.577

7.104 In fact, BT suggests that “the supply of wholesale end-to-end calls, at least to major customers, has many of the characteristics of a bidding market in which market shares at any point in time say very little about the conditions of competition. In bidding markets it is possible for one player to have a very high share while the market remains highly contestable by a number of players. In bidding markets market shares can swing very rapidly, and this would be the case for wholesale end-to-end calls if, for example, a CP other than BT were to win one or two large contracts (e.g. [X Contract 2] when it is next tendered)”.578

Margins

7.105 In response to Ofcom’s observation that nearly all CPSOs have seen their average margins over interconnection costs decline since the start of BT’s aggressive pricing, BT submits that this is “due not only to greater competition between BT and other CPSOs, but also due to constraints from competition from MPF based services and IP Voice Services, and the indirect constraints of cable, mobile and IP Voice Services, VOB and VoIP supplied on the further downstream market”.579 In other

577 BT Response, paragraph D.224.

578 BT Response, paragraph D.227.

579 BT Response, paragraph D.241.
words, BT argues that the decline in margin is entirely consistent with more intense price competition.

7.106 In this respect, BT submits that Ofcom has failed to distinguish between a reduction in margins to levels that would be unprofitable for CPSOs, and a reduction in margins to levels that are consistent with aggressive but legitimate competition and, as such, are beneficial to consumers.580

Market exit

7.107 BT submits that there has been no exit in the three years since the start of its alleged anti-competitive conduct.581 In addition, BT considers that Ofcom’s characterisation in the Statement of Objections of THUS and [خطوط Company 1] as examples of, respectively, exit and partial exit is not correct.

7.108 With respect to THUS, BT notes that THUS is still active as a separate brand following the merger with C&W, and that the constraint imposed on BT by these two CPSOs has increased rather than decreased. BT notes that neither Ofcom nor the OFT considered that the merger would have a weakening effect on competition in the supply of wholesale end-to-end calls at the time that they examined the merger; on the contrary, the OFT noted that “a number of third party respondents were of the view that the merger would increase rivalry to BT, a view that was provisionally endorsed by the OFT itself”.582

7.109 With respect to [خطوط Company 1], which is discussed in more detail at paragraphs 7.243 to 7.247, BT argues that the evidence available clearly demonstrates that [خطوط Company 1] is still actively competing for wholesale end-to-end calls contracts. Furthermore, BT submits evidence of “a substantial number of bids [that BT has] lost to [خطوط Company 1], including [خطوط] since November 2009 ([خطوط]).”583 BT also disagrees with Ofcom’s suggestion that [خطوط].584

7.110 BT concludes that, since there is no evidence of exit and the same competitors that were active in the market at the time that [خطوط Contract 2] was won by BT are likely to be active in the market when [خطوط Contract 2] is re-tendered, it cannot be argued that “the prices charged by BT between July 2008 and April 2009 have harmed the structure of competition or are likely to do so in the future”.585

CPSOs’ ability to compete

7.111 BT claims that, contrary to Ofcom’s concerns, the market has remained competitive since the start of BT’s aggressive pricing conduct. BT provides the following evidence to support this claim.

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580 BT Response, paragraph D.241.
581 BT Response, paragraph D.228.
582 BT Response, paragraphs D.231 and D.232.
583 BT Response, paragraph D.229.
584 BT Response, paragraph D.230.
585 BT Response, paragraph D.234.
7.112 First, BT submits that, over the period, BT’s competitors appear to have expanded both in terms of the reach of their networks (measured by the number and percentage of DLEs to which they are interconnected) and the number of CPS reseller customers of wholesale end-to-end calls (measured by the number of accounts)\(^{586}\) (see Table 7.1 below).

Table 7.1: Number of DLEs to which CPSOs are interconnected and number of accounts, as at January 2009 and October 2010

\[\times\]

Source: Table 1 (page 248) of BT’s Response to the Statement of Objections, June 2011

7.113 Second, BT submits that it continues to face strong competition from C&W/THUS, Gamma, Opal and several other communications providers. BT claims that “BT’s rivals in this market operate profitably and continue to win bids, including from BT’s customers and at prices below the price floor that Ofcom would like to impose on BT”.\(^{587}\)

7.114 BT claims to have lost around \([\times]\) wholesale end-to-end calls bids to various competitors since January 2007. It believes that, at least in some cases, competitors won contracts at prices that were significantly lower than BT’s allegedly abusive prices. BT provides the example of \([\times]\) (which purchases wholesale end-to-end calls from multiple CPSOs, including BT, C&W, Gamma and others), \([\times]\) (one of the contracts we identified in the Statement of Objections as having a negative margin, but which was subsequently won by Gamma in 2009), and \([\times]\) (another contract on which we identified a negative margin). According to BT, a number of its competitors offered prices lower than Ofcom’s proposed EEO floor when bidding for those contracts.\(^{588}\)

Weakening of constraints imposed by competitors

7.115 BT agrees with Ofcom that circuits connecting CPSO switches to BT are characterised by economies of scale. However, BT argues that, once interconnect circuits have been laid, their costs are sunk. As a consequence, “from an accounting perspective, it may be that greater traffic volumes will reduce the average costs of these circuits, but, from an economic perspective (which is the correct perspective when considering effects on competition), once these circuits have been laid, the short, medium and long run costs of using them are close to zero.”\(^{589}\) This implies that, from an economic point of view, a reduction in call volumes does not affect CPSOs’ average operating costs and their ability to compete with BT on price.

7.116 As a consequence, BT argues that falling volumes could only, in principle, affect entry or expansion decisions. However, BT’s view is that, in practice, neither of those effects would have had an impact on competition:

- With respect to entry decisions, BT suggests that at the time of the alleged anti-competitive behaviour “there was already in place a sufficient number

\(^{586}\) BT Response, paragraph D.236.

\(^{587}\) BT Response, paragraph D.237.

\(^{588}\) BT Response, paragraph D.237.

\(^{589}\) BT Response, paragraph D.255.
of competing core networks such that potentially reduced incentives by entrants to invest in core networks would not matter for competition\textsuperscript{590};

- With respect to expansion decisions, BT argues that, as all of the major CPSOs had significant spare capacity (as a result of the general decline in traffic volumes since 2004), they were “already able to make use of those networks at effectively zero cost, and, because those network were sunk, any reduction in call volumes would not have affected the economic cost of those networks or the CPSOs’ ability to compete with BT on price” \textsuperscript{591}

7.117 BT additionally makes a number of representations in relation to interconnection circuits, arguing that Ofcom’s discussion of those “does not provide strong or compelling evidence of a likely adverse effect on competition or consumers” \textsuperscript{592}

7.118 First, BT agrees with Ofcom that the lack of reduction in DLE interconnection by CPSOs means traffic volumes must be still sufficient to make DLE interconnection economic.\textsuperscript{593} However, BT notes that the volumes that are relevant for the economics of DLE provision (and other network costs) are not solely CPS traffic volumes, “but also other traffic volumes that will share the interconnection capacity, including NTS origination and geographic call termination traffic”.\textsuperscript{594}

7.119 Second, BT argues that average (economic) costs of DLE interconnection are not affected by falling volumes. Once a CPSO has decided to connect at the DLE level, the strategic decision it takes is how much capacity to put in place itself to a POC with BT and how much to rent from BT or from third parties.\textsuperscript{595} BT argues that:

(i) Where a CPSO has laid its own interconnection capacity, this capacity is effectively sunk: it would not be economic for CPSOs to remove it, even if it is unused. As for circuits connecting CPSO switches, BT argues that “falling volumes will not significantly increase the average economic costs of this sunk capacity and will not raise rival’s costs in an economic sense”.\textsuperscript{596}

(ii) Where instead CPSOs rent DLE interconnection capacity from BT or from third parties\textsuperscript{597} (upon payment of a connection fee and annual rental fees), this capacity is highly scalable to traffic volumes. As a consequence, if volumes were to fall CPSOs would be able to cut costs by reducing the number of circuits they are connected to, thereby ceasing to be liable for the associated rental charges (the connection fee may also be refunded,

\textsuperscript{590} BT Response, paragraph D.256.
\textsuperscript{591} BT Response, paragraph D.257.
\textsuperscript{592} BT Response, paragraph D.258.
\textsuperscript{593} BT Response, paragraph D.261.
\textsuperscript{594} BT Response, paragraphs D.260 and D.261.
\textsuperscript{595} BT Response, paragraph D.262.
\textsuperscript{596} BT Response, paragraph D.263.
\textsuperscript{597} BT argues that Ofcom has failed to consider that CPSOs may purchase interconnection capacity from third parties (and not just from BT), and that this can lower costs on certain routes.
depending on how long the circuit has been provided for). As the circuits in 
question are 2Mbit/s circuits that can carry almost 30 calls simultaneously,
capacity could be easily scaled back. Again, therefore, BT argues that 
decreasing volumes would not affect CPSOs’ average costs. The only 
circumstance in which economies of scale might be lost and average costs 
might rise would be if all traffic types over a DLE fell to less than the full 
capacity of a single 2Mbit/s circuit.

(iii) While not disagreeing with standard traffic theory, BT claims that it is of little 
relevance in practice, given the evidence that volumes have remained 
sufficient for a large number of CPSOs to justify interconnection at a large 
number of DLEs.598

7.120 BT finally notes that any discussion of core and interconnect networks has to take 
into account the fact that “the significant investments made by network operators in 
new IP networks have resulted in significant reductions in operating costs for them 
and the ability to drive network efficiencies as a result of being able to run multiple 
services over the same networks”.599 In other words, BT submits that, with voice 
services increasingly becoming one of many data applications, “pure voice-related 
interconnection costs will become less relevant”.600

7.121 In conclusion, BT disagrees with Ofcom’s analysis because, in BT’s view, the 
economies of scale inherent in DLE interconnectivity and circuit utilisation are not 
relevant. BT argues that “while there is hypothetically always the potential for 
average costs of CPSOs to increase when their volumes fall (e.g. if they were to 
reduce DLE interconnectivity and connect at the tandem layer and pay LTC charges), 
in practice this has not happened and there is no evidence that it is likely to happen 
in the future”.601

7.122 BT notes that Ofcom acknowledged in the Statement of Objections that CPSOs had 
maintained the size and shape of their networks as their volumes declined, rather 
than removing capacity. In this respect, BT submits that “the correct conclusion for 
Ofcom to draw from this is that CPSOs have not lost significant economies of scale 
and, moreover, that CPSOs have maintained (or even increased) their ability to 
compete aggressively with BT for contracts to supply wholesale end-to-end calls”.602 
As a consequence, BT argues that Ofcom’s conclusion that CPSOs will be forced to 
increase their prices to end consumers is entirely unsupported by evidence.603

Reduction in the incentives to invest

7.123 In its Response, BT argues that Ofcom’s concerns about reduced incentives to invest 
in network provision are unfounded and “in conflict with important realities in the

598 BT Response, paragraphs D.265 to D.270.
599 BT Response, paragraph D.253.
600 BT Response, paragraph D.253.
601 BT Response, paragraph D.273.
602 BT Response, paragraph D.275.
603 BT Response, paragraph D.276.
industry regarding the existing core networks for voice traffic and CP strategies for future investment

In particular, BT argues that significant excess capacity has existed in traditional TDM-based core networks since around 2004, implying that there has been no incentive for further investments in TDM capacity since before the period of the alleged margin squeeze.

BT also argues that CPs are in any case more likely to invest in IP rather than TDM networks, noting that Gamma and Opal have stated that they have invested heavily in their IP-based networks. BT also notes that, as IP networks carry voice together with other types of traffic, CPs’ investment decisions “will be driven by total traffic volumes across all services, and primarily by broadband demand rather than calls”. As a consequence, BT’s view is that it is implausible that any fall in wholesale end-to-end calls volumes would affect CPs’ network investment decisions.

Increase in barriers to entry or expansion

In its Response, BT argues that Ofcom’s discussion about barriers to entry and expansion “is far too narrowly focused on the prospects of entry and expansion for the purposes of supplying wholesale end-to-end calls to resellers”, and neglects “the constraints operative on the rapidly developing wider market at both the wholesale and retail level”.

More specifically, BT disagrees with the relevance of barriers to entry and expansion in the present case. In BT’s view, the extent to which prices could be prevented from rising in the future will depend not upon the lack of barriers to entry or expansion, but rather on: “(i) the existing strong competitors in the supply of wholesale end-to-end calls, with their own extensive networks, (ii) increasing competition from self-supply via MPF-based services; and (iii) indirect constraints at the retail level (e.g. from cable, mobiles and the different types of IP telephony services)”.

With respect to the first point, BT notes that “any CP that already has a core network would be able to re-enter the market and supply wholesale end-to-end calls at any time and compete on the basis of regulated prices for call origination and call termination”. Regulated input prices, therefore, place a ceiling on how high BT
would ever be able to raise prices for Wholesale Calls without attracting back competitors, even in the unlikely event that they had decided to exit the market. 613

7.129 BT additionally comments on each of the barriers specifically identified by Ofcom in the Statement of Objections.

Barriers to entry or expansion arising from reputational effects

7.130 BT claims that Ofcom’s position on reputational effects is not supported by any compelling evidence, 614 arguing that “the alleged effect has not materialised even several years after the beginning of BT’s conduct”. 615

7.131 BT refers to its comments regarding the intensity of competition in the market, and in particular the fact that there has been no market exit. BT argues that the fact it is facing strong competition and has lost numerous wholesale end-to-end contracts to competing CPSOs demonstrates the lack of direct reputational effects.

7.132 BT additionally claims that reputational effects could not arise in the wholesale end-to-end calls market because of the existence of indirect constraints on the pricing of wholesale end-to-end calls (e.g. from cable, mobiles and IP telephony services), which increase the range of options open to consumers and end-users. 616

7.133 Furthermore, BT suggests that it is implausible that such reputational effects would arise in any other markets if the direct effect has not been felt in the wholesale end-to-end calls market.

Barriers to entry to wholesaling using third parties to supply access to core networks

7.134 BT agrees with Ofcom’s assessment that there are unlikely to be significant entry barriers for a provider of wholesale end-to-end calls using third party network access, where the prospective entrant has at least a few ISIs in place. 617

7.135 However, BT disagrees with Ofcom’s view that, regardless of the above, because operators with no interconnection to BT at all would be likely to face entry barriers or higher operating costs, the entire mode of entry to wholesaling using third party network access would not be able to constrain prices at the competitive level.

7.136 BT’s argument is that:

- Operators with just a few ISIs would be able to provide sufficient constraints, therefore the argument that the entire mode of entry would not be sufficient to exert a constraint on BT is flawed;

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613 BT Response, paragraph D.284.
614 BT Response, paragraph D.287.
615 BT Response, paragraph D.289.
616 BT Response, paragraph D.290.
617 BT Response, paragraphs D.291 and D.292.
• BT suggests that small-scale entrants could rent capacity from third parties in 2Mbit/s increments without loss of scale efficiency. The economies of scale referred to by Ofcom are therefore not relevant except in relation to very small scale entry. BT argues that barriers to entry to such sub-scale operators should not be a relevant consideration because entry can (and should) occur at efficient scale.

Barriers to entry for vertically integrated wholesalers

7.137 BT claims that Ofcom’s argument about the existence of significant barriers to entry for vertically integrated wholesalers that do not yet have their own core network is irrelevant to any conceivable theory of harm in this case.

7.138 BT argues that the excess capacity that characterises the wholesale end-to-end calls market “is likely to persist for the foreseeable future as the demand for TDM networks decreases in favour of IP-based solutions”. For this reason, BT again argues that the competitive constraint from existing network operators is strong enough that “the entry of vertically integrated wholesalers without a network of their own is not necessary to constrain prices in the wholesale end-to-end calls market”.

Barriers to expansion

7.139 BT agrees with Ofcom’s view that there are no significant barriers to expansion for operators currently in the market.

7.140 However, BT claims that it is entirely speculative and at odds with market reality to argue that, in the longer term, barriers to expansion would arise if the current excess capacity were reduced: “it would never make sense for any CP to remove the capacity it has already sunk in the ground [...] and [...] given the trend away from fixed voice traffic, excess supply is a permanent feature of this market for the foreseeable future”. BT therefore concludes that, “as long as the network remains in use to some extent, then [...] there is no barriers to expansion”.

Responses from other interested CPs to our assessment

7.141 C&W, Gamma and Verizon provided written representations in response to the Statement of Objections. The views and arguments in their responses with regard to anti-competitive effects are summarised in this sub-section.

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618 BT Response, paragraph D.293.

619 BT further argues that even if it was the case that barriers to entry existed for small scale operators relying on third party networks, the number of existing CPs in the market act to constrain wholesale end-to-end calls pricing.

620 BT Response, paragraphs D.296 and D.297.

621 BT Response, paragraph D.297.

622 BT Response, paragraph D.297.

623 BT Response, paragraph D.299.

624 BT Response, paragraph D.300.
7.142 In light of the responses received to the Statement of Objections, we gathered additional evidence relating to actual and potential effects on competition. We also reassessed the position set out in the Statement of Objections to take into account the results of the revised financial analysis set out in Section 6.

7.143 Having assessed all the evidence and arguments put to us, we considered that we were no longer able to conclude that BT’s conduct had or was likely to have an anti-competitive effect. We shared our proposed findings, in the form of a draft decision, with C&W, Gamma, Verizon, Company 1 and Company 2 and BT on 18 December 2012 and invited them to provide comments by 31 January 2013.

7.144 We received substantive responses to the draft decision from C&W, Gamma and Verizon, which are also summarised below.625

7.145 We have taken the responses to the Statement of Objections and the draft decision into consideration in reaching our final conclusions on the actual and potential effects of BT’s conduct.

C&W

7.146 In its response to the Statement of Objections, C&W concurred with Ofcom that it is not necessary to demonstrate that an actual effect on competition has arisen as a result of the dominant undertaking’s pricing action. It noted that: “a competition authority need only show that the actions of the dominant undertaking had the potential to have an effect on competition”, notwithstanding that an actual effect may be relevant for determining penalty.626

7.147 C&W claimed that “in this instance, it has been shown beyond doubt that BT’s margin squeeze had an actual effect on competition and led to significant consumer harm”.627 The areas of harm identified by C&W in its response were:

(i) a reduction in the intensity of competition as equally efficient competitors (such as C&W) lost market share to BT and/or exited the market;

(ii) increased costs of CPSOs due to lost economies of scale; and

(iii) increased barriers to entry and expansion on both the relevant and related markets arising from the reputational effects of BT’s conduct.628

7.148 To support its views, C&W highlighted that:629

625 BT also responded to the draft final decision on 31 January 2013. BT agrees with Ofcom’s conclusion that the evidence submitted does not support a finding that its pricing conduct led to anti-competitive effects. However, BT contends (i) that Ofcom should not have included [>< Contract 1] in the margin squeeze analysis and the conclusions on economic effects are dependent on the continuation of [>< Contract 1] in the current form; (ii) that the time period covered by the modelling should be only over a period no shorter than the longest minimum contract life, or period of recoupment; and (iii) that there should be no automatic assumption that 100% use of a particular upstream input is always the right legal test.


627 Paragraph 6.2 of C&W’s response.

628 Paragraph 6.3 of C&W’s response.
• BT won key contracts including [Contract 1 and Contract 2], which were by far the largest contracts and BT’s acquisition of these two contracts was attributable to its margin squeeze. These acquisitions have led to a dramatic increase in BT’s market share and would have denied competitors, including THUS, the opportunity of operating at full scale and therefore being able to compete as efficiently.

• C&W/THUS experienced a reduction in volume of reseller business.

• Two CPSOs, KCOM and Telstra, exited the market and outsourced to BT.630

• Significant consolidation occurred within the reseller market,631 partly due to the need for resellers to improve their bargaining position with the dwindling number of wholesale suppliers.

• Had THUS remained an independent business, the loss of traffic due to BT’s conduct would have rendered some of its interconnects uneconomic and therefore required their removal. BT would have benefitted in other related markets such as Number Translation Service and Retail Voice, which use the same interconnect estate and share the costs.

• The decline in prices enjoyed by [Company 1 and Company 2] was swiftly replaced with price increases for other customers once Ofcom started its investigation. In the long run, the reduction in the intensity of competition will allow or would have allowed BT to increase average prices overall.

7.149 In addition, C&W also provided its views on the economic context of the downstream market which is relevant to the effects assessment. C&W commented that the downstream market is “a mature market with a declining market size and revenue”, noting that the size of the market has decreased as providers such as TalkTalk and Sky migrate their customers to LLU. C&W also highlighted that its sales volumes (excluding THUS) have declined [<<], though admitted that despite losing some contracts to BT the decline was not only or predominantly due to that. C&W predicted a further decline in its volume of calls as the size of the downstream market continues to decline.632

7.150 In response to our draft final decision, C&W contends that Ofcom made an error of law in misinterpreting or misapplying the legal test for margin squeeze as to the existence of anti-competitive effects. Further, C&W contends that we made six errors of fact and/or assessment in our findings, which we discuss where relevant in our analysis below. In summary, the six errors are.633

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629 Paragraph 6.2 of C&W’s response.

630 KCOM announced that it had signed a deal to outsource the management of its network to BT in June 2009. Daisy announced in September 2010 that it had signed an agreement to take over Telstra’s reseller customer contracts with immediate effect (see page 5 of Daisy Group plc’s Annual Report and Accounts, 2011: http://www.daisygroupplc.com/investors/company-reports).

631 C&W refers to Daisy Group’s acquisitions, in which seven acquisitions were completed in the period to March 2010.

632 Paragraph 3.4 of C&W’s response.

633 C&W Response to Draft Final Decision dated 31 January 2013, paragraphs 3.5 to 3.38.
• Ofcom was wrong to consider that THUS had not exited the market for the supply of wholesale end-to-end calls and that the structure of the market had not changed as a result of BT’s pricing conduct;

• Ofcom’s assessment of DLE capacity in the market failed to take into account the implications of BT’s conduct;

• The loss of any DLE capacity is harmful for the future competitive prospects of any CPSO;

• Ofcom failed to fully consider the impact and timing of its investigation in its assessment of the competitive effects of BT’s conduct;

• Ofcom was wrong to conclude that BT’s pricing could not have any exclusionary effect on third party CPSOs; and

• Ofcom assessed the chances of THUS winning [Contract 2] incorrectly, and used the wrong counterfactual in its assessment.

** Gamma **

7.151 Gamma made no comment in relation to impacts on competition and consumers in its response to the Statement of Objections.634

7.152 In response to our draft final decision, Gamma argues that.635

• BT’s market share increase was caused by reduced competition in the product market;

• Ofcom wrongly inferred that potential anti-competitive effects could not have occurred. Having made a finding that BT’s pricing behaviour did not lead to any actual anti-competitive effects, Ofcom should assess the potential for anti-competitive effects from April 2009 and not looking forward from the present; and

• Ofcom made a series of erroneous findings on actual competitive effect. There are a number of instances where BT’s behaviour could have been a subsidiary albeit not a predominant cause of anti-competitive effects, including Gamma and C&W’s declining market share; various contracts lost by both parties during the period under investigation and difficulties in winning contracts; decreasing average margins; and BT’s pricing behaviour. We deal with the various issues where relevant in our analysis below.

** Verizon **

7.153 In its response to the Statement of Objections, Verizon stated that “as a major competitor in the downstream market, we consider it is highly likely that Verizon

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634 Gamma’s response to the Statement of Objections, 15 April 2011.
635 Gamma Response to Draft Final Decision dated 31 January 2013, paragraphs 5 to 11.
suffered loss as a result of BT’s conduct.\textsuperscript{636} Verizon provided no evidence to support this statement.

7.154 In response to our draft final decision, Verizon highlights that:\textsuperscript{637}

- BT made a significant, unexpected loss in relation to the product during the period covered by the complaint. Ofcom’s attribution of this loss to poor governance arrangements is at the very least unsatisfactory;
- BT increased market share in a concentrated market by winning contracts on negative margins; and
- Given BT’s position in the wholesale market, these losses are in Verizon’s view highly indicative of an anti-competitive margin squeeze.

**Final analysis and conclusions on anti-competitive effects**

**Introduction**

7.155 We now set out our final analysis and explain why we are not satisfied that the evidence is sufficient to demonstrate that BT’s pricing conduct for Wholesale Calls has had, or has the potential to have, an anti-competitive effect.

7.156 In preparing this decision we have reconsidered in detail the views that we presented in the Statement of Objections. In doing so we have taken into consideration:

(i) the evidence we gathered before issuing the Statement of Objections;
(ii) the arguments and evidence submitted by BT and other respondents to the Statement of Objections;
(iii) the additional evidence we have gathered since issuing the Statement of Objections; and
(iv) four responses to our draft final decision from BT, C&W, Gamma and Verizon dated 31 January, in which C&W, Gamma and Verizon take issue with our conclusions.\textsuperscript{638}

7.157 In the remainder of this sub-section we therefore set out our assessment of:

(i) the latest evidence collected on actual anti-competitive effects;
(ii) why have we not observed anti-competitive effects; and
(iii) whether we still consider that there is or was potential for anti-competitive effects as a consequence of BT’s pricing conduct.

\textsuperscript{636} Paragraph 2 of Verizon’s response to the Statement of Objections, 15 April 2011.

\textsuperscript{637} Verizon Response to Draft Final Decision dated 31 January 2013, paragraphs 2, 10-11.

\textsuperscript{638} C&W Response to Draft Final Decision; Gamma Response to Draft Final Decision and Verizon Response to Draft Final Decision (all dated 31 January 2013).
7.158 We note that in its Response, BT raises a number of arguments in relation to the robustness of our analysis of the markets relevant to this case. BT further argues that, in the context of anti-competitive effects, “Ofcom’s entire approach to the issue is undermined by the weakness of the market analysis”. The assessment presented in the remainder of this Section does not rely on precise definitions of the boundaries of the relevant markets and BT’s position within those markets (though is based around the markets defined in Section 4). In light of this, and our finding that we have no grounds for action, it is not necessary to address BT’s specific arguments in relation to our market analysis. However, for reasons of transparency, BT’s arguments are presented in detail in Sections 4 and 5 above.

Evidence of actual anti-competitive effects

7.159 In the Statement of Objections, we identified a number of potential anti-competitive effects that might arise as a result of BT’s pricing conduct in relation to wholesale end-to-end calls. We did not, however, identify that any of these potential anti-competitive effects had actually occurred at the time that we issued the Statement of Objections.

7.160 When preparing the Statement of Objections the majority of the evidence held by Ofcom in relation to the effects of BT’s pricing conduct on competition related to the period up to April 2009. The evidence therefore covered a period of 10 months following the first month in which we found BT’s Wholesale Calls product to be earning negative margins (i.e. July 2008).

7.161 Since we prepared the Statement of Objections, considerably more evidence in relation to the effect of BT’s pricing behaviour on competition has become available. We collected further information from BT, its major competitors and other relevant parties, for the period up to the summer of 2011. In the following paragraphs we consider whether this information, and that submitted by the parties in their responses to the Statement of Objections and the draft decision, provides evidence that any of the potential anti-competitive effects have occurred in the period since BT first earned negative margins on the Wholesale Calls product.

7.162 We conclude that having reviewed the evidence, we are not satisfied that on the balance of probabilities, actual anti-competitive effects have arisen as a result of BT’s pricing conduct. In their responses to our draft final decision, C&W, Gamma and Verizon take issue with our assessment. Whilst we note their concerns and interpretation of the evidence, they have not brought forward any new evidence. We therefore confirm our provisional view that we have insufficient evidence to demonstrate on the balance of probabilities that BT’s conduct has had or is likely to have anti-competitive effects.

Reduction in the intensity of competition

7.163 We provisionally concluded in the Statement of Objections that BT’s pricing conduct had the potential to restrict competition by causing equally efficient competitors to

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639 BT Response, paragraph D.149.

640 As explained in Section 6, April 2009 was the most recent month for which data was available at the time we requested information for the purposes of our analysis.

641 C&W Response to Draft Final Decision; Gamma Response to Draft Final Decision and Verizon Response to Draft Final Decision (all dated 31 January 2013).
lose market share or accept lower margins. We considered that this might result in a reduction in the intensity of competition, or a distortion of competition.

*Market shares and market concentration*

7.164 We have used more recent data from BT and its competitors to assess what has happened in respect of market concentration in the wholesale end-to-end calls market since April 2009. Specifically, we gathered data from BT and its major competitors in relation to the volumes of call minutes that they supplied to that market in the period from April 2009 to April 2011. Table 7.2 below presents the updated volumes and market shares.

7.165 Before analysing the market share data, it is important to note that Contract 1 and Contract 2 are significantly larger than any other contracts in the market (of the total minutes shown in April 2009, they accounted for \( \geq 21-30\% \) and \( \geq 21-30\% \) respectively). As a consequence, presenting market shares including these two contracts risks masking the underlying trends for the rest of the market. Also, self-supplied its wholesale end-to-end calls in April 2008, so these minutes are not included in the table in this month. As a result, CPSOs’ market shares fall when these minutes are included in BT’s volumes. For these reasons, it is informative to also consider the volumes and shares excluding the minutes supplied under Contract 1 and Contract 2. This is presented in Table 7.3 below.

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642 We decided that it was appropriate to seek updated data from only BT, C&W, Gamma, Opal and Verizon (rather than every single CP). We believe that data from these CPs is sufficient to draw robust conclusions, as they accounted for nearly \( \geq 91-100\% \) of wholesale end-to-end call minutes in April 2009 and were the only CPs with a market share in excess of \( \geq 0-10\% \) at that time. The data gathered indicates that these CPs continue to account for the vast majority of wholesale end-to-end call minutes.

643 For the avoidance of doubt, this should not be interpreted as Ofcom endorsing a market definition excluding Contract 1 and Contract 2. The volumes of Contract 2 are removed from Contract 1’s volumes in Contract 1, and from BT’s volumes from Contract 2 onwards. The volumes of Contract 1 are removed from BT’s volumes from April 2008 onwards. Further, and for the avoidance of doubt, we have not excluded from the analysis the minutes that Company 1 as a CPSO supplies to the merchant market.
Table 7.2: Volumes and market shares of the wholesale end-to-end calls merchant market, April 2008 to April 2011

<table>
<thead>
<tr>
<th></th>
<th>Volume of call minutes (million minutes per month)</th>
<th>Share of total minutes (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Apr-08</td>
<td>Apr-09</td>
</tr>
<tr>
<td>BT</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>Gamma</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>C&amp;W/THUS</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>Opal</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>Verizon</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>Total</td>
<td>[X]</td>
<td>[X]</td>
</tr>
</tbody>
</table>


Notes: (i) Percentages may not appear to sum to 100% due to rounding. (ii) The total minutes in April 2008 and April 2009 differ from the corresponding figure in Table 7.1 in the Statement of Objections because [X] other companies are excluded to facilitate comparison with the 2009, 2010 and 2011 figures. (iii) To the extent that [X] supplies the merchant market using BT Wholesale Calls there will be double counting of [X]'s minutes: such minutes will be counted in both [X] and BT's volumes. (iv) Volumes exclude IA and self-supplied wholesale end-to-end call minutes. (v) In April 2008, THUS and C&W operated as independent entities.

Table 7.3: Volumes and shares of the wholesale end-to-end calls merchant market excluding [X] Contract 1 and Contract 2 volumes, April 2008 to April 2011

<table>
<thead>
<tr>
<th></th>
<th>Volume of call minutes (million minutes per month)</th>
<th>Share of total minutes (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>[X]</td>
<td>[X]</td>
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<tr>
<td>Verizon</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>Total</td>
<td>[X]</td>
<td>[X]</td>
</tr>
</tbody>
</table>


Notes: (i) Percentages may not appear to sum to 100% due to rounding. (ii) To the extent that [X] supplies the merchant market using BT Wholesale Calls, these minutes will still be counted in [X]'s volumes. (iii) Volumes exclude IA and self-supplied wholesale end-to-end call minutes. (iv) In April 2008, THUS and C&W operated as independent entities.

7.166 Table 7.2 shows that BT’s market share has remained at a relatively high level since April 2009, even though its volume of call minutes has fallen significantly. Table 7.3 indicates that this decline in call minutes is primarily a result of declining volumes on
[Contract 1 and Contract 2]: excluding these two contracts, BT’s volume of call minutes has increased since April 2009. The decline in the [Contract 1 and Contract 2] volumes is largely a result of [Contract 1], [Contract 2] informed us that since entering into the contract with BT, “[Contract 1]”. Similarly, [Company 1] stated that its need for Wholesale Calls is likely to diminish in the future.

7.167 With respect to the CPSOs from which we have gathered more recent data, although all of these CPSOs lost volumes and market share between April 2008 and April 2009, this has not been universally true since 2009. Based on the data in Table 7.3, Opal’s share of volumes excluding [Contract 1 and Contract 2] increased from [20-30]% in April 2009 to [20-30]% in April 2011, and Verizon’s share increased from [0-10]% in April 2009 to [0-10]% in April 2011 (which is greater than its market share in April 2008).

7.168 Although Gamma and the merged C&W and THUS business saw reductions in their volumes and market shares since April 2009, both were affected by [Contract 1]. Gamma and C&W lost [Contract 1] volumes as a result of [Contract 1]. In Table 7.4, we have sought to illustrate the impact of [this].

### Table 7.4: Volumes and shares of the wholesale end-to-end calls merchant market excluding [Contract 1, Contract 2] and [Contract 1], April 2008 to April 2011

<table>
<thead>
<tr>
<th>Volume of call minutes (million minutes per month)</th>
<th>Share of total minutes (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr-08</td>
<td>Apr-09</td>
</tr>
<tr>
<td>BT</td>
<td>[Contract 1]</td>
</tr>
<tr>
<td>Gamma</td>
<td>[Contract 1]</td>
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<tr>
<td>C&amp;W/THUS</td>
<td>[Contract 1]</td>
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<td>Opal</td>
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<tr>
<td>Verizon</td>
<td>[Contract 1]</td>
</tr>
<tr>
<td>Total</td>
<td>[Contract 1]</td>
</tr>
</tbody>
</table>

Notes: (i) Percentages may not appear to sum to 100% due to rounding. (ii) To the extent that [Contract 1] supplies the merchant market using BT Wholesale Calls, these minutes will still be counted in [Contract 1] volumes. (iii) Volumes exclude IA and self-supplied wholesale end-to-end call minutes. (iv) In April 2008, THUS and C&W operated as independent entities.

7.169 As can be seen in Table 7.4, removing the effect of [Contract 1] smoothes the changes in Opal’s share of volumes over the period April 2008 to April 2011 and reduces the

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644 The volumes on [Contract 1] have fallen from around 500 million minutes per month (in the early months of the contract) to around 260 million minutes per month in September 2011 (a reduction of 50%). The volumes on [Contract 2] have fallen from a similar level to around 315 million minutes per month in September 2011 (a reduction of 40%).

645 [Contract 1].

646 [Contract 1].

647 [Contract 1].
scale of the decline in both Gamma and C&W/THUS’ shares. The remainder of the reduction in Gamma and C&W/THUS’ share of volumes over the period is mainly accounted for in the following way:

(i) In the case of Gamma, [><].\textsuperscript{648}

(ii) In the case of C&W/THUS, [><].\textsuperscript{649} [><].

7.170 Notwithstanding these observations, it remains the case that in April 2011, the market was more concentrated than in April 2008. Although BT does not dispute Ofcom’s finding of increased concentration, it argues that market shares cannot be relied upon as the main indicator of the intensity of competition in this market. Specifically, BT contends that the supply of wholesale end-to-end calls, at least to major customers, has many characteristics of a bidding market; market shares can alter very rapidly.

7.171 While we recognise that the major, long term contracts share some of the characteristics of a bidding market, we do not believe that the downstream market in general can be characterised as a bidding market. In particular, one essential feature of bidding markets is exclusivity, and exclusivity clauses do not appear to be widespread in wholesale-end-to-end calls contracts. Nonetheless, given that the two [><] contracts – [>< Contract 1 and Contract 2] – are [><], we recognise the potential for market shares to fluctuate significantly, especially when contracts for large volumes are tendered. [><]. As a consequence, we agree that market shares in this market are a less determinative indicator of the level of underlying competition than in other markets. Some caution is therefore required when seeking to draw conclusions from market share data for this specific market.

7.172 C&W, Gamma and Verizon disagree with our assessment of the evidence in their responses to our draft final decision, but do not provide new evidence which would change our conclusions. Gamma refers to the contracts with [><] and [><], which it argues it lost during the relevant period as a result of BT’s pricing behaviour. However, we have found BT’s pricing on the [><] contract to be sufficient to cover the costs of an (adjusted) equally efficient operator. Moreover, Gamma told us that it lost the [><] contract as a result of [><] being bought by [><], and remarked “we were unable to retain it against their BT wholesale calls deal”.\textsuperscript{650} Therefore, given our finding in relation to the [><] contract, Gamma did not lose either of these contracts as a result of BT earning a negative margin.

7.173 Therefore, we do not consider that the increase in BT’s market share is, by itself, sufficient to conclude that there is evidence of a reduction in the intensity of competition in this market as a result of BT’s pricing behaviour.

Changes in margins

7.174 We explained in the Statement of Objections that, if a CPSO experiences not only a reduction in volumes but also a reduction in its average margin over interconnection costs, its overall profitability may be adversely affected and the CPSO would have to re-appraise the viability of remaining in the market.

\textsuperscript{648} [><].

\textsuperscript{649} [><].

\textsuperscript{650} Gamma response to Question 2, November 2011 section 26 Notice.
7.175 In the Statement of Objections, we found that between 2008 and 2009, nearly all CPSOs had seen their average margins over interconnection costs decline. As explained in paragraphs 7.105 and 7.106 above, BT argues that the decline in margins observed in the Statement of Objections is consistent with more intense price competition, as well as the competitive constraint from other services.

7.176 As noted by BT, and Ofcom in the Statement of Objections, findings in relation to CPSO margins can be ambiguous in providing an insight into the competitive dynamics of the market. Given this, we have not updated these figures as we considered it was not necessary for the purposes of this Decision, as a number of factors affect average margins.

7.177 We also note that information provided by Verizon and C&W suggests that these particular CPSOs focus on profitable contracts. C&W stated that the important factors when bidding for contracts are "bottom line margin and scale", not revenue. Verizon also said that, since 2010, [>< the business focus had shifted].

7.178 In light of the above, we do not consider that the evidence on CPSOs' average margins necessarily demonstrates that there has been an actual reduction in the intensity of competition as a result of BT's pricing behaviour. In its response to our draft final decision, Gamma disagrees with this conclusion on the grounds that BT's pricing behaviour caused decreasing average margins and thus a reduction in competitiveness of CPSOs generally. Decreasing average margins are, however, not inconsistent with a competitive market. The key question is whether margins have reduced to the level at which efficient firms are no longer able to compete in the market. We do not have any reason to believe that this is the case. We therefore remain of the view that the evidence on average margins does not demonstrate that on the balance of probabilities BT's conduct has had an actual or potential effect on competition.

**Market exit**

7.179 As observed in the Statement of Objections, the clearest example of exclusionary effects of a technical margin squeeze is where the margin squeeze causes a reduction in the number of competitors in the market. We set out our view that THUS had effectively exited the market following its merger with C&W and that [>< Company 1] represented an instance of partial exit since it was largely reselling BT Wholesale Calls instead of using its own network.

7.180 While ceasing to operate as an independent CPSO following its acquisition by C&W, THUS is still active in the wholesale end-to-end calls market with a separate brand albeit using C&W's infrastructure. There is no evidence that BT's conduct was a decisive factor in C&W's decision to acquire THUS. C&W and Gamma disagree with our assessment that THUS did not exit the market in their responses to our draft final decision, but both acknowledge that THUS remains active in the wholesale end-to-end calls market. C&W does not dispute our assertion that BT's conduct was not a decisive factor in its acquisition of THUS. To the extent that THUS no longer exists as

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651 See paragraphs 7.24 to 7.27 of the Statement of Objections.

652 See C&W's response of 18 November 2011 to Q2(a) of the 4th section 26 Notice (dated 2 November 2011).

653 See Verizon's response of 29 November 2011 to Q2(f) of the 3rd section 26 Notice (dated 2 November 2011).
a separate corporate entity in the market, this is the result of its acquisition by C&W rather than the result of BT’s pricing conduct. While both C&W and Gamma argue that had THUS not been acquired by C&W it would have suffered harm as a result of BT’s conduct (e.g. been priced out of the market for scale contracts), we consider that it is important to take into account evidence of all the circumstances of the case, in assessing the effects of BT’s behaviour. Specifically, the evidence shows that the acquisition of THUS was unrelated to BT’s pricing conduct, that it is still active in the wholesale end-to-end calls market and that the appropriate counterfactual to BT winning [熏 Contract 2] was not THUS winning the contract (see paragraph 7.281). Given this, we are not satisfied that on the balance of probabilities BT’s conduct was responsible for THUS ceasing to operate as an independent CPSO, nor that it was likely to be.

7.181 We also recognise that [熏 Company 1] (which is discussed in greater detail at paragraphs 7.242 to 7.274 below) is still active in the downstream market and therefore exerts a competitive constraint on BT, despite sourcing a significant part of its wholesale end-to-end call requirements from BT. Information gathered from BT and CPSOs also shows that [熏 Company 1] is bidding for and winning contracts (see below). This evidence is consistent with BT’s claims that [熏 Company 1] is still active in the market (see paragraphs 7.79 to 7.94 above).

7.182 In response to C&W’s observation that KCOM and Telstra have exited the market, we do not consider that this is evidence that BT’s conduct has directly led to market exit. C&W and Gamma provide no further evidence in their responses to our draft final decision to challenge this.

7.183 Whist KCOM outsourced the management of its network assets to BT in June 2009,654 it has not exited the wholesale end-to-end calls merchant market and continues to provide wholesale end-to-end calls using its network. In any case, we have not seen evidence to suggest that KCOM’s decision to outsource was the result of BT’s pricing of Wholesale Calls over the period July 2008 to April 2009. KCOM’s decision to outsource to BT appears to have been primarily driven by expected reductions in ongoing fixed costs and capital expenditure associated with the management of its network infrastructure.655 The resulting cost savings should enable KCOM to compete more effectively for wholesale end-to-end calls.

7.184 With respect to Telstra, we recognise that it did exit the market in September 2010. However, we have not seen evidence to suggest that this decision was a result of BT’s pricing of Wholesale Calls over the period July 2008 to April 2009. In fact, a statement from Telstra at the time suggests that it had decided to re-focus its business on where it had the most expertise: “our strategy is to focus on our multinational customers with either managed services requirements or requirements in the Asia Pacific region where we have the most expertise”.656 We also note that Telstra entered into an agreement with Daisy to take over all of its reseller agreements. [熏].

656 http://www.commsbusiness.co.uk/RSS_News_Articles.cfm?NewsID=11956.
In their responses to our draft final decision, C&W and Gamma disagree with our interpretation of the evidence that Telstra’s exit was not directly attributable to BT’s pricing conduct, arguing that Telstra would not have publicly suggested that it was a relevant factor in its decision to exit the market. Absent new evidence however, we remain of the view that we do not have evidence which demonstrates that Telstra’s exit from the market was a result of BT’s conduct and that the evidence available suggests that Telstra had other reasons for doing so.

Therefore, we consider that we do not have evidence that, on the balance of probabilities, BT’s pricing has led to anti-competitive market exit in the four years since BT first earned negative margins.

**Ability to compete for reseller customers**

BT argues that the market has remained competitive since the start of BT’s aggressive pricing conduct, and in support of this argument, claims that competitors have expanded the number of reseller customers of wholesale end-to-end calls. This is based on the number of Reseller Identity (RID) codes allocated by Ofcom to each CPSO. While recognising that this is the best data on the number of accounts available to BT, it is likely to overestimate the number of reseller customers. This is because RID codes will exist for resellers that have since exited (or effectively exited) the downstream market. Information provided by CPSOs on the volumes and revenues for each reseller customer in response to section 26 Notices, is a more accurate indicator of the number of reseller customers a CPSO had over the same period. Table 7.5 below presents the number of contracts BT and each CPSO had over the period April 2007 to April 2011.

**Table 7.5: Number of reseller contracts over the period April 2007 to April 2011**

<table>
<thead>
<tr>
<th></th>
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<th>Apr-10</th>
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<td>Gamma</td>
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<tr>
<td>C&amp;W/THUS</td>
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Notes: (i) BT was only able to provide data on individual contract volumes and revenues from March 2008 (see paragraph 6.144). (ii) To the extent that [X] supplies resellers using BT Wholesale Calls exclusively, these contracts will still be included in [X]’s figures. (iii) Prior to October 2008, C&W and THUS were separate entities (iv) For the months to April 2009, Verizon only provided month by month data for its largest [X] wholesale customers (representing around 90% of its total volumes). [X].

Although the number of contracts differs to the number of RID codes reported by BT in its Response, the conclusions we can draw from Table 7.5 are broadly consistent with BT’s. Treating C&W and THUS together, all of the CPSOs have increased the

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When BT or a CPSO loses a contract, the volumes associated with that contract tend to decline over a number of months as the reseller moves its volumes to the gaining supplier. Also, the reseller may keep an insignificant number of volumes with the losing supplier. This makes it difficult to count the number of active contracts at any one time. We assume that the contract is active in a particular month if the revenues in that month are at least 10% of the monthly maximum revenues for the contract (note that from April 2007 to April 2009, we have monthly data, while from April 2009 to April 2011, we only have data for each April.). The figures in Table 7.4 should therefore be considered estimates only. However, we still consider this data to be more accurate than using RID codes, for the reason given above.
number of contracts over the period April 2008 to April 2011, albeit that the increase has not been as great as that suggested by BT.

7.189 We recognise that Table 7.5 does not provide robust information on the number of contracts won, nor does it give an indication of the size of different contracts (or the margins earned on those contracts). Nonetheless, we think it is a useful (albeit basic) indicator of the intensity of competition in this market. In particular, it suggests that CPSOs are successfully bidding for and winning new contracts.

7.190 This conclusion is also consistent with information provided by BT and CPSOs in response to our question about important contract wins and losses.\(^658\) Whilst the information provided is somewhat anecdotal, the responses suggest that CPSOs are competing for and winning new contracts.

7.191 Specifically, the responses suggest that multiple firms compete for important contracts. For example, BT’s response suggests that it faced competition from at least one other bidder for all but one of the contracts it was invited to bid for.\(^659\) For a number of these contracts ([\(<\)], BT suspects that it faced competition from three or more bidders. Similarly, Gamma’s response suggests that it competed with at least Opal and C&W (in addition to BT) for a number of contracts, and Opal’s response shows that it won and lost business to [\(\geq\) other operators, including BT]. Although C&W does not record the competing bidders, it is clear that C&W competed for contracts with a number of CPSOs including BT: “typically, the previous incumbent would have been one of the following: BT, Gamma, Kingston, THUS or Verizon”.\(^660\)

7.192 We note that C&W believes that, in most cases, BT was the successful party. However, taking the responses as a whole, we do not believe that there is evidence that BT is winning all (or most) of the important contracts. This is supported by Verizon’s view that “the ‘dominant’ competitor tends to shift over time as different companies hit different profit / revenue requirements at different times”.\(^661\) Moreover, there is evidence of important contracts being won by Opal,\(^662\) Gamma,\(^663\) C&W/THUS\(^664\) and Verizon\(^665\).

7.193 In addition, CPSOs are successfully winning contracts from BT, including \([\geq\]) (won by \([<\]) on which we have found BT to have priced below cost over the period July

\(^{658}\) Responses to Q2, November 2011 section 26 Notices.

\(^{659}\) The one contract that was not open to other competing bidders was \([<\) Contract 1] (discussed in more detail in paragraphs 7.242 to 7.260).

\(^{660}\) Response to Q2, November 2011 section 26 Notice.

\(^{661}\) See Verizon’s response of 29 November 2011 to Q2(d) of the 3\(^{rd}\) section 26 notice dated 2 November 2011.

\(^{662}\) For example, BT reported that it lost the \([<\]) contract to Opal.

\(^{663}\) For example, BT reported that it lost the \([<\]) contract to Gamma. BT and Opal reported that they lost contracts with \([<\]) to Gamma.

\(^{664}\) For example, Opal reported that it lost the \([<\]) contract to C&W. BT reported that it lost another contract with \([<\]) to C&W (note that over the period of interest \([<\]) held multiple contracts for wholesale end-to-end calls with various CPs).

\(^{665}\) Opal reported that it lost the \([<\]) contract to Verizon.
2008 to April 2009. This is consistent with BT’s submission that it continues to face competition from a number of CPSOs. In Gamma’s view, although CPSOs may well have successfully won contracts from BT in the relevant period, BT’s pricing behaviour caused decreasing average margins and thus a reduction in competitiveness of CPSOs generally. Accordingly, Gamma claims that wins were at the expense of foregone margins which could otherwise have been deployed in increasing the competitiveness of CPSOs, for example by investment in new infrastructure and products. However, as we note above, decreasing margins are not in and of themselves necessarily evidence of anti-competitive conduct. We do not have evidence to demonstrate that margins have fallen to a level at which an efficient firm would be unable to compete in the market.

The responses also demonstrate that price is not the only factor for resellers considering competing bids. For example, BT cites quality of service, range of offerings and sustainability as possible reasons why resellers chose BT. Similarly, C&W believes that it was successful in winning bids because it “offered a competitive package based on price, combined with a quality product offering with reliable CDR[668] delivery, backed up by a solid and dependable reputation”. In relation to some unsuccessful bids, C&W notes that “the attractiveness of the overall bundle”, and “issues like payment terms” were relevant factors in addition to price. Although Gamma believes that a number of bids were lost “purely on price”, at the same time, it believes that it won the [3<] contract “on the basis of systems and service, despite not being the cheapest”. In contrast, Verizon takes the view that [3< price is the determining factor in the majority of bids].

We also note that [3< Company 2] has retendered for its wholesale end-to-end calls requirements. [3< Company 2] approached six providers for bids, suggesting that it remains the case that there are a number of credible competitors to BT in the market for wholesale end-to-end calls. [3<].

We also asked CPSOs whether they had noticed any trends in their level of success in winning bids. Gamma responded that “the most difficult period for us for winning / retaining business was up to mid/late 2009” and attributed this primarily to BT’s pricing at that time. However, Gamma went on to add that “subsequently the

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666 Gamma response, paragraph 10.
667 BT Response to Q2, November 2011 section 26 Notice.
668 Call Data Records.
669 C&W Response to Q2(e), November 2011 section 26 Notice.
670 C&W Response to Q2(d), November 2011 section 26 Notice.
671 Gamma Response to Q2(a), November 2011 section 26 Notice.
672 Gamma Response to Q2(b), November 2011 section 26 Notice.
673 Verizon Response to Q2(e), November 2011 section 26 Notice.
676 Gamma Response to Q2(c), November 2011 section 26 Notice.
pressure on CPS margins eased somewhat and in 2010 we found it easier to win business”. Gamma notes in its 2011 financial statements that: “We are pleased that the traditional calls and lines business held steady in a declining market with some significant new customer wins.”. C&W stated that “it has proved very difficult to win big contracts during this period [since 2007] and it has also become more challenging for us to retain big customers”, citing the loss of [X] as an example. In their responses to the draft final decision, C&W and Gamma interpret such statements as evidence of the anti-competitive effects on the market caused by BT’s pricing.

7.197 Taken together, however, our assessment of the evidence above does not persuade us, on the balance on probabilities, BT’s pricing for Wholesale Calls in July 2008 to April 2009 has directly affected competitors’ ability to bid for reseller customer contracts. Although there appear to be ebbs and flows in the relative strength of the various competitors over time, overall competition for individual reseller contracts appears to remain strong. Indeed, on balance, the currently available evidence appears to support BT’s assertion that “competition in the supply of wholesale end-to-end calls remains intense to this day”.

Conclusion on the intensity of competition

7.198 On the basis of the analysis above, we do not consider that the evidence demonstrates that, on the balance of probabilities, BT’s pricing for Wholesale Calls over the period July 2008 to April 2009 has caused a reduction in the intensity of competition in the market in the more than four years since BT first earned negative margins.

7.199 Although BT’s market share has remained consistently high since the start of the period in which it made a negative margin on its Wholesale Calls product, we do not consider that market concentration is, by itself, sufficient to draw conclusions on the intensity of competition in this market. In their responses to our draft final decision, C&W and Gamma assert that BT’s pricing in 2010 and 2011 changed because Ofcom opened a competition investigation following their complaint in 2008, and that Ofcom should take this into account in assessing the weight to be given to evidence of the intensity of competition following the conduct. C&W argues that “subsequent pricing developments do not excuse or explain BT’s conduct in the period July 2008 to April 2009”. They also argue that BT’s alleged earlier margin squeeze pricing probably provided BT with a material advantage in securing the later contracts.

7.200 As set out in Section 6, following the complaint, we examined BT’s pricing in detail for the period July 2008 to April 2009. As set out above, margin squeeze is not a per se abuse. Given the passage of time and available evidence, it is appropriate for Ofcom to carry out an assessment of actual and potential effects of BT’s conduct informed by evidence of what has actually happened in the market.

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677 See page 4 (Chairman’s Statement) of the Consolidated Financial Statements for Gamma Telecom Holdings Limited (year ended 31 December 2011): http://www.gamma.co.uk/media/337033/gamma%20telecom%20holdings%20limited%202011%20accounts.pdf.

678 C&W Response to Q2(f), November 2011 section 26 Notice.

679 BT Response, paragraph D.225

680 C&W response to draft final decision dated 31 January 2013, paragraphs 3.27-9; Gamma response to draft final decision dated 31 January 2013, paragraph 10.
In particular, we do not consider that the evidence shows that BT’s pricing between July 2008 and April 2009 gave it a material advantage in securing later contracts.

Of the other evidence that we have considered, we are not satisfied that, on the balance of probabilities, BT’s pricing conduct has resulted in a weakening of competition in the downstream market. In particular, on the basis of the information gathered since the publication of the Statement of Objections there is no evidence that BT’s behaviour has led to anti-competitive market exit, or that its competitors have been materially affected in their ability to bid for reseller customer contracts.

Weakening of constraints imposed by competitors

As explained in paragraph 7.34, our concern in the Statement of Objections was that BT’s pricing conduct, by causing competitors to lose sales volumes, had the potential to increase both the marginal and the average costs of competitors, thereby weakening their ability to compete against BT. We explained that the loss of volumes could impact CPSOs’ costs primarily through the impact on the level of DLE interconnection.

From an economic perspective, marginal cost is the relevant cost measure for firms’ short-run pricing behaviour, and is therefore relevant to assess the extent of competition in this market.

In the Statement of Objections, we found no evidence of short run marginal costs increasing, as CPSOs had chosen in general to maintain their DLE interconnectivity. However, we were concerned that this could change in the future were volumes to drop further. Given that CPSOs (for the most part) had maintained the number of interconnect circuits but had lost volumes, we noted that average costs were likely to have increased, although our view was that the effect was likely to be limited.

More recent information submitted by the major CPSOs in response to section 26 Notices demonstrates that it is still the case that these CPSOs have not materially reduced the size and shape of their networks. Table 7.6 below shows that these CPSOs have retained a high level of DLE interconnection to BT’s network.

Table 7.6: Number of DLEs to which CPSOs are interconnected, as at June 2009 and June 2011

| Source: responses to section 26 Notices, November 2011. Note: [<>]. |

Between June 2009 and June 2011, there was a very limited reduction in the number of DLEs to which both Gamma and [<>] interconnect. Gamma explained that this reduction results from “connections become uneconomic... ...and changes in traffic patterns the reductions being in N. Ireland and Cornwall”. We note that where DLE interconnection was dropped, this is likely to have happened for the small, low call volume exchanges, so any effect would be minimal. Therefore, we consider that it is unlikely that the marginal costs of the main competitors to BT have changed significantly since the start of BT’s pricing conduct.

Gamma response to Q2 and Q5, November 2011 section 26 Notice.

Moreover, although [<>] and Gamma have both reduced the number of DLEs to which they are interconnected since June 2009, data provided by BT in its Response suggests that both may have
7.208 In their responses, C&W argue that CPs have a number of different incentives for maintaining DLE connections, and Ofcom should not take into account unrelated circumstances (such as the fact that the circuits support other services like NTS calls) in assessing whether or not BT’s pricing conduct has an anti-competitive effect.\(^{683}\) Gamma notes that it was “forced to maintain under-utilised DLE interconnections which it attempted to mitigate by swinging effort to win traffic from other markets mindful of the fact that the cost of re-instating cancelled DLE interconnections would have been substantial and accordingly these factors distorted Gamma’s competitive position in the relevant market.”\(^{684}\) However, we consider that it is appropriate for Ofcom to consider all the circumstances of the case, and the evidence of what has happened to inform an assessment of what was or is likely to happen.

7.209 In addition, in paragraph 7.148 above, we note that C&W argues that “had THUS remained an independent business, the loss of traffic due to BT’s decreased prices would have rendered some interconnects uneconomic requiring their removal”. However, as noted above, we have not seen evidence that demonstrates that BT’s pricing behaviour was relevant to the decision made by both parties to merge. Therefore, it is not appropriate to treat what might have happened to THUS had it remained an independent business as an effect of BT’s pricing conduct.

7.210 With respect to CPSOs’ average costs, it remains the case that most CPSOs have lost volumes compared to the volumes they supplied prior to BT earning negative margins on its Wholesale Calls product (see Table 7.3 above). Gamma and C&W/THUS have both lost volumes since April 2008. Although [\(<\) Company 1]’s volumes have remained largely constant since April 2008, a significant proportion of these minutes are likely to be supplied using BT Wholesale Calls. Only Verizon supplied greater volumes in April 2011 than it did in April 2008.

7.211 However, a decline in wholesale end-to-end calls volumes does not amount to evidence that average costs will have increased. To the extent that CPSOs have been able to replace the lost CPS volumes with non-CPS volumes, their average costs would not (by definition) have increased. Moreover, even if CPSOs have not been able to increase non-CPS volumes sufficiently to fully or partially compensate for the loss of CPS volumes, their costs may still not have risen significantly. On routes where capacity is leased, average costs will not have risen if CPSOs have been able to sufficiently scale back their capacity to off-set the volume losses. Therefore, while DLE interconnectivity appears to have remained broadly unchanged in terms of the number of DLEs to which CPSOs are interconnected, it is possible that CPSOs have managed to avoid an increase in their average costs by downsizing some of those routes. For instance, Verizon submitted that [\(<\) they have reduced the number of E1s in their DLE estate to reflect changes in traffic volumes].\(^{685}\)

7.212 We note that none of the CPSOs that responded to either the Statement of Objections or our subsequent information requests, or in their responses to the draft final decision, provided evidence that their average and marginal or average costs had been materially affected by the loss of wholesale end-to-end call volumes. In

\(^{683}\) C&W response dated 31 January 2013, section II.

\(^{684}\) Gamma response dated 31 January 2013, paragraph 10.

\(^{685}\) Verizon response to Q5, November 2011 section 26 Notice.
relation to the loss of the [<&gt;] contract to BT, Gamma did remark that its “network economics and scale were affected adversely”. However, it did not provide any indication of the magnitude of this effect, or whether the effect was offset by it winning other contracts. Moreover, as discussed at paragraph 7.172 above, the [<&gt;] contract was not one on which BT earned a negative margin.

7.213 Therefore, we consider that on the balance of probabilities, the evidence does not demonstrate that BT’s conduct over the period July 2008 to April 2009 has affected the CPSOs’ marginal costs such that their ability to compete in the downstream market has been impaired. Nor does the evidence demonstrate that BT’s pricing conduct has had an impact on CPSOs’ average costs.

Reduction in the incentives to invest in core networks

7.214 As noted in paragraph 7.34 above, our concern in the Statement of Objections was that BT’s conduct, by distorting prices, might have been capable of reducing CPSOs’ incentives to invest in maintaining their networks or developing new technologies, thereby adversely affecting network competition and the emergence of more advanced technologies.

7.215 However, consistent with BT’s arguments explained in paragraphs 7.123 to 7.125 above, the information gathered from CPSOs since the publication of the Statement of Objections suggests that BT’s Wholesale Calls pricing conduct is unlikely to have had an impact on the CPSOs’ appetite for investing in their TDM capacity in the period since BT first earned negative margins.

7.216 CPSOs have indicated that the business case for investing in further TDM capacity has been low throughout the period since BT started earning a negative margin on its Wholesale Calls product. This is for two main reasons: (i) the fact that there is still significant spare capacity on CPSOs’ TDM core networks, and (ii) partially as a consequence of the existence of that spare capacity, any investment is focussed on 21CN networks.

7.217 The evidence gathered suggests that, as BT pointed out in its Response, there is significant spare capacity on the CPSOs’ TDM networks, with some CPSOs submitting that they have not taken any action to reduce capacity on their core networks in response to falling CPS volumes. C&W indicated that its Worldwide network could accommodate an additional [<&gt;] minutes/month without further expansion, and Gamma submitted that there is “considerable capacity in our IP core network, which is therefore not of itself a constraint on gaining CPS traffic”.

7.218 We have not seen evidence that BT’s conduct has affected CPSOs’ incentives to invest in new technologies. The majority of CPSOs have indicated that they have

686 Gamma response to Q2, November 2011 section 26 Notice.

687 Note that we have found BT’s pricing on this contract to be sufficient to cover the costs of an (adjusted) equally efficient operator. This was therefore not a contract that BT won as a result of earning a negative margin and was a contract for which other CPs were able to compete.

688 C&W responses to Q3(a), November 2011 section 26 Notice. This represents about [<&gt;] times as much as C&W’s volumes of wholesale end-to-end calls in April 2011, or around [<&gt;] times as much as the combined C&W/THUS’ volumes for the same month.

689 Gamma response to Q3(a), November 2011 section 26 Notice.
made a strategic decision to gradually move to a totally IP-based infrastructure, and are therefore investing to support voice and data products on these networks rather than voice-only products on their TDM networks. Notably, Verizon describes this trend as follows:

“…most major carriers see their voice businesses as a legacy market, [\text{\[
\]}. As such over the last three to four years there have been significant reductions in [\text{\[
\] the voice business}. These trends are seen across the major carriers and have led to greater process automation [\text{\[
\]}, which [\text{\[
\]}may have also played its part in how the market has developed recently.\text{\textsuperscript{690}}

7.219 Similarly, Gamma stated that “CPS remains part of our product range available to all customers but we do encourage the migration of end-users to more feature-rich IP connectivity based products. CPS is thus no longer the central thrust of our sales activity”.\text{\textsuperscript{691}} C&W also indicated that “in common with all CPs, our aspiration is to move to a totally IP-based infrastructure”.\text{\textsuperscript{692}}

7.220 In conclusion, we consider that the evidence gathered does not demonstrate that BT’s pricing for Wholesale Calls between July 2008 and April 2009, had an impact on the CPSOs’ appetite for investing in their TDM capacity. The existence of significant spare capacity coupled with the move to IP networks means that, as BT noted in its Response, there was little prospect that CPSOs would have invested in their TDM networks even if BT had not earned a negative margin on its Wholesale Calls product.

Increase in barriers to entry and expansion and reputational effects

7.221 Barriers to entry and expansion are mainly of concern where we have observed reductions in capacity or exit by existing competitors. This is because the extent to which there are barriers which prevent new and/or existing CPs from competing to supply resellers determines whether prices to resellers could rise following a margin squeeze. We note that C&W argues that the time taken, additional cost and uncertainty in delivering new capacity represent a significant barrier to entry or expansion should a supplier seek to challenge BT for a scale contract.\text{\textsuperscript{693}}

7.222 However, as we have not seen strong evidence of either reductions in capacity or exit by existing competitors as a result of BT’s conduct, barriers to entry and expansion are of secondary concern in this case. Moreover, we do not have strong evidence of barriers being increased as a consequence of BT’s pricing behaviour.

7.223 The evidence presented at paragraphs 7.187 to 7.197 above suggests that BT’s conduct has not dissuaded competitors from bidding for contracts. In addition, none of the CPSOs who submitted views in response to the Statement of Objections provided evidence of reputational effects. We note that this is consistent with our finding that BT’s overall negative margin was associated with BT’s aggressive pricing on a very limited number of contracts (see paragraphs 7.233 to 7.236 below).

\textsuperscript{690} Verizon response to Q.2(f), November 2011 section 26 Notice.

\textsuperscript{691} Gamma response to Q2(c), November 2011 section 26 Notice.

\textsuperscript{692} Gamma and C&W responses to Q4, November 2011 section 26 Notices.

\textsuperscript{693} C&W response to draft final decision 31 January 2013 paras 3.21.and 3.22.
7.224 To the extent that network costs are sunk, we agree with BT that it would be uneconomic for a CPSO to remove its existing capacity even if its wholesale end-to-end call volumes dropped quite significantly. However, even if a CPSO had ceased to provide wholesale end-to-end calls temporarily, we recognise that re-entry could occur quickly and at relatively low cost in response to any attempt from BT to raise prices. As BT notes in its Response, the CPSO could have used its existing core network capacity and would have been entitled to purchase call termination and call origination at regulated prices. As a consequence, it is likely that the threat of re-entry was credible enough to prevent BT from being able to raise the price of wholesale end-to-end calls above the competitive level.

7.225 Moreover, barriers to expansion for CPSOs already in the market (which we considered to be relatively low in the Statement of Objections) appear to have remained low due to the continued and widespread availability of excess capacity on CPSOs’ core networks and the fact that CPSOs have not reduced their interconnection capacity. Therefore, any attempt by BT to raise the price of wholesale end-to-end call prices above the competitive level is likely to be unprofitable because resellers would be able to migrate traffic to competitors’ networks.

7.226 In light of the above, we agree with BT’s view that the threat of new entry would not have been necessary to discourage BT from raising the price of wholesale end-to-end calls. As discussed above, the information we have gathered since the Statement of Objections suggests existing network operators have continued to exert a competitive constraint on BT.

Conclusion on the existence of actual anti-competitive effects

7.227 The information that we have gathered during our investigation and since the publication of the Statement of Objections does not satisfy Ofcom that, on the balance of probabilities, BT’s conduct has actually given rise to the exclusionary effects Ofcom envisaged in its theory of harm.

7.228 While some competitors have lost volumes (and in many cases market share) to BT, the intensity of competition in the market has not weakened. Increased concentration in the market cannot be solely relied upon as evidence of an actual reduction in the intensity of competition as market shares can swing rapidly. Furthermore, the overall reduction in competitor volumes has taken place against the backdrop of a declining market, as call minutes are migrated to LLU.

7.229 We have not seen evidence that BT’s pricing conduct has directly led to market exit, while the evidence relating to CPSOs’ bidding activities suggest that they have been actively competing for reseller customers since the start of the period in which BT earned a negative margin on its Wholesale Calls product.

7.230 We have also not seen evidence that, despite the reduction in CPS calls volumes, the costs of BT’s competitors have been raised significantly and that CPSOs’ ability to exert a competitive constraint on BT has been diminished as a result. In particular, we do not have evidence that CPSOs have significantly changed the shape and size of their networks, and therefore that their marginal and/or average costs have been adversely affected.

7.231 CPs’ business strategies in terms of network investment do not appear to have been influenced by BT’s pricing of Wholesale Calls in the period between July 2008 and April 2009. The existence of significant spare capacity on CPSOs’ core TDM networks meant that the appetite for further roll-out was low. Moreover, most CPs are
focussing their investment on next-generation IP networks and IP-based products, rather than their TDM networks.

7.232 We are therefore not satisfied that the evidence demonstrates that, on the balance of probabilities, actual anti-competitive effects have arisen as a result of BT’s pricing of Wholesale Calls in the period between July 2008 and April 2009.

The reasons why anti-competitive effects have not arisen in this case

Introduction

7.233 The potential anti-competitive effects we identified in the Statement of Objections were based on the types of effect that we would typically expect to be associated with a firm engaging in a margin squeeze. However, as we have explained above, the information collected covering the period since BT started earning negative margins on the Wholesale Calls product suggests that we do not have sufficient evidence to demonstrate that these effects have arisen in this case. In the following paragraphs we therefore consider why, in this specific case, the effects that we would typically expect have not materialised.

7.234 The downstream market for wholesale end-to-end calls is one that is characterised by a degree of price differentiation. BT’s Wholesale Calls customers and those of other CPSOs face a range of price points for a broadly homogeneous product. The diversity in pricing reflects a number of factors, but most notably the buyer power of the specific reseller customer. Typically, we therefore observe those resellers that can deliver large volumes to CPSOs (for example, mass market residential resellers) receiving the best rates.

7.235 This heterogeneity in pricing amongst different resellers for essentially homogeneous services, implies that the margins earned by CPSOs, and most notably for this case, BT Wholesale, can vary significantly across the portfolio of contracts held by the firm. As we demonstrate in Table A5.1 in Annex 5, BT’s contract with [\text{Company 1}] (which is largely a \text{Contract 1} contract and delivers very significant volumes to BT) earns a very low (indeed negative) margin, while its standard base rate term contracts (i.e. those not subject to negotiated discounts) earn very considerable margins.

7.236 Reflecting this diversity in margins earned by BT across its various contracts, the starting point for understanding why anti-competitive effects have not materialised as a result of BT earning a negative margin on its Wholesale Calls product as a whole, is understanding which contracts drive that negative margin. We consider this issue first in this sub-section. We then go on to explain why the specific circumstances of those contracts imply that it is unlikely that anti-competitive effects will arise in the future.

The drivers of BT’s total product negative margins

7.237 In Section 6, we explain that BT earned a negative margin694 on its Wholesale Calls product of £[\text{ Contract 1 and Contract 2}] respectively accounted for £[\text{Contract 1}] million and £[\text{Contract 2}] million

694 For the avoidance of doubt, unless specified otherwise, references in this section to “margins” refer to margins on the adjusted EEO cost stack (including network costs).

695 For the avoidance of doubt, the product includes \text{Contract 1} and network costs.
696 If the time period for assessment is extended to December 2010 as BT suggests, the negative margin increases to £[$X$] million. [[$X$] Contract 1 and Contract 2] negative margins increase to £[$X$] million and £[$X$] million respectively.

7.238 Although the margins on both [[$X$] Contract 1 and Contract 2] were negative and significantly so, the negative margins arising from [[$X$] Contract 1] are considerably greater than those earned on [[$X$] Contract 2]. As a consequence, while the total product margins would remain negative for both the 10 and 30 month time periods absent [[$X$] Contract 2], this is not the case in respect of [[$X$] Contract 1]. Absent [[$X$] Contract 1], BT would have still earned a negative margin of £[$X$] million for the 10 month period but would have earned a positive margin of £[$X$] million for the 30 month period. There are a number of reasons why we find that these results are sensitive to the choice of 10 or 30 months. In summary:

(i) the margins (both in absolute terms and as a proportion of revenues) BT has earned on other contracts in its portfolio have improved over the longer time period (as discussed in paragraphs 6.375 to 6.379);

(ii) the margins (as a proportion of revenues) BT has earned on [[$X$] Contract 2] have improved over the lifetime of the contract (again, for the reasons set out in Section 6); and

(iii) the importance of [[$X$] Contract 2] in the Wholesale Calls contract portfolio has declined in the latter months of the contract (principally due to the migration by [[$X$] Company 2] of end users on to its self-supplied retail MPF product).

7.239 These factors contribute significantly to BT passing the total product test, absent [[$X$] Contract 1], on an EEO basis for the last 18 months of the 30 month period (i.e. July 2009 to December 2010).

7.240 As we have explained in Section 6, our principal concern in this case is whether BT’s portfolio of Wholesale Calls contracts as a whole is contestable by an equally efficient operator (i.e. that it passes the so-called “total product test”). The margin modelling results summarised above demonstrate that the existence of a negative margin at the total product level in this case is driven by the margins on [[$X$] Contract 1], in particular. Absent [[$X$] Contract 1] the evidence of negative margins across the remainder of the total product is sensitive to the time period modelled.

7.241 Given that [[$X$] Contract 1] is the key driver of the negative margin across the total product, our assessment of why we do not see evidence of anti-competitive effects arising from BT earning this negative margin starts by considering the specific circumstances surrounding [[$X$] Contract 1], and how this contributes to the likelihood of anti-competitive effects in the future. Following this, we then go on to consider the significance of [[$X$] Contract 2], before considering the potential for anti-competitive effects associated with BT’s pricing behaviour in the future.

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696 This is with network costs being treated as incremental at the individual contract level.

697 Absent [[$X$] Contract 2], the total product margins would be £[$X$] million for 10 months and £[$X$] million for 30 months.
7.242 As we explain in Section 2, in [Contract 1] BT Wholesale signed a contract with [Company 1] for the provision of Wholesale Calls. Prior to entering the contract, [Company 1] was a CPSO self-supplying its entire requirement for wholesale end-to-end calls. Following the agreement with BT Wholesale, [Company 1] continued to use its requirement for certain call traffic, but certain call traffic was carried by BT Wholesale via Wholesale Calls. As a consequence, [Company 1] for [certain call traffic] and became a reseller of Wholesale Calls. 

**Ofcom’s concerns in relation to [Contract 1]**

7.243 Given the scale of [Company 1]’s operations, particularly its domestic retail operation, the contract was expected by both BT and [Company 1] to deliver very considerable volumes and revenues to BT Wholesale over the initial 1-3 year contract period and beyond. Indeed, BT’s internal governance (CIB) papers seeking senior management sign-off for the proposed contract in anticipated revenues of around £698 over the initial 1-3 year period of the contract.

7.244 As we show in Section 6 and above, although the contract has delivered significant revenues to BT Wholesale, this has not been associated with significant profit margins. The contract resulted in negative margins for BT on an adjusted EEO basis for the period from July 2008 to April 2009 (or December 2010). Further, BT’s pricing failed to cover the upstream interconnection costs associated with the contract.

7.245 Pricing below incremental cost in the manner pursued by BT in the case of [Contract 1] can, in theory, give rise to economic distortions as the traffic may not traverse the most efficient network. Because it was cheaper for [Company 1] to buy Wholesale Calls from BT than it was to purchase the upstream interconnection, it is rational (excluding any other strategic considerations) to buy from BT rather than regardless of its efficiency in the downstream market.

7.246 While such behaviour from BT can lead to lower prices to [Company 1]’s customers in the short term (assuming that cost savings are passed on), if the pricing behaviour is part of an exclusionary strategy by BT it can be contrary to the long term interests of consumers. Such a strategy would involve, for example, BT offering CPSO competitors (such as [Company 1]) low prices for Wholesale Calls in the short term to encourage them to switch from self supply, but then subsequently increasing prices to the downstream market once rivals have effectively exited. For the incumbent this involves a trade-off; in the short term they accept low, or even negative, margins but then recoup these lost profits over the longer term when competition is reduced or eliminated.

7.247 In light of this potential concern, in the following paragraphs, we assess whether [Contract 1] has, in fact, led to or is likely to lead to anti-competitive effects.

**The efficiency effect of BT’s pricing of [Contract 1]**

7.248 BT’s economic arguments in relation to the potential for [Contract 1] to permit the avoidance of some economically inefficient investment are a relevant consideration. 

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698 BT CIB paper, dated [Contract 1].
Nonetheless, it is not clear that the existence of these efficiency savings justifies the low pricing that BT pursued on [⧍ Contract 1]. BT’s prices were below [⧍ Company 1’s] upstream interconnection costs. [⧍].699

**Direct exclusionary effects**

BT’s Response places considerable emphasis on the fact that its deal with [⧍ Company 1] was not subject to competitive bidding. BT argues that this means that exclusionary effects could not arise as a consequence of the agreement and consequently it should be excluded from our analysis.700

Although it is not clear whether BT first approached [⧍ Company 1] or vice versa, it is clear from the section 26 responses of both BT and [⧍ Company 1] that no other firm was involved in the arrangement. [⧍ Company 1] explained to Ofcom that “[☞ Company 1] did not approach any other communications provider”,701 and that it did not need to benchmark BT’s offer against competing offers, [☞ since its own cost base was very low].702

[⧍ Company 1] also indicated that it would not have chosen to purchase Wholesale Calls from BT if BT’s charges had been the same as [⧍ Company 1]’s costs of [☞]. [⧍ Company 1] told Ofcom that, in assessing BT’s bid, [☞ Company 1] “took the view that the Wholesale Calls deal would have to cost in on calls costs alone (ignoring any potential savings on [☞]).”703 This suggests that, although [☞] another CPSO could have competed if BT had not priced so low, it is unclear whether [☞ Company 1] would have considered any such offer. In fact, [☞ Company 1] appears to have assessed the bid against [☞] excluding other costs. In other words, had it been offered a price above interconnection costs, [☞ Company 1] would most likely have continued to [☞]. However, since interconnection costs represent the minimum short run marginal cost that any CP would face in providing wholesale end-to-end calls, pricing below that level would result in the CP making losses. It is therefore unclear why any CPSO would have been willing to price so low.

Therefore, on this basis and consistent with BT’s arguments, we accept that BT’s pricing for [☞ Contract 1] did not give rise to any direct exclusion of third party CPSOs. Third party CPSOs could not have sold to [☞ Company 1] at a price they would have regarded as commercially viable; therefore there was no deal from which competing CPSOs were excluded. However, BT should not derive comfort from this characteristic of the contract in isolation as its pricing conduct can still give rise for concern if it could lead to the exclusion of [☞ Company 1] itself.

Competition law seeks to protect competition on its merits for those elements of the value chain that are contestable. By protecting such competition, consumers are able to benefit through the lower prices associated with output being delivered over the most efficient infrastructure. Absent from the protection of competition law, vertically integrated operators would be at liberty to engage in the types of exclusionary

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699 [☞].

700 BT Response, paragraph B.87.

701 [☞].

702 Notes of the meeting with [☞ Company 1], 25 November 2008. [☞].

703 [☞].
strategies identified above. Where such strategies lead to the successful elimination, or weakening, of competition to the vertically integrated firm in the downstream market, consumers will fail to gain from the benefits of competition.

7.255 Therefore, in our view, BT should not draw comfort from the mere fact that its discussions with [X Company 1] were on an exclusive and bilateral basis. Although it appears that third party CPSOs were not excluded by BT’s pricing behaviour on this occasion, the exclusion of [X Company 1] can still give rise to anti-competitive effects. While [X Company 1] may still be competing with BT on the downstream market to supply resellers with wholesale end-to-end calls, it is to a greater or lesser extent dependent on BT Wholesale Calls to enable it to compete.

7.256 Although the exclusive nature of its negotiations with [X Company 1] is not sufficient in its own right to mitigate competition concerns in this case (because of the risk of exclusion of [X Company 1] itself), we recognise that it contributes to alleviating the concerns when combined with one other critically important factor; the specific terms of the contract. We agree with BT that its limited ability to unilaterally terminate the contract has important implications for its ability to exclude [X Company 1] from the downstream market, and therefore, the scope of anti-competitive effects that can arise from the contract. These specific contract terms mean that it would be very difficult for BT to successfully adopt the type of exclusionary strategy discussed above.

7.257 As it stands, as long as [X Company 1] meets the minimum spend levels and does not breach the contract in some other way (which we would not expect in the normal course of events), there is no prospect of BT, under the contract, being able to foreclose [X Company 1] from the downstream market by either removing its supply or by increasing its input costs to render it uncompetitive. As a consequence, BT is unable to generate the long term benefits that would typically be associated with an exclusionary strategy. Furthermore, although [X Company 1] informed us that it now expects the contract to last for several years, if favourable alternatives of supply to BT emerge for [X Company 1] it is at liberty to switch to those alternatives as it is outside the minimum period for the contract. Therefore, [X Company 1] is not locked into the contract with BT Wholesale if that contract becomes unfavourable to it in the future.

7.258 In summary, while BT’s conduct substantially undermines the incentives for [X Company 1] to use [X] its entire wholesale end-to-end calls requirement, there is no clear mechanism for BT’s pricing behaviour on [X Contract 1] to directly lead to [X Company 1]’s foreclosure from the downstream market in the future. Indeed, as BT notes, the contract provides [X Company 1] with a strong competitive position as it allowed “[X Company 1] to outsource a proportion of its wholesale end-to-end calls business to BT for an indefinite period”, enabling it to obtain “the commercial benefit of the contract and became better able to compete for the business of resellers”. Given that BT’s conduct also does not appear to have had the ability to directly

704 For an explanation of the circumstances in which the contract can be terminated, or charges amended, see paragraphs 3.45 and 3.46.

705 [X].

706 [X].

707 BT Response, paragraph 8.
exclude other, third party CPSOs either, it seems highly unlikely that [Contract 1] could be associated with a direct exclusionary effect on competition in this case.

7.259 We note that BT appears to argue that because its negotiations with [Company 1] did not involve other parties, that the pricing floor for competition law purposes should differ in this case (i.e. it should be lower). It suggests that it would not have been able to win the contract at the levels that we argue are required by competition law. We disagree. As we have discussed above, the application of competition law in margin squeeze cases seeks to protect downstream competition on its merits. Therefore, and as set out by the European Court of Justice708, the relevant threshold for considering the appropriateness of BT’s pricing is principally its own long run incremental costs of provision, not the costs of its rivals. If BT is able to more efficiently provide the service than its competitors, then pricing in line with the costs of an equally efficient operator should ensure that it is still able to win the contract. If the rival is more efficient (i.e. pricing below the costs of an EEO is required to win the contract), then it is unlikely to be economically efficient for the vertically integrated firm to provide the service rather than the competitor unless there are other relevant factors to take into account. As set out in detail in Section 6, we therefore do not think that the circumstances of this case suggest a departure from the principles set out by the European Courts with the use of an alternative test to the EEO is appropriate.

7.260 Although the likelihood of direct exclusionary effects associated with [Contract 1] seems low, theoretically there is scope for the contract to give rise to indirect exclusion. We consider the likelihood of such effects in this case in the paragraphs below.

**Indirect exclusionary effects**

7.261 The scope for indirect exclusion in this case arises from the specific nature of [Contract 1], in particular that [Company 1] is both a customer of BT Wholesale Calls and a competitor to BT Wholesale Calls (and BT Group more generally at the further downstream level). Because its contract with BT enables [Company 1] to buy Wholesale Calls at a price that is below the upstream interconnection costs that it (and all other CPSOs) would face if it self-supplied wholesale end-to-end calls, [Company 1] potentially has a cost advantage over its competitors in bidding for reseller contracts in the downstream market. This potential advantage could give rise to competitive distortions (as argued by C&W709) and, if the advantage was large enough, at the extreme it could lead to [Company 1] foreclosing competitors from the downstream market (i.e. indirect exclusionary effects). This could include BT, unless it was able to meet [Company 1]’s pricing which would likely lead to further margin losses.

7.262 We note that because the price BT charges [Company 1] for Wholesale Calls is below the upstream interconnection costs for the calls (much of which is payable to BT), BT would make more profit from [Company 1] self-supplying its wholesale end-to-end calls requirement (e.g. through CPS) than selling it Wholesale Calls. As a consequence, if [Company 1] was able to use the price advantage it receives from BT as a consequence of its Wholesale Calls contract to attract minutes from other CPSOs, BT’s loss of margin will increase. Therefore, although BT’s pricing could enable [Company 1] to foreclose competitors in the downstream market, such

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708 See paragraphs 6.57 to 6.72.

709 C&W Response of 31 January, paragraph 3.34.
behaviour would not appear to be in BT’s commercial interests (given that it cannot subsequently exclude [\(<\) Company 1] by withdrawing its supply or increasing its prices in such a way as to render [\(<\) Company 1] uncompetitive].

7.263 Although indirect effects could theoretically give rise to anti-competitive effects, given that we consider the likelihood of direct effects to be low in this case, we would require sufficient evidence associated with indirect effects in order for us to rely on them to support a finding that, on the balance of probabilities, there has been a breach of competition law. As we explain below, we do not believe that this standard is met in this case. Specifically, the evidence available suggests that, consistent with the lack of evidence of direct effects, such indirect effects have not actually materialised in the downstream market and are unlikely to materialise in this case.

7.264 If indirect effects are relevant in this case we would expect to observe in the period since entering its contract with BT evidence of [\(<\) Company 1] winning significant business from its competitors in the downstream market. As we can see from Table 7.4 above, once we account for the difficulties in interpreting the market share data associated with BT winning [\(<\) Contract 1 and Contract 2] and [\(<\)], [\(<\) Company 1]’s share of the volumes appears to have declined slightly between April 2008 and April 2011 (from [\(\geq 20-30\%\)] to [\(\geq 20-30\%\)]). The market share data therefore does not appear to support the existence of an indirect exclusionary effect associated with [\(<\) Contract 1].

7.265 Although there was a modest increase in [\(<\) Company 1]’s share of volumes excluding [\(<\) Contract 1, Contract 2] and [\(<\)] volumes between April 2009 and April 2010, this increase was not the result of a generalised increase in the number of reseller contracts [\(<\) Company 1] held, nor a generalised increase in minutes across a number of existing contracts. Rather the increase appears to have been the result of [\(<\)].

7.266 There is no evidence in the responses received to the November 2011 section 26 Notices that CPSOs have been systematically losing reseller customers to [\(<\) Company 1]. If indirect competitive effects were a material concern in this case we would expect CPSOs competing with [\(<\) Company 1] to have mentioned losing out to it. However, [\(<\) Company 1] did not emerge as a systematic winner in the CPs’ responses (see paragraph 7.191 above). We consider that this important market context supports the absence of an indirect effect in this case.

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710 On the other hand to the extent that at least some of the volume would in the alternative be lost to LLU or cable, BT would find it profitable to sell Wholesale Calls to [\(<\) Company 1] rather than wholesale call origination at a higher price.

711 Although Table 7.4 also suggests that C&W/THUS and Gamma’s shares of volumes excluding the [\(<\) Contract 1, Contract 2] and [\(<\)] volumes have declined over the period that [\(<\) Company 1]’s share has only declined slightly, there are specific reasons that explain the main volume shifts that underlie these reductions in market share. We set these reasons out in paragraph 7.169 above.

712 Based on the evidence available to us, it does not appear that [\(<\)] was previously supplied by any of the CPSOs for which we have information.

713 Although we recognise that CPSOs do not always have visibility of who they are losing customers to, the responses to our section 26 notice suggest that the general level of awareness is relatively high.
7.267 Furthermore, although caution is required in drawing strong conclusions from it, the evidence on the number of contracts held with CPSO resellers presented in Table 7.5 also does not point to an indirect exclusionary effect associated with the [Contract 1]. Based on the evidence in Table 7.5, it appears that between April 2008 and April 2011, Gamma, C&W/THUS, Verizon and BT have all increased their number of contracts by more than [Contract 1].

7.268 Overall, we therefore consider that the evidence we have gathered since the publication of the Statement of Objections does not point to BT’s pricing of [Contract 1] causing indirect anti-competitive effects in the downstream market.

7.269 C&W argues that [Contract 1] may have spill over consequences on the wider retail market, as [Company 1]’s competitors may have been harmed through [Company 1]’s ability to sustain lower pricing due to its continued access to low prices for Wholesale Calls from BT. However, competition in the retail market is not solely driven by price and takes place over a range of products, of which calls is only one. Moreover, we have not been given or identified evidence to demonstrate that [Company 1]’s performance in the retail market has been materially stronger than its competitors, and that this was a consequence of prices [Company 1] was paying BT for Wholesale Calls. Given this, and our conclusion that there is limited evidence that BT’s pricing of [Contract 1] has caused indirect anti-competitive effects on the wholesale end-to-end calls market, we do not consider that it is likely that BT’s pricing has had an anti-competitive effect on the wider retail market.

**Conclusions on [Contract 1]**

7.270 As we set out in Section 6, BT’s pricing for its Wholesale Calls product over the period July 2008 to December 2010 failed to maintain sufficient margin between its upstream and downstream prices to cover its downstream costs. However, absent [Contract 1], the evidence of insufficient margins is sensitive to the time period modelled. [Contract 1] is therefore central to this case and our assessment of the potential for anti-competitive effects to arise from BT’s pricing conduct.

7.271 As we have set out in paragraphs 7.250 to 7.260 above, [Contract 1] arose from exclusive bilateral negotiations between BT and [Company 1]. No other CPSO was involved in the discussions. The reason for this was that [Company 1] was not prepared to accept an offer to supply its wholesale end-to-end calls requirement that any CPSO other than BT would commercially be prepared to offer. Therefore, there was no deal from which competing CPSOs were excluded.

7.272 Further, BT’s limited ability to terminate the contract between [Company 1] and itself means that, in addition to not excluding other CPSOs, the contract cannot result in the exclusion of [Company 1] itself. By effectively agreeing to supply [Company 1] on favourable terms for an indefinite period BT has restricted its ability to raise its prices to [Company 1] in the future and force [Company 1]’s exit from the downstream market.

7.273 Given that no CPSO was excluded from securing [Contract 1] and there is no realistic prospect of [Company 1] itself being excluded from the downstream market in the future, we do not find there to be evidence of a direct exclusionary effect in this case. Moreover, we find that [Contract 1] was beneficial for [Company 1] as it allowed [Company 1] not to [Contract 1].

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714 C&W Response 31 January 2013, paragraph 3.34.
We have also considered whether [▷ Contract 1] could be associated with indirect anti-competitive effects arising from the favourable terms it receives from BT. Given the low likelihood of any direct effects associated with the contract, we would need to have clear evidence of the potential for indirect effects in order to demonstrate a margin squeeze. The evidence we have gathered does not, in our view, allow us to conclude on the balance of probabilities that this is the case.

Implications of the lack of effects associated with [▷ Contract 1]

In paragraphs 7.233 to 7.274 above we have explained why we think that anti-competitive effects are unlikely to arise as a consequence of [▷ Contract 1]. On this basis, and for the purposes of understanding why we have not observed clear evidence of anti-competitive effects having arisen as a consequence of the total product negative margin, it is appropriate to consider the results of the margin modelling excluding [▷ Contract 1].

In paragraphs 7.227 to 7.232 above we explain that the evidence of BT's negative margin across the Wholesale Calls product is sensitive to the time period being modelled absent [▷ Contract 1]. Specifically, while we observe some evidence of a negative margin being earned for the 10 month period to April 2009, if we expand the period considered in the modelling to the 30 months to December 2010 this is no longer the case. Not only does BT earn a positive margin in each of the final 18 months in the period, but the margin for the 30 month period as a whole is positive. Furthermore, these margin estimates are derived on the basis of all minutes incurring BT call origination costs and network costs being fully included as incremental to the Wholesale Calls product. As we have set out in Section 6, BT disagrees with our approach to these two issues. To the extent that BT's arguments have merit, they would further suggest that the evidence of a negative margin across the Wholesale Calls product absent [▷ Contract 1] is weaker.

On this basis, given that there does not appear to be clear evidence of a negative margin for the total product absent [▷ Contract 1], the remaining portfolio of contracts (i.e. all contracts excluding [▷ Contract 1]) for the period under consideration (in particular the 30 month period ending December 2010) appears to be broadly contestable for operators who are as equally efficient as BT. Therefore, it appears unlikely that the contracts other than [▷ Contract 1] (which we discuss above) could have been associated with anti-competitive effects. This conclusion is consistent with the analysis presented in paragraphs 7.214 to 7.220 above, which shows that we do not have strong evidence of competition in the downstream market being reduced, or the competitive position of competitors being eroded as a consequence of BT's pricing for Wholesale Calls between July 2008 and April 2009 (or the longer period to December 2010).

[▷ Contract 2]

In this sub-section we consider whether the particular circumstances surrounding [▷ Contract 2] suggest that the pricing on this contract alone could have an anti-competitive effect regardless of the outcome of the total product test.

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715 We have focussed on [▷ Contract 2] rather than any of the other six contracts for which we have identified negative margins (see Annexes 4 and 5) because, as we explain in paragraph A5.4, the negative margins on these contracts are small (particularly in cash terms). As a result the negative margins on these contracts are very sensitive to our modelling approach (particularly the time period modelled). On this basis it seems highly likely that any possible effects on competition would be very
We explain in paragraphs 6.51 to 6.54, that consideration of specific contracts in isolation may be needed in certain circumstances. In particular, this may be where the circumstances of an individual contract suggest that pricing below cost on that contract alone may give rise to effects on competition. For example, we explain that if a contract could be considered a ‘competition enabler’, specific consideration may be necessary (although this would depend upon the nature of competitive conditions in the particular case being considered).

A contract could be characterised as a ‘competition enabler’ in circumstances where there are strong economies of scale and different competitive conditions in providing a service. In such cases, by pricing below appropriately measured incremental cost for large volume contracts, the incumbent can deny the competitor the opportunity to reduce unit costs through scale effects by making it very difficult to win the more contestable contracts. In the case of wholesale end-to-end calls, such an effect could potentially arise as a result of the cost advantages for CPSOs associated with DLE interconnection. In particular, if a loss of volumes is sufficient to undermine the business case for retaining interconnection at a DLE via, for example a leased interconnection circuit, then the CPSO’s marginal costs of providing wholesale end-to-end calls will increase to reflect: (i) the requirement to pay LTC on each minute where the CPSO is interconnected at the tandem layer rather than the DLE layer; and (ii) the lost opportunity to benefit from the lower call origination and call termination costs associated with CPS SAD.

Evidence supplied by [Company 2] on its procurement process suggests that the appropriate counterfactual to BT winning [Contract 2] was, in fact, [Contract 2] winning the contract (not the incumbent [Contract 2]). Therefore, the only firm that could have been inappropriately denied any potential scale effects in this case is [Contract 2].

In its response to our draft final decision, C&W indicates its belief that if BT had not won [Contract 2] then it would have won the contract and disputes a conclusion that there could not have been harm to them as a result of not winning the contract. However, although [Contract 2] involved considerable volumes, at the time of bidding for the contract C&W was already operating at very high levels of DLE interconnection so any scale effects for it from winning [Contract 2] would have been very limited. [Contract 2].

On this basis, we consider it highly unlikely that winning the additional volume and scale associated with [Contract 2] would have produced any significant marginal cost benefit for [Contract 2]. Therefore, failing to gain the contract is unlikely to have impacted [Contract 2]’s (or indeed any other CPSO’s) ability to competitively bid for future contracts in the downstream market. [Contract 2].

Therefore, in our view, although [Contract 2] margins associated with it were negative (over both the 10 and 30 month periods), there is no particular reason in this case to individually consider the effects of [Contract 2] in addition to the total limited. In any event, we have not seen any evidence to suggest that the particular circumstances of any of these contracts could have an anti-competitive effect.

We note that the assessment in the paragraphs below is focussed on addressing the specific question of whether an individual analysis of the potential anti-competitive effects of [Contract 2] is necessary in addition to the total product analysis, i.e. whether [Contract 2] alone could raise particular concerns.

See paragraph 3.49.
product. This is consistent with the finding in paragraphs 7.214 to 7.220 that we do not have sufficient evidence to demonstrate that the competitive position of any of BT’s downstream (CPSO) competitors has been eroded as a consequence of BT earning a negative margin on the Wholesale Calls product as a whole.

Potential for competitive effects arising from BT’s pricing conduct

7.285 In the sub-sections above we have set out our view that:

(i) We do not have clear evidence that any of the potential effects that we identified in the Statement of Objections have materialised in the period since the start of the period of alleged anti-competitive pricing (i.e. July 2008).

(ii) Specifically, there is no evidence of competition in the downstream market being reduced or the competitive position of competitors being eroded as a consequence of BT’s pricing for Wholesale Calls between July 2008 and April 2009.

(iii) The negative margins earned by BT on the total Wholesale Calls product over the period July 2008 to April 2009 were principally driven by [Contract 1]. Absent [Contract 1], the evidence of a total product margin squeeze is sensitive to the time period being modelled. In particular, while margins on the total product may be negative over the 10 months to April 2009, they become positive when we consider the longer 30 month period to December 2010. Absent [Contract 1] the margins on the total product in each of the 18 months up to December 2010 were positive (and as such these contracts as a whole over this period were contestable by an equally efficient operator).

(iv) The specific circumstances of [Contract 1] imply that the types of anti-competitive effects that we would typically expect to be associated with pricing below appropriately measured incremental cost are unlikely to occur in this particular case.

7.286 In paragraphs 7.18 to 7.33 above we explain that we are required to have clear evidence of actual or potential anti-competitive effects arising from the allegedly abusive pricing conduct in order to make out a case of margin squeeze, as set out in Section 3. Given the above, and the evidence we have identified which explains why the potential effects identified in the Statement of Objections have not materialised, we are not satisfied that we have sufficient evidence to conclude that those potential effects identified in the Statement of Objections were, in fact, likely to materialise. Therefore, while we do not consider that the evidence we have gathered supports a finding of margin squeeze in respect of actual effects, or potential effects, a finding of abuse could be supported if we can demonstrate that the potential for anti-competitive effects still remains. In this sub-section we explain why we do not consider that the evidence we have gathered supports such a conclusion.

7.287 We have not found evidence of actual anti-competitive effect as a result of BT’s behaviour to date. Therefore, in order to find that there has been a breach of competition law, we need to consider that there is still potential for anti-competitive effects to arise. In order to conclude that there is still potential for anti-competitive effect, we need to consider it likely that the competitive dynamics resulting from BT’s behaviour in the relevant period will change sufficiently in the future.
For the reasons summarised above, we consider that the circumstances of this case, and the evidence of what has actually happened to competition in the downstream market since 2008, make it unlikely that the effects we considered in the Statement of Objections will occur in the future.

On this basis, we conclude that, based on the specific circumstances of this case, it is unlikely that BT’s pricing conduct for Wholesale Calls between July 2008 and April 2009 still has the potential to generate exclusionary effects on competitors in the downstream market.

Conclusion on the existence of actual or potential anti-competitive effects associated with BT’s pricing conduct

We have carried out an extensive and detailed review of the information available to us. For the reasons set out above, we do not consider that we have sufficient evidence to conclude that BT’s pricing conduct has led to anti-competitive effects, despite the period during which we have found BT to have earned negative margins starting in 2008. In addition, given our assessment of and evidence as to why those potential effects identified in the Statement of Objections have not materialised, we are not satisfied that we have sufficient evidence to conclude that those potential effects identified in the Statement of Objections were, in fact, likely to materialise. Moreover, it seems unlikely that BT’s conduct has the potential to have anti-competitive effects in the future.

We are therefore not satisfied that the evidence is sufficient to demonstrate that actual or potential anti-competitive effects arise as a result of the negative margins earned by BT on its Wholesale Calls product between July 2008 and April 2009. As a result, we do not consider that we have sufficient evidence to conclude that BT has infringed the Chapter II prohibition or Article 102 TFEU.

See bullets (iii) and (iv) in paragraph 7.285, which are explained in detail in paragraphs 7.221 to 7.274.
Section 8

Conclusions

8.1 In this Section we address the points made by BT regarding objective justification and those made by C&W regarding penalties before we set out our final conclusions as to whether BT has contravened the Chapter II prohibition and Article 102 TFEU.

Objective Justification

BT’s Response

8.2 In its Response, BT notes that Ofcom fails to discuss whether there may have been any objective justification for BT’s pricing conduct and sets out arguments as to why its conduct was justified even if, contrary to BT’s views, it has produced an exclusionary effect.719

8.3 BT claims that its conduct amounted to no more than a reasonable and proportionate attempt to defend its own commercial position in the face of competition from other communications providers.

8.4 BT further argues that its conduct facilitated pro-competitive efficiencies by enabling lower prices for end consumers and facilitating the efficient use of excess network capacity. By offering [>> Company 1] prices that were lower than it would have been able to achieve using its own TDM network, BT claims that it has facilitated [>> Company 1]’s network optimisation and efficient investment.

Ofcom’s conclusions

8.5 As BT notes, it is well established in case law that conduct will not be prohibited under Article 102 TFEU and Chapter II where the firm under investigation can demonstrate that its conduct is objectively justified. As the ECJ has made clear: “…an undertaking remains at liberty to demonstrate that its pricing practice, albeit producing an exclusionary effect, is economically justified”720. The onus is therefore on the firm under investigation to raise the issue and submit evidence to demonstrate that its actions were objectively justifiable.

8.6 The Response is the first occasion on which BT has raised the question of objective justification and submitted evidence and arguments to explain why its conduct, even if it did impact on competition, was nevertheless objectively justified. Therefore Ofcom did not discuss the issue in any detail in the Statement of Objections.

8.7 In light of Ofcom’s conclusions in Section 7 that BT’s conduct has not had any actual or potential anti-competitive effects, and that as a result we do not consider that on the balance of probabilities, BT has infringed the Chapter II prohibition or Article 102 TFEU, we do not consider that it is necessary to assess whether there was economic justification for BT’s conduct. We therefore make no conclusions as to whether BT’s conduct was objectively justified.

719 See paragraphs D.307 to D.344 of BT’s Response.

720 Paragraphs 75 and 76 of the ECJ’s decision in TeliaSonera.
Penalties

8.8 In light of Ofcom’s conclusions in Section 7 that BT’s conduct has not had an anti-competitive effect and that there is no evidence that it will have such an effect in future, we conclude that there is insufficient evidence to demonstrate that BT has contravened the Chapter II prohibition or Article 102 TFEU. As such, it is unnecessary for us to consider the parties’ representations in relation to penalties as we have no grounds on which to impose a penalty.

Ofcom’s findings

8.9 For the reasons set out in the preceding sections of this document, in applying the balance of probabilities, we are not satisfied that the quality and weight of the evidence is sufficiently strong to find that BT has acted unlawfully in infringing the Chapter II prohibition and Article 102 TFEU.

8.10 We have therefore closed our investigation and are issuing this no grounds for action decision.721

Signed:

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SE1 9HA

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721 This does not constitute a non-infringement decision. The ECJ has made clear that only the European Commission is empowered to make a finding that there has been no breach of Article 102 TFEU and that national competition authorities can only decide that there are no grounds for action on their part: Case C-375/09 Prezes Urzedu Ochrony Konkurencji i Konsumentow v Tele 2 Polska sp. z o.o., judgment of the Court (Grand Chamber) of 3 May 2011.
Section 9

BT’s governance procedures

9.1 As discussed in Sections 6 and 7, our analysis demonstrates that BT made negative margins, consistent with those typically seen in margin squeeze cases, in the period July 2008 to April 2009. Although adverse effects have not actually arisen as a result, and we consider it unlikely that they will in future, offering services where there is such negative margins would seem to increase the risk for a dominant undertaking in relation to its compliance with competition law.

9.2 An undertaking that is dominant in a variety of upstream markets has a “special responsibility” not to allow its conduct to distort competitive conditions on those markets or on other linked or downstream markets. This means that it should have in place adequate processes and procedures to check that the pursuit of commercial goals do not put at risk its overall compliance with competition law.

9.3 As set out in Section 6, as part of its governance process, BT explained that it carried out “competition law compliance checks” at each of the indicative bid, firm offer and contract signature stages. This included the use of financial models to check that the call prices and predicted call volumes in a particular contract allowed BT to recover its efficiently incurred costs for that contract and “achieve a positive margin above the [cost] floor” for each contract. BT provided us with the detail of this process.

9.4 If the intention of BT’s modelling and governance process was to ensure that it earned a positive margin on Wholesale Calls contracts, then it does not seem to have been successful. Despite applying its governance process when bidding for contracts, BT still earned negative margins on some individual contracts and on the product as a whole. BT may well wish to reconsider how its model and governance procedures operate when bidding for contracts in future.

9.5 BT’s initial governance model appears to have been based on the approach that Ofcom took to modelling margins in the first investigation into BT’s Wholesale Calls pricing in 2005. An important part of this process was the financial modelling of the margins that were expected on contracts for which BT was bidding, with all bids required to earn margins above the cost floor of a notionally efficient CPSO. BT therefore had considerable insight as to how to assess its margins but increasingly departed from this approach.

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722 BT response dated 9 September 2008 to question 24 of 1st section 26 Notice.


725 Complaint from Gamma Telecom Limited against BT Wholesale about reduced rates for Wholesale Calls from 1 December 2004 (the “Gamma Telecom” investigation), 13 June 2005: http://stakeholders.ofcom.org.uk/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw_802/.
9.6 The contemporaneous documents that we obtained from BT during the course of the investigation\(^{726}\) indicate that between 2006 and 2008, BT’s strategy in terms of Wholesale Calls pricing was to seek to compete more vigorously in the wholesale end-to-end calls market. BT’s Wholesale Calls department was struggling to win new business from established CPS rivals and felt it was under pressure of losing customers to CPs using new technologies such as LLU and VoIP. The strategy was identified in one 2006 document as being to grow market share “from the current 06/07 outturn \(\times\)% of the addressable market to \(\times\) 15%-25%\] of the addressable market within 2 years”.\(^{727}\) BT identified that there were “some opportunities to push back on Ofcom’s previous interpretation of the rules. The potential to make use of this more aggressive stance on pricing is being reviewed by Finance, WRAD\(^{728}\) and Pricing colleagues, to identify changes that could be justified. This is naturally subject to legal advice”.\(^{729}\)

9.7 This strategy led to BT departing from its initial governance modelling, with BT Wholesale’s senior management at the time appearing to focus on revenue generation.\(^{730}\) BT explained to us that in order to better compete when bidding for contracts, it revised a number of the modelling inputs as it sought to develop a model that it believed was more in line with the cost base faced by CPoSOS.\(^{731}\)

9.8 We appreciate that the competitive dynamics of markets evolve over time, and that BT needs to adapt to such changes to ensure it competes effectively; ultimately consumers benefit from BT competing strongly where such competition is on its merits. However, the amendments that BT subsequently made to its governance modelling were such that their cumulative effect was to increase the risk that BT would earn negative margins if the revenue generated by those contracts differed much from that anticipated in the modelling.

9.9 BT states that the adjustments made to its pricing were not a “cynical attempt to circumvent governance checks but rather an attempt to price competitively while staying within the restrictions imposed by competition law”.\(^{732}\) While we have found no evidence that there was a deliberate intent on BT’s part to carry out an abusive margin squeeze, and we understand the commercial pressure BT was under when competing for these contracts, our analysis of BT’s modelling in Section 6 suggests

\(^{726}\) As part of our investigation we used our powers under section 26 of the Act to obtain internal documents from BT relating to its Wholesale Calls business. Around 33,500 documents were obtained from BT.


\(^{728}\) WRAD was the name at that time of BT Wholesale’s internal regulatory department.

\(^{729}\) BT internal document dated 9 April 2006 titled ‘Briefing for \(\times\): Wholesale Calls: Why we are not winning customers’. DOC ID 03084.

\(^{730}\) An example of this was a CIB paper on the \([\times\) Company 2\] bid (dated 11 December 2007), which highlighted that “winning this deal is imperative to meeting QPB [Quarterly Plan and Budget] targets”.

\(^{731}\) An email from \([\times\) (Head of Wholesale Calls), dated 28 June 2006, to several key Wholesale Calls personnel noted that: “In reality out [sic] competitors price at marginal cost FAC [fully allocated cost]. I think we need to look at doing so too, otherwise we are constraining ourselves. I also think we should look at building up from scratch what a competitor would do rather than using BT’s costs as proxy for an efficient CPSO”.

\(^{732}\) BT Response, paragraphs B.67 to B.69.
that the pressure to win contracts led to modelling changes that seem to have suggested to BT that the contracts would be profitable but which, as outlined in full in this document, resulted in negative margins on some contracts. It would seem desirable that an effective compliance process should have identified that this was a real risk and questioned whether the inclusion of such assumptions was appropriate.

9.10 BT recognises that, "with the benefit of hindsight", it "could have done better" in relation to governance modelling. As a result, we understand that BT has made amendments to its modelling and governance processes and that these now better reflect the approach that we have set out in Section 6.

**Next steps**

9.11 We will be writing to BT to highlight those areas of its previous governance process where we have concerns. We will also be asking for further information from BT regarding the adjustments that it has made to its governance procedures and seeking assurances that going forward robust processes and procedures are in place.

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Annex 1

The different business models of the CPSOs

A1.1 As explained at paragraphs 2.10 to 2.17 above, by purchasing CPS and interconnection services from BT, network operators are able to supply CPS-based wholesale end-to-end calls for resale. This allows greater utilisation of a network that may originally have been established to provide other services. In other words, supplying CPS-based calls is a means for operators of a network of sufficient size to extract additional value from network assets in addition to their core activities. The importance of supply of wholesale end-to-end calls will vary amongst CPSOs, according to the portfolio of services offered and where wholesale end-to-end calls sit within that mix.

A1.2 As noted at paragraphs 3.53 to 3.56 above, the number of CPS lines peaked at nearly 6.5 million lines in June 2006 but has since declined to under three million lines. CPS and IA call volumes continued to increase during 2007 and 2008 but have also decreased in recent years. At the same time, the number of CPSOs has fallen considerably since 2005 as market consolidation has taken place.

A1.3 BT internal documents from March 2005 noted that there were 24 CPSOs providing services at January 2004, but that further consolidation was expected. At that time, BT identified the top five CPSOs as [≥].734 By July 2008, BT considered the main CPSO competitors to BT Wholesale to be [≥].735

A1.4 Our investigation has found that during the period under investigation, there were 12 network operators in the UK active as CPSOs (i.e. were using their networks for supplying CPS-based wholesale end-to-end calls). Of this 12, five CPSOs are capable of using their own core networks for the conveyance (as opposed to just the origination and termination) of the overwhelming majority of calls since they have core networks that are connected to nearly all of BT’s 668 DLEs (see Table A1.1).

A1.5 Those CPSOs with fewer connections to BT’s DLEs offer wholesale calls in part by utilising their own core network, and in part through contracting with BT for local tandem conveyance ("LTC"). They might also choose to contract with another competitor network to transit some calls. Also active as CPSOs during the period of the investigation, albeit to a lesser extent, were [≥]. Their relative market shares over the period are discussed in Section 5.

734 British Telecommunications plc Ventures Form Paper – E-Z-Calls – BTW Managed calls solution packaged with Wholesale access, Draft 1.0, Author: [≥], Date 7 March 2005. ID 00006.

Table A1.1: CPSO DLE interconnection with BT

Source: Ofcom, based on section 26 data.

A1.6 We provide below short overviews of a selection of the CPSOs and describe where the supply of wholesale end-to-end calls sits within their business strategies and range of products. The relative positions of the various CPSOs in relation to BT and each other in the provision of wholesale end-to-end voice calls is discussed in Section 7 in the context of our analysis of the impact of BT’s pricing behaviour.

C&W

A1.7 C&W Worldwide operates a fixed line network supplying voice, data and IP-based services and applications to large corporations, governments, CPs and resellers in the UK and overseas.

A1.8 C&W’s UK fibre network has interconnection at all of BT’s DLEs across the country. C&W’s LLU operations are present in 864 unbundled exchanges in the UK, covering around 56% of the population.\(^{736}\)

A1.9 C&W has evolved through a number of divestments and acquisitions. In 1981, it created Mercury Communications as the first competitor to BT to provide fixed line telecommunications services in the UK. In 2004 it purchased Energis (the former fixed line network operator previously owned by National Grid). In 2008 C&W completed the purchase of THUS Group plc. A new company, THUS Limited, has been set up as a stand-alone business within the Cable & Wireless Worldwide Group.\(^{737}\)

A1.10 In the UK the C&W brand is focused on large customers including other CPs and the THUS brand on SMEs. C&W currently provides CPS at a wholesale level to resellers while THUS acts as a vertically integrated reseller, providing CPS to small and medium sized businesses.\(^{738}\)

A1.11 Revenues for C&W Worldwide for the 2010/11 financial year were £2,257 million. In the UK these revenues were split between enterprise (£849 million), public sector (£285 million), wholesale services to other CPs (£354 million), and mid-market (£212 million) segments, whilst the remaining revenue was generated from the global business.\(^{739}\) C&W investor documents indicate a trend across revenue

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\(^{737}\) In 2006 the company internally re-structured into two standalone divisions – Cable & Wireless International (since renamed the Cable & Wireless Communications Group) and Cable & Wireless Europe, Asia & US (EAUS), (since renamed the Cable & Wireless Worldwide Group). In November 2009, the Cable and Wireless plc Board announced its intention to separate the Cable & Wireless Communications Group and the Cable & Wireless Worldwide Group which was completed in March 2010. [http://www.cwworldwide.com/about-cable-wireless-worldwide](http://www.cwworldwide.com/about-cable-wireless-worldwide).


streams is the continuing decline of traditional voice (down to £995 million from £1,047 million in 2009/10) while revenue from IP and data services (£999 million) and hosting and application services (£263 million) grows.740

A1.12 C&W was acquired by Vodafone Europe B.V. in July 2012.

TalkTalk Group (Opal)

A1.13 The TalkTalk Group is a CP serving both residential and business customers. Having demerged from the high street and online retail business of the Carphone Warehouse Group plc in March 2010, the TalkTalk Group is made up of TalkTalk Business (formerly known as Opal)741 and TalkTalk Residential. Historically Opal was the name given to the part of the business which operated the network assets of the Carphone Warehouse Group. [✂].

A1.14 Opal describes itself as “the UK’s third largest communications network operator”.742 It operates both a traditional TDM network and an IP based next generation network (“NGN”), both of which are deeply interconnected into BT’s network. The company has also built its LLU network, which allows it to directly connect to its customers and has access to 2,208 fully unbundled exchanges providing access to around 89% of the population.743

A1.15 TalkTalk Residential supplies bundled broadband and phone lines to residential customers under the TalkTalk, AOL Broadband, OneTel and Tiscali brands. TalkTalk supplies nearly 4.2 million residential broadband customers, mainly using MPF, and around 678,000 voice-only customers.744 TalkTalk Group also provides broadband and/or voice access and services to SME sites, and provides wholesale products (such as wholesale end-to-end calls) to business resellers.

A1.16 [✂].

A1.17 Revenue of the TalkTalk Group in financial year 2010/11 was £1,765 million of which £329 million was contributed by the business-to-business division, Opal.745

Gamma Telecom

A1.18 Gamma Telecom was formed by purchasing the ‘distressed’ assets of CPs, notably those of Atlantic Telecom, and building these into a core national network.

740 See page 18 of C&W’s 2010/11 Annual Results Presentation:

741 Opal was rebranded as TalkTalk Business from 1 February 2011:
http://www.talktalkbusiness.co.uk/about-us/opal-is-evolving/.

742 See: http://www.opal.co.uk/about-opal/.

743 See TalkTalk Group’s Interim Results, 15 November 2011:
http://www.talktalkgroup.com/investors/~media/Files/T/TalkTalk/pdfs/results/Interim%20Results.pdf.

744 See TalkTalk Group’s 2010/11 Final Results:
http://www.talktalkgroup.com/investors/~media/Files/T/TalkTalk/pdfs/results/Final%20Results.pdf.

745 See TalkTalk Group’s 2010/11 Final Results:
http://www.talktalkgroup.com/investors/~media/Files/T/TalkTalk/pdfs/results/Final%20Results.pdf.
Gamma's network is deeply interconnected into BT's. Since 2006 Gamma has been running a predominantly ‘soft-switch’ based network (i.e. software rather than physical switches) as it transitions from TDM to an IP based next generation network. Gamma claims that it carries 13% of all the UK's business voice traffic using both traditional TDM and IP-based telephony.\footnote{http://www.gamma.co.uk/network/next-generation-network.}

\textbf{A1.19} Gamma’s original business model was to carry traffic for other CPs and supply all its services through third party resellers rather than directly to businesses or residential consumers. However, in 2003 Gamma bought Uniworld (now known as Gamma Business Communications),\footnote{http://gbc.gamma.co.uk/} which acts as a vertically integrated reseller offering CPS-based calls to businesses, charities and public sector customers. In its complaint, Gamma told us that its reseller customers represented nearly two thirds of its turnover in 2007. The majority of 600 Gamma’s reseller customers are in the SME sector. Gamma achieved total revenues of £131.4 million in 2011.\footnote{Gamma Telecom Holdings Limited Consolidated Financial Statements for the year ended 31 December 2011: http://www.gamma.co.uk/media/337033/gamma%20telecom%20holdings%20limited%202011%20accounts.pdf.}

\textbf{Virgin Media}

\textbf{A1.20} Virgin Media is the UK cable network operator offering telephone, broadband, premium television and mobile phone services. Virgin Media was formed from a merger between cable operators NTL and Telewest in 2006 and a subsequent merger with the Mobile Virtual Network Operator (“MVNO”) Virgin Mobile three months later. The company offers fixed, mobile, broadband and television services.

\textbf{A1.21} Virgin Media’s cable network covers around 50% of the UK population and in these areas the company is able to offer services without the need for wholesale inputs from BT. Outside of its cable network Virgin Media offers a CPS-based telephony service called ‘Virgin Talk’ but only to customers who take a broadband package from the company.\footnote{http://www.virginmedia.com/help/telephone/virgin-talk.php#virgin_talk.}

\textbf{A1.22} As of 31 December 2010, Virgin Media provided non-cable fixed line telephone services to approximately 169,600 subscribers, and cable telephony services to approximately 4.2 million residential subscribers.\footnote{Virgin Media Annual Report 2010: http://investors.virginmedia.com/imagelibrary/downloadmedia.ashx?MediaDetailsID=943.} Virgin Media also offers business phone lines with the option to route some or all of their calls by CPS.

\textbf{A1.23} In response to a formal information request, Virgin Media explained that the supply of wholesale end-to-end calls was marginal to Virgin Media’s overall business strategy\footnote{Virgin Media response, 2 October 2009.}: 

\begin{quote}
“\[\text{\textit{Quote from Virgin Media’s response}}\]”\footnote{http://www.virginmedia.com/help/telephone/virgin-talk.php#virgin_talk.}
A1.24  For 2010, Virgin Media’s revenues were £3,875.8 million, the majority of which was generated by Virgin Media’s consumer segment (84.6%) whilst the remainder was generated by business (15.4%).\textsuperscript{753} £77.2 million of consumer revenues was generated from non-cable/mobile consumer products, of which Virgin Talk is one.\textsuperscript{754}

**KCOM**

A1.25  KCOM Group plc (‘KCOM’) has a national core network with interconnection to around 80% of BT’s DLEs. KCOM is the incumbent fixed line operator in the Kingston-upon-Hull area, where BT does not have a local access network. KCOM is deemed to have SMP in the Hull area and is under the same obligations to offer CPS to its competitors as BT is in the rest of the UK.

A1.26  KCOM uses its national network to offer transit services to other CPs as well as supplying its own customers. KCOM provides managed communications services (i.e. outsourced provision of telephony), to medium sized corporate and public sector organisations. The company also supplies CPS and broadband services to SMEs and to resellers.\textsuperscript{755} In the year 2010/11, KCOM Group’s turnover was £395.4 million.\textsuperscript{756}

A1.27  In June 2009 KCOM announced that it had signed a ‘managed network services agreement’ with BT which would lead to:

> “…the phased and controlled outsource of the management of KCOM’s UK network operations to BT over the next few years, with the initial stage of this work being completed in September. BT will manage, maintain and enhance network operations, network management and vendor management on KCOM’s behalf, allowing KCOM to focus on meeting the needs of its customers.”\textsuperscript{757}

A1.28  KCOM stated that the deal with would allow it to focus on telephony and internet services in the East Yorkshire area, and managed communications services.

**Verizon**

A1.29  Verizon Communications was created in 2000 when Bell Atlantic purchased General Telephone and Electronics (‘GTE’). Verizon Business is one of the operating units of Verizon Communications and was created in 2006 following the

\textsuperscript{752} References in the quote to IDA are to indirect access (IA) products.


acquisition of MCI. Verizon Communications is the second-largest telecoms carrier operating in the United States.

A1.30 Verizon Business operates in more than 150 countries\(^{758}\) and is the global IT solutions arm of US based Verizon Communications. In Europe, it offers managed services, such as Ethernet, through its own fibre networks, to large and medium businesses and government agencies.\(^{759}\) Verizon is also active in the supply of CPS-based calls, including to resellers. Verizon’s global turnover was $106.6 billion in 2010/11.

**COLT**

A1.31 COLT Group SA (‘COLT’) is a pan-European network operator providing voice, data and managed services to medium and large sized companies, multinationals, wholesale customers and government. COLT’s UK fibre network covers key business areas of London, Manchester and Birmingham and connects to Ireland, continental Europe and the east coast of the USA.

A1.32 In response to a formal information request, COLT stated that [\(\ldots\)].\(^{760}\) In addition to its modest CPS activities in the UK, COLT launched its ‘White Label Voice’ offering in 2009, offering resellers traditional voice services, such as CPS, as well as new VoIP and other services.

A1.33 COLT’s total revenue for 2009 was €1,584 million (approximately £1,362 million).\(^{761}\) Corporate and reseller voice products represented 14% of COLT’s wholesale revenues of around €500 million (approximately £446 million) in 2010.\(^{762}\)

\(^{758}\) http://www.verizonbusiness.com/about/news/network/.

\(^{759}\) http://www.verizonbusiness.com/uk/about/company/.

\(^{760}\) COLT response dated 26 July 2009 to section 26 Notice.


Annex 2

Market research on resellers of wholesale end-to-end calls

Market Research on Resellers of Wholesale Voice Calls

A quantitative and qualitative survey by Prodata

Research Report

Publication date: 21 December 2010
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Chapter 1

Executive Summary

Research overview

1.1 Ofcom commissioned this research in order to understand the potential impact of any reduction in competition between BT and Carrier Pre-Selection Operators (CPSOs) in the provision of wholesale end-to-end calls to resellers focussing on supplying small and medium enterprise (“SME”) customers and ultimately, to the SMEs who are the end users of calls.

1.2 The main objectives of the research were to assist in the understanding of the relative impact of factors such as price, added value products and quality of service, on resellers’ choice of wholesale calls supplier.

1.3 Two telephone surveys, a quantitative survey and a more exploratory qualitative survey, were conducted by Prodata between July and September 2009. The results of these surveys are summarised in this report.

1.4 A total of 245 interviews were conducted with business-to-business resellers focussing on SME customers. Of these, 207 were quantitative interviews with resellers and 38 were qualitative interviews.

1.5 The quantitative interviews focussed on practical aspects of voice calls supply and resale, such as contract terms and supplier choice, while the qualitative interviews explored more strategic issues, including market trends and customer-facing issues.

1.6 The research findings were analysed by several different factors: the size of the reseller, whether the reseller purchased value added services, and by main supplier.

Summary research findings

Supplier preferences

1.7 A quarter of respondents cited Gamma as their main supplier, followed by 20% citing Opal, 15% BT and 10% C&W. Over three-quarters (76%) of respondents preferred to offer wholesale end-to-end voice calls under their own single brand, with a much smaller proportion providing calls under supplier brands.

1.8 When asked which of three descriptions offered best described their purchasing behaviour, 44% said that they bought voice call minutes mostly from one supplier, 28% said that they bought similar amounts from two or more suppliers and 27% said that they chose the best deal at the time.

Reason for choice of supplier

1.9 The majority of respondents cited price as the most important consideration when selecting a supplier of wholesale end-to-end voice calls. In the quantitative survey, 36% of respondents said that price was the most important factor and a further 44%

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763 Size was determined by the relative volumes of wholesale end-to-end call minutes which they purchased in total from BT or the CPSOs for resale during the month of April 2009.
said it was the second most important. Just under a third of resellers (32%) said that they purchased mainly based on quality of service.

1.10 Two-thirds (65%) of quantitative respondents said that they had purchased additional value added services from suppliers. Call barring, forwarding divert and recording were the most popular value added services purchased, followed by Telephone Preference Scheme (“TPS”) blocking, virtual PBX\textsuperscript{764}, conferencing and number translation services (“NTS”).

Response to reduced supplier choice

1.11 The dynamics of competition and supplier choice were explored in more detail in the qualitative survey. Respondents were asked to state the minimum number of suppliers that would allow them to maintain/secure a competitive deal for wholesale end-to-end fixed voice calls. Just under a third of respondents said that they thought a minimum of three suppliers was necessary and the mean average across all responses was four suppliers.

1.12 Two main reasons were given for needing to maintain this level of supplier choice: firstly, respondents felt that prices would not be as competitive if there were fewer suppliers; secondly, it was felt that lack of competition could make switching supplier more difficult.

Response to hypothetical price increase

1.13 Respondents were asked how they thought they would respond if they were faced with a permanent 10% increase in wholesale end-to-end voice call prices in the future. The majority (80%) said that they would pass on this increase to their customers; 46% in full, 34% in part. One in ten (10%) reported that they would try to keep prices constant by not passing on this increase.

Switching behaviour and product preferences

1.14 All respondents were asked whether they had ever switched one of their customers from wholesale end-to-end voice calls to alternative technology voice calls products. More than half (55%) of quantitative respondents said that they had previously done this.

1.15 Resellers were most likely to have switched at least one of their customers to VoIP (43%) followed by indirect access (24%) and LLU (17%). Resellers who were [\textgreater]\textless were more likely than other resellers to have reported switching a customer to VoIP (61%) or to LLU (31%).

\textsuperscript{764} Private Branch Exchange – a telephone exchange that services a particular business of office.
Chapter 2

Introduction

Background

2.1 Wholesale end-to-end voice calls are supplied by BT and a number of other alternative networks known as CPSOs and sold on to specialist resellers. These resellers sell on the calls to end users who are SMEs and residential customers. (Some resellers also act as aggregators to sell on calls to other resellers).

2.2 A reduction in competition between BT and CPSOs could potentially affect resellers and ultimately the end users (SMEs and residential customers) through higher prices and poorer quality of service.

2.3 Ofcom commissioned this research among resellers in order to better understand who they sell their calls on to. The specific research objectives were:

- To understand the impact of any reduction in competition between BT and CPSOs on the provision of wholesale end-to-end calls to SMEs.
- To establish the relative impact of factors such as price, added value products and quality of service on resellers’ choice of wholesale end-to-end calls supplier.
- To identify whether SMEs would be likely to be affected by a permanent loss of competition between BT and the CPSOs.

Methodology

2.4 Two telephone surveys, a quantitative survey and a more exploratory qualitative survey, were conducted by Prodata between July and September 2009. The results of these surveys are summarized in this report.

2.5 Both the qualitative and quantitative questionnaires contained questions on the following three areas; supply issues, customer issues and potential substitutability between BT’s Wholesale Calls product, wholesale end-to-end calls provided by CPSOs and those available via alternative voice call technologies.

2.6 Broadly speaking, the quantitative interviews with resellers focussed on practical aspects of voice calls supply and resale, such as contract terms and supplier choice, while the qualitative interviews explored more strategic issues around voice calls supply and resale, including market trends and customer-facing issues. Some questions were asked on both surveys to allow key data to be reported at the aggregated level. The questionnaires are included in Appendix 1.

Sample

2.7 Ofcom used its formal information-gathering powers under section 26 of the Competition Act 1998 to obtain from BT and the main UK CPSOs customer contact lists together with total billed revenue and total call minutes for each customer for the
last billed month at April 2009. This information was used to create the sample database on which the research was conducted.

2.8 A total of 245 interviews were conducted with business-to-business resellers from a total sample base of 863 records. 207 of the reseller interviews were quantitative interviews and 38 were qualitative.

2.9 The resellers interviewed were statistically representative of the overall sample base in terms of volumes of minutes purchased for resale during the month of April 2009 as recorded in the sample database.

2.10 For further technical details of the sample structure and weighting applied see Appendix 2.

2.11 The survey findings in this report focus particularly on differences that are statistically significantly different at the 99% confidence level, owing to the small sample sizes in many of the respondent sub groups. Reference is however made also to data shown at 95% confidence levels where this is of particular interest for any specific question.

2.12 Chapter 3 of this report describes our analysis of the reseller profile and behaviour of the population we interviewed. Chapter 4 reports our analysis of trends identified by reseller size. Chapter 5 reports on identified trends in purchasing value added services. Chapter 6 reports on market trends identified in respondents’ responses. Chapter 7 notes observed differences in behaviour by resellers who mainly purchase from a particular supplier.

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765 In general the relevant period was April 2009. However, two of the CPOSs provided information for May 2009.

766 Analysis at the end of fieldwork showed that none of the large UK residential-only resellers, such as Sky and the Post Office, had participated in the research, hence the sample base is indicative of UK business-to-business, in particular, SME resellers only.
Chapter 3

Reseller Profile and Behaviour

Introduction

3.1 This Chapter of the report provides an overview of supplier preferences, in term of main supplier used, branding preferences and exclusive contracts. It also covers details of supplier contracts (including average contract length, volume commitments and contract renegotiation), reason for choice of supplier and analysis of customer profile.

Supplier preferences

3.2 Figure 1 shows the main named supplier for all of the survey respondents, aggregating the quantitative and qualitative survey respondents. A quarter of respondents cited Gamma as their main supplier, followed by 20% citing Opal, 15% BT and 10% C&W.

Figure 1: Main named supplier

![Figure 1: Main named supplier](image)

Source: Reseller Quantitative & Qualitative Surveys Unweighted Data
Base: 245 respondents

3.3 Over three-quarters (76%) of respondents preferred to offer wholesale end-to-end voice calls under their own brand, with a much smaller proportion using the supplier’s brands.

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Note that Daisy, named by 2% of respondents as their main supplier, is not a CPSO but a reseller which sells to other resellers.
Figure 2: Branding of wholesale end to end voice products

Source: Reseller Quantitative Survey Unweighted Data
Base: 207 respondents

3.4 Figure 3 below shows that when asked which of three statements best described their behaviour as a purchaser of wholesale end-to-end call minutes, 44% opted for the statement that they bought the bulk of their requirements from one supplier, 28% for buying similar amounts from two or more suppliers and 27% that they chose the best deal at the time.

3.5 Respondents reporting sourcing from one supplier only were most likely to continue to purchase from one supplier (70%) and least likely to shop around for the best deal (14%). Respondents who named [\textasciitilde] as their main supplier were more likely than average to say that they bought voice call minutes mostly from one supplier (60%).
3.6 In the qualitative survey respondents were asked whether they preferred an exclusive or non-exclusive contract for the supply of wholesale end-to-end voice calls.

3.7 Of the 38 respondents who participated in the survey the majority (30) stated a clear preference for a non-exclusive arrangement.

3.8 The main reasons for preferring a non-exclusive arrangement were as follows:

- Flexibility to change supplier if anything were to go wrong;
- Desire not to be tied in to a single supplier;
- Flexibility to take advantage of the lowest price on the market;
- Option to select different suppliers for bespoke customer solutions; and
- Requirement to select suppliers with better technology solutions at any given time.

3.9 The main reasons cited for preferring an exclusive arrangement for the supply of wholesale end-to-end voice calls were simplicity, e.g. not wanting to change existing supplier, and the perception of getting better deals on price by putting all business with a single supplier.

**Contract length and terms**

3.10 Quantitative respondents were asked to specify their average current contract length with their main wholesale end-to-end voice calls supplier. The results are summarised in Figure 4. The most frequent contract length cited was one year (31%), followed by monthly contracts (26%). A quarter of respondents did not provide a response to this question.
Figure 4: Length of current contract

![Contract duration distribution](chart)

Source: Reseller Quantitative Survey Weighted Data
Base: 207 respondents

Q1.6 How long is your current contract, from beginning to end, with your main i.e. largest wholesale end-to-end voice calls supplier?

3.11 Average contract length appears to vary by supplier, with respondents citing [$<\bar{x}$] as their main supplier more likely to have a one year contract; nearly half of [$>\bar{x}$] customers said their average contract length was a year, compared to around a quarter of other respondents.

Figure 5: Contract length by main supplier

[$<\bar{x}$]

Source: Reseller Quantitative Survey Weighted Data
Base: 207 respondents

Q1.6 How long is your current contract, from beginning to end, with your main i.e. largest wholesale end-to-end voice calls supplier?

3.12 Two-thirds (63%) of quantitative survey respondents did not have minimum volume commitments with their main supplier of wholesale end-to-end voice calls. This was higher than average amongst [$>\bar{x}$] customers (75%). Respondents who had indicated that quality was the main reason they selected their main supplier (see discussion below) were less likely to sign up to contractual minimum volume commitments than other respondents.

3.13 One-third (32%) of quantitative respondents did have volume commitments in place with their main supplier. The highest percentage of resellers reporting volume commitments were customers of [$<\bar{x}$] (63%).

3.14 Respondents reported that renegotiation of wholesale voice calls prices occurred either during the life of the contract (60% of respondents) or at the point of contract
renewal (27%). A relatively high proportion of [ﬁgure] customers reported that they had renegotiated price at the point of contract renewal (46%).

3.15 The majority of quantitative survey respondents (79%) said that they purchased wholesale end-to-end voice calls as a standalone product, while 18% said that they purchased them as part of a bundle with other products or services.

Reason for choice of supplier

3.16 The majority of respondents cited price as the most important consideration when selecting a supplier of wholesale end-to-end voice calls. In the quantitative survey, 36% of respondents said that price was the most important factor and a further 44% said it was the second most important. The qualitative research findings were consistent with this, with eight in 10 stating that price was their primary consideration.

Figure 6: Primary consideration when placing a supplier contract

![Figure 6: Primary consideration when placing a supplier contract](source: Reseller quantitative survey weighted base Q1.8a
Base: 207 respondents)

3.17 Resellers who purchased primarily on price were more likely to pass on price changes to their customers, either partially or in full. They were also more likely than other resellers to switch their customers to other wholesale end-to-end voice call suppliers.

3.18 Just under a third of resellers (32%) said that they purchased mainly based on quality of service. These resellers were less likely to sign up to minimum volume commitments with suppliers than other resellers. They also claimed to sell a wider range of alternative technology voice products, including VoIP, Indirect Access and voice-over-broadband than other resellers.

3.19 Resellers who purchased mainly on quality tended to be higher purchasers of value added services than other respondents, as detailed in Figure 7.
3.20 In terms of buyer behaviour, resellers who purchased on quality claimed to be more likely to dual-source suppliers than other resellers, whereas those purchasing on price tended to look for the best deal available at the time.

Customer profile

3.21 Respondents were asked in the quantitative survey what proportion of their revenue from the resale of wholesale voice call minutes came from different customer groups. The results are shown in Figure 8.

3.22 Nearly two-thirds (64.3\%) of wholesale voice call minute revenues came from sales to SME customers. Just over a quarter (26.1\%) of call minute revenues came from direct sales to larger corporations and 1.6\% was accounted for by sales to other resellers. Resellers with a single supplier had higher than average proportions of revenues from SME customers (73.4\%). Large corporate companies’ purchases of wholesale calls accounted for just over a quarter (26.1\%) and residential customers account for only 2.5\% of revenues among our survey sample.\[769\]

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768 As noted at paragraph 2.8 of this Report, large residential resellers were not included in the population being surveyed.

769 The small proportion of residential revenue reported by the resellers interviewed in our survey is consistent with the fact that (as noted previously), major residential resellers were not represented in the sample base for this survey.
In the qualitative survey sample, SMEs were the most common target customer group sold to. A number of respondents (around one in six) stated that they had recently pulled out of the residential market. Reasons cited were that the market was highly competitive and that they had experienced difficulties with unpaid bills.
Chapter 4

Analysis of Resellers by Size

4.1 This Chapter of the report analyses survey results by size of reseller to identify whether any trends by reseller profiles emerge. Size was determined by the relative volumes of voice call minutes which they purchased in total from any supplier for resale during the month of April 2009.770

- **Small**: bottom 25% of respondents by call minute volumes purchased for resale;
- **Medium**: next 50% of respondents by call minute volumes purchased for resale;
- **Medium Large**: next 20% of respondents by call minutes purchased for resale;
- **Large**: top 5% of respondents by call minute volumes purchased for resale.

4.2 Due to low sample sizes in the “large” band, most of the analysis below uses only three categories, with the combined “large” and “medium large” resellers representing the top 25% of resellers by call minute volumes.

4.3 The majority (80%) of the combined Large/Medium Large group of resellers identified one of the top four suppliers by size ([\(\geq\)]) as their main supplier. Medium and Small resellers tended to name a broader mix of other main suppliers.

4.4 ([\(\geq\)]) and ([\(<\)]) accounted for the largest percentage of Large/Medium large reseller customers (28% and 27% respectively).

**Figure 9: Main supplier in terms of spend, by size of reseller**

Source: Reseller Quantitative Survey Weighted Data
Base: 207 respondents
Q1.1c Which one supplier would you regard as your main supplier for wholesale end-to-end voice calls, in terms of annual spend?

4.5 Branding strategies used by the Large/Medium Large and Medium reseller segments showed a preference for single rather than multiple branding of wholesale end-to-end voice calls for resale, either using the reseller’s own brand or that of their main supplier.

770 Volumes and definitions are detailed in Appendix 3.
Q1.4 Wholesale voice call products can be branded as “own brand”, “supplier’s brand”, or a combination of the two. How do you brand the wholesale voice call products which you supply?

4.6 Large/Medium size segment resellers tended to purchase more value added services such as Call Divert, Call Forwarding and TPS Blocking services than other resellers.

Q1.5 Does your company purchase additional call services, sometimes known as “value added services”, from your suppliers?

4.7 As shown in Figure 12, Large/Medium Large resellers were more likely to report selling VoIP, Indirect Access and Voice over Broadband than Medium and Small resellers.777

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777 There was little statistical difference between the percentages of Medium or Small resellers respectively selling these services.
Figure 12: Sale of other voice call products, by size of reseller

Source: Reseller Quantitative Survey Weighted Data
Base: 207 respondents
Q2.3 Do you sell any other voice call products to end users which are not based on wholesale end-to-end calls?

4.8 Price of wholesale calls was the primary consideration for supplier selection across all segments, followed by quality of service.

Figure 13: Primary consideration when placing a contract, by size of reseller

Source: Reseller Quantitative Survey Weighted Data
Base: 207 respondents
Q1.8a What is the most important consideration for your company in placing a contract with a supplier for wholesale voice call minutes?

4.9 Large/Medium Large and Medium resellers reported being more successful at renegotiating contracts than Small resellers, both at renewal and during the contract life.
Figure 14: Timing of successful contract renegotiation, by size of reseller

Source: Reseller Quantitative Survey Weighted Data
Base: 207 respondents
Q1.9a At which point(s) during the life of a contract has your company had success at re-negotiating prices for wholesale end-to-end voice calls with suppliers?
Chapter 5

Analysis by Value Added Services Purchased

5.1 This Chapter compares the survey responses of respondents who said that they purchase value added services with those that did not. (As noted in paragraph 4.6, a larger proportion of Large/Medium size reseller segment tended to purchase value added services, though value added services are purchased by a proportion of all reseller size segments).

5.2 Two-thirds (65%) of quantitative respondents said that they had purchased additional value added services from suppliers. Call barring, call forwarding, call divert and call recording were the most popular value added services purchased, followed by TPS blocking, virtual PBX, conferencing and NTS.

Figure 15: Value added services purchased from suppliers

Source: Reseller Quantitative Survey Weighted Base Q1.5
Base: 207 respondents
Q1.5 Does your company purchase additional call services, sometimes known as “value added services”, from your suppliers?

5.3 For convenience, we refer below to a ‘high’ number of suppliers for companies with four or more suppliers, ‘medium’ for two or three suppliers, and ‘low’ for a single supplier.

5.4 Resellers sourcing from a medium or high number of suppliers were more likely to purchase value added services than those with a lower number of suppliers.
5.5 Reseller customers of [$\geq$] were also more likely to purchase value added services (84%) than resellers of [$<\geq$] (57%), [$<\leq$] (64%) or other suppliers (60%). Respondents who had purchased value added services were more likely than those who had not to sell alternative voice call products.

5.6 A higher percentage of purchasers of value added services reported having switched at least one of their customers from wholesale end-to-end voice to alternative technology voice calls products.
Figure 18: Previously switched customer, by whether value added services purchased

Source: Reseller Quantitative Survey Weighted Data
Base: 207 respondents
Q2.6 Has your business ever switched one of your customers from wholesale end to end voice calls to any of the following products?

5.7 Value added services purchasers were much more likely to choose both Wholesale Calls and CPS-derived calls upon contract renewal than respondents who did not purchase value added services.

Figure 19: Preferred services on contract renewal, by whether value added services purchased

Source: Reseller Quantitative Survey Weighted Data
Base: 184 respondents
Q3.4 When your current contract for wholesale end-to-end voice calls ends, which product are you likely to choose?
Chapter 6

Customer Responses to Price Changes

6.1 This Chapter of the report covers both historical switching behaviour and potential future responses to market changes. It reports views and customer preferences on wholesale calls provided by BT (Wholesale Calls) or by CPSOs and other voice calls products. It also includes qualitative research findings on the prospect of reduced supplier choices, the impact of new technologies and the potential for growth in the market.

Response to previous price changes

6.2 Respondents were asked what type of price change in wholesale end-to-end voice calls they had most recently experienced. The majority (56%) said that the most recent change had been a decrease in price. This was higher among Medium Large size respondents (71%).

Figure 20: Most recent change in wholesale end-to-end voice calls

Source: Reseller Quantitative Survey Weighted Data
Base: 207 respondents

Q2.5a On the occasion when the price of wholesale end-to-end voice calls charged by your main supplier last changed, what type of change was this?

- Price decrease: 56%
- Price increase: 15%
- Prices not changed: 13%
- DK/Ref'd: 7%

6.3 Respondents who said that they had most recently experienced an increase in price were then asked whether they had passed this on to their customers. 48% said that
they had not passed this price increase on to customers, 26% had passed this increase on in part and 23% said that they had passed this increase on in full.\footnote{772}

6.4 Respondents who said that they had most recently experienced a decrease in price were also asked whether they had passed this on to their customers. 77% said that they had passed these price decreases on in part or full to their customers, while 20% said that they had not.

**Response to hypothetical price increase**

6.5 Respondents were also asked how they thought they would respond if they were faced with a permanent 10% increase in wholesale end-to-end voice call prices in the future. The majority (80%) said that they would pass on this increase to their customers; 46% in full, 34% in part. 10% reported that they would try to keep prices constant by not passing on this increase.

**Figure 21: Whether would pass 10% increase in wholesale call prices on to customers**

![Figure 21: Whether would pass 10% increase in wholesale call prices on to customers](image)

Source: Reseller Quantitative Survey Weighted Data  
Base: 207 respondents  
Q2.7 If the price of wholesale end-to-end voice calls were to permanently increase by 10% in the future, is it likely that you would pass this increase on to your customers, either in part or in full?

6.6 Respondents were also asked specifically how they thought this 10% increase might change their commercial strategy regarding the supply of wholesale end-to-end calls. The majority (84%) said that they would continue to offer wholesale end-to-end calls, but more than half of these (45%) said that they would also seek alternative technology wholesale end-to-end voice calls products to offer customers.

\footnote{772 Please note that this data is based on a low base of 31 respondents so should be treated as indicative only.}
Final Decision

Figure 22: Change to commercial strategy in response to 10% price increase

<table>
<thead>
<tr>
<th></th>
<th>Small</th>
<th>Med</th>
<th>Med L/Large</th>
</tr>
</thead>
<tbody>
<tr>
<td>Still offer wholesale calls but also offer alternative wholesale calls products</td>
<td>9</td>
<td>23</td>
<td>13</td>
</tr>
<tr>
<td>Still offer wholesale calls</td>
<td>5</td>
<td>11</td>
<td>26</td>
</tr>
<tr>
<td>Still offer wholesale calls but directly or via new CPSO</td>
<td>2</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Cease offering wholesale calls/CPSO, switch customers to other products</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Cease offering wholesale calls to new customers</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DK/Refd</td>
<td>2</td>
<td>7</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: Reseller Quantitative Survey Weighted Data
Base: 207 respondents
Q2.8a If the price of wholesale end-to-end voice calls were to permanently increase by 10% in the future, how would your commercial strategy change in terms of continuing to offer wholesale end-to-end calls?

6.7 A small proportion of respondents (5%) said that they would cease to offer wholesale end-to-end voice calls altogether. These respondents were subsequently asked which alternative products they would offer; indirect access, VoIP, LLU or other products.

6.8 Of the 11 respondents who answered this question; all but one (10 respondents) said that they would offer VoIP as an alternative product to wholesale end-to-end voice calls, two respondents said that they would offer LLU, and one said that they would offer indirect access.\(^{773}\)

Switching behaviour and product preferences

6.9 All respondents were asked whether they had ever switched one of their customers from wholesale end-to-end voice calls to alternative technology voice calls products. More than half (55%) of quantitative respondents said that they had previously done this.

6.10 Resellers were most likely to have switched at least one of their customers to VoIP (43%) followed by indirect access (24%) and LLU (17%). Resellers who were \([<1]\) customers were more likely than other resellers to have reported switching a customer to VoIP (61%) or LLU (31%).

6.11 Resellers who did not purchase value added services were far less likely than other respondents to have switched their customers away from wholesale end-to-end voice calls to alternative technology voice products (58% versus 45% overall).

\(^{773}\) Please note this analysis has a very low base of only 11 respondents so should be treated as indicative only.
Figure 23: Alternative products customers previously switched to

<table>
<thead>
<tr>
<th>Product</th>
<th>% of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>VoIP</td>
<td>43</td>
</tr>
<tr>
<td>DA</td>
<td>24</td>
</tr>
<tr>
<td>LLU</td>
<td>17</td>
</tr>
<tr>
<td>VoB</td>
<td>3</td>
</tr>
<tr>
<td>Never switched custs</td>
<td>40</td>
</tr>
<tr>
<td>DX/Ref'd</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Reseller Quantitative Survey Weighted Data Q2.6
Base: 207 respondents

Q2.6 Has your business ever switched one of your customers from wholesale end to end voice calls to any of the following products?

6.12 Just over half (54%) of quantitative respondents said that they had previously switched between wholesale end-to-end voice call suppliers. Of these, 32% had migrated all their customers to the new supplier, 59% had migrated some customers and 5% had not yet migrated any customers. For the majority of respondents (74%) the reason given for the switch was the desire to reduce call prices. Only 4% of respondents gave poor service as the reason for switching.

6.13 In the quantitative survey the majority of respondents (81%) who were aware of BT’s Wholesale Calls product said that their customers had no preference for either Wholesale Calls or CPS-derived calls, while 15% said that their customers did have a preference. Examples given for these preferences are summarised in Table 1.

Table 1: Example reasons for preference for Wholesale Calls or CPS

<table>
<thead>
<tr>
<th>Wholesale Calls</th>
<th>CPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Customer preference for BT/first tier carrier for quality, safety &amp; reliability</td>
<td>• Simple to set up</td>
</tr>
<tr>
<td>• Problems experienced by customers with CPS carriers</td>
<td>• Cheaper than Wholesale Calls</td>
</tr>
<tr>
<td>• More flexible than CPS</td>
<td>• Easier for customer call centre routing</td>
</tr>
<tr>
<td>• Customers do not want lines from one company &amp; call charges from another</td>
<td>• Customer preference for specific CPS carriers</td>
</tr>
<tr>
<td></td>
<td>• Problems experienced by customers with BT</td>
</tr>
<tr>
<td></td>
<td>• International call advantages</td>
</tr>
</tbody>
</table>

Source: Reseller Quantitative Survey Weighted Base Verbatim Comments
Base: 184 respondents

Q3.3b Please clarify whether their preference is for Wholesale Calls or CPS, together with the nature of these preferences, and reasons why?

6.14 Resellers on the quantitative survey who were aware of BT’s Wholesale Calls product were also asked which main product they would opt for when their current contracts.
end. Responses are shown in Figure 24. Over a third (36%) would resell Wholesale Calls and CPS combined and an additional 8% would each sell only Wholesale Calls and CPS. A further 29% were undecided.

Figure 24: Main product likely to choose when current contract ends

<table>
<thead>
<tr>
<th>Product</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>WC + CPS</td>
<td>36%</td>
</tr>
<tr>
<td>WC only</td>
<td>8%</td>
</tr>
<tr>
<td>CPS only</td>
<td>8%</td>
</tr>
<tr>
<td>VoIP</td>
<td>10%</td>
</tr>
<tr>
<td>LLU</td>
<td>2%</td>
</tr>
<tr>
<td>IDA</td>
<td>2%</td>
</tr>
<tr>
<td>VOB</td>
<td>4%</td>
</tr>
<tr>
<td>DK/Ref'd</td>
<td>29%</td>
</tr>
</tbody>
</table>

Source: Reseller Quantitative Survey Weighted Data
Base: 184 respondents
Q3.4 When your current contract for wholesale end-to-end voice calls ends, which product are you likely to choose?

Response to reduced supplier choice

6.15 The dynamics of competition and supplier choice were explored in more detail in the qualitative survey. Respondents were asked to state the minimum number of suppliers that would allow them to maintain/secure a competitive deal for wholesale end-to-end fixed voice calls. Just under a third of respondents said that they thought a minimum of three suppliers was necessary and the mean average across all responses was four suppliers.

6.16 Responses were analysed according to the number of suppliers each respondent used; for convenience, we refer below to a ‘high’ number of suppliers for companies with four or more suppliers, ‘medium’ for two or three suppliers, and ‘low’ for a single supplier.

6.17 There is a correlation between the number of suppliers respondents currently use and the minimum number of suppliers they think it necessary. Respondents with a high number of suppliers were more likely to want three or more suppliers to choose from than respondents with a medium or low number of suppliers. Large resellers were more likely to want more than three suppliers to choose from than small and medium-sized resellers.

774 The qualitative research is based on interviews with 38 respondents.
775 Question 1.5.
6.18 Two main reasons were given in the qualitative survey for needing to maintain this level of supplier choice.\textsuperscript{776} Firstly, respondents felt that prices would not be as competitive if there were fewer suppliers, with several mentioning that it was important to be able to “play one supplier off against the other” in order to get the best deal. Secondly, it was felt that lack of competition could make switching supplier more difficult.

**Substitutability of products**

6.19 When asked if they considered Wholesale Calls & CPS products to be fully interchangeable,\textsuperscript{777} 26 of the 38 qualitative respondents viewed the two products as fully interchangeable. Six respondents did not consider these products to be interchangeable, with the main reason provided being the difference in price (CPS was generally seen as a cheaper option than Wholesale Calls).\textsuperscript{778}

6.20 When asked whether they considered any other products to be fully interchangeable with the Wholesale Calls or CPS products:\textsuperscript{779}

- 18 of the 38 qualitative respondents considered that there were other products which were fully interchangeable with Wholesale Calls or CPS products. The main products that were seen as interchangeable with Wholesale Calls and CPS (cited on an unprompted basis) were IA (6 respondents), VoIP (6 respondents) and LLU (5 respondents).

- 12 respondents felt that there were no other products which were fully interchangeable with Wholesale Calls or CPS. The main products seen by these respondents as not being interchangeable with Wholesale Calls and CPS were the same as those identified by other respondents as being interchangeable i.e. LLU (3 respondents), IA (2 respondents) and VoIP (2 respondents).

\textsuperscript{776} Question 1.6.

\textsuperscript{777} Qualitative survey, Question 3.1.

\textsuperscript{778} Other reasons given were the technical set-up of the service, [\textless;], different routing platforms, issues of PBX compatibility and the ability to have different providers for line rental and calls (CPS only).

\textsuperscript{779} Qualitative survey, Question 3.3.
Chapter 7

Analysis of Resellers by Supplier

7.1 In this Chapter, we report observed marked differences between resellers categorised by their main supplier.

7.2 The main differences between how resellers naming [\textgreater{}] as their main supplier behaved and how other respondents, particularly [\textless{}] reseller customers, behaved, were as follows:

- [\textless{}] customers showed a greater tendency to have a one-year contract and to accept minimum volume commitments;
- [\textless{}] reseller customers were also more likely (46%) than other suppliers’ customers (27%) to report successful price renegotiations at the end of a contract;
- A smaller proportion of [\textless{}] reseller customers (31%) than other suppliers’ customers (49%) purchased wholesale calls as a stand-alone product (i.e. [\textless{}] customers tended not to purchase [\textless{}] bundled with other products).

7.3 The results are summarised in the table below.

Table 2: Differences between BT Resellers and all respondents

Source: Reseller Quantitative Survey Weighted Data, Q1.6, Q1.7, Q1.9a, Q2.2a
Base: 207 respondents
Notes: * = Statistically significant at the 95% confidence level; ** = Statistically significant at the 99% confidence level

7.4 The sample interviewed consisted of a higher proportion of Gamma reseller customers; 22% of quantitative survey respondents named Gamma as their main supplier, compared with 14% for C&W (incl. THUS and Energis), and 21% BT.

7.5 By size of resellers, [\textless{}] tended to have a higher proportion of Medium resellers in its customer base than [\textless{}] or [\textless{}], whereas [\textless{}] tended to have a higher proportion of Small size resellers in its customer base than [\textless{}] or [\textless{}].

Figure 25: Main named supplier by respondent size

Source: Reseller Quantitative Survey Weighted Data
Base: 207 respondents
Q1.1c  Which one supplier would you regard as your main supplier for wholesale end-to-end voice calls, in terms of annual spend?

7.6 When [\textless{}] resellers are compared against other respondents a number of differences can be identified.

7.7 As shown in Figure 26, resellers of [\textless{}] were slightly less price conscious, and slightly more likely to buy on quality of service than other respondents.
Figure 26: Primary consideration when placing a contract, by main supplier

Source: Reseller Quantitative Survey Weighted Data
Base: 207 respondents
Q1.8a What is the most important consideration for your company in placing a contract with a supplier for wholesale voice call minutes?

7.8 Resellers of [X] claimed to negotiate on price during the life of the contract to a greater extent than BT or C&W resellers.

7.9 In terms of alternative technology voice calls products sold to end users which were not based on wholesale end-to-end voice calls, a higher percentage of [X] and [X] resellers claimed to sell VoIP than did resellers of [Y] or other suppliers.

Figure 27: Other voice call products sold, by main supplier

Source: Reseller Quantitative Survey Weighted Data
Base: 207 respondents
Q2.3 Do you sell any other voice call products to end users which are not based on wholesale end-to-end calls?

7.10 In terms of purchasing behaviour, 60% of [X] resellers characterised themselves as purchasing end-to-end voice calls from a single supplier source. [X] resellers were slightly more likely to describe their purchasing behaviour as based on selecting the best deal on offer at the time.

Figure 28: Purchasing behaviour, by main supplier

Source: Reseller Quantitative Survey Weighted Data
Base: 207 respondents
Q2.4 Which best describes your behaviour as a purchaser of wholesale end-to-end voice call minutes?

7.11 Resellers were asked how they had previously responded to price changes from suppliers of wholesale end-to-end voice calls. Figure 29 summarises their responses. In summary, resellers of [X] were most likely to pass on a partial price increase to their customers. Resellers of [X] and [X] were most likely to pass on a price decrease to their customers while resellers of [X] were least likely to pass on a price decrease.

Figure 29: Reaction to previous price changes, by main supplier

Source: Reseller Quantitative Survey Weighted Data
Base: Price increase n=31; Price decrease n=116 (NB rounding in segment n adds to 117)
Q2.5b and 2.5c When the price of wholesale end-to-end voice calls last increased/decreased, did your company pass the increase/decrease in price on to your customers, either in part or in full?

7.12 Respondents were then asked how they would respond to a permanent price increase for wholesale end-to-end voice calls of 10%. Resellers of all suppliers said they would be likely to pass this on to their customers either fully or partially.

7.13 As shown in Figure 30, [X] and [X] resellers were more likely to have previously switched customers to one of the alternative voice call products than resellers of [Y] or other suppliers.
Figure 30: Previously switched customers to alternative voice products, by main supplier

Source: Reseller Quantitative Survey Weighted Data
Base: 207 respondents
Q2.6 Has your business ever switched one of your customers from wholesale end to end voice calls to any of the following products?
Appendix 1

Questionnaires

We set out in this Appendix, copies of the two questionnaires (one for the qualitative research and the other for the quantitative research) that were used by Prodata during interviews.

Wholesale Voice Calls Reseller Research August – September 2009

Qualitative Telephone Discussion Guide

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<th>RESPONDENT DETAILS</th>
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<td>Interview Serial No.</td>
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Prodata Partners Ltd
TARGETS & INTERVIEWER NOTE

Respondents to be researched will be located in UK telecommunications reseller organisations. Such organisations are involved in buying voice call minutes from a telecommunications operator (often known as a Carrier Pre Select Operator or CPSO), and reselling these voice call minutes on to other resellers, to business customers, or to residential customers.

Respondents to be recruited for the qualitative telephone interviews are likely to be named contacts from the project sample database, or alternative contacts nominated by respondents contacted via the sample database.

Respondents should be able to answer questions regarding views on market trends in wholesale voice call supply, and the future for different ways of selling/providing voice calls such as Carrier Pre Select (CPS) and Local Loop Unbundling (LLU).

Typical job titles may include the following:-

- MD / CEO / Owner
- Chief Information Officer
- Telecoms Director/Manager
- Networking Director/Manager
- Sales Director/Manager
- Marketing Director/Manager

The named contact in the sample database will have been sent a letter from Ofcom confirming the purpose of the research. This is to obtain strategic input by UK resellers to a competitive review of the UK wholesale voice calls reseller market taking place during mid to late 2009.

READ OUT INTRODUCTION:  Good morning/afternoon. My name is ....... and I am calling on behalf of Prodata, a telecommunications market research agency. We are conducting an important study amongst UK voice resellers, on behalf of Ofcom, the UK telecommunications regulator, as input to an Ofcom analysis of the voice calls reseller industry in the UK. More information on the project is included in a letter which your organisation will recently have received from Ofcom in support of the research project.

(Interviewer Note: If respondent has not seen Ofcom’s letter or requires further information about how responses will be used by Ofcom, please inform respondent that all responses will be consolidated and fed back to Ofcom at the end of the project in September 2009. The survey data will then be analysed by Ofcom as part of an important competitive analysis of the market for end-to-end wholesale voice calls in the UK. If respondents ask about anonymity, please tell respondents that the data will be anonymised in the first instance, although Ofcom itself will be able to identify individual responses, but only if necessary as part of its regulatory function. An annex summarising the results of Ofcom’s findings may be published on Ofcom’s website in due course – this is part of a long-running project.)

The strategic discussion on the wholesale market for voice calls would be approx. 25-30 minutes in length, and we would be pleased to offer you Amazon vouchers or a charity donation in thanks for your participation.

Outside of Ofcom and Prodata, all responses provided in this survey will be kept anonymous, unless you agree for your comments to be made attributable to your organisation. Prodata abides by the Market Research Society code of conduct.
(Interviewer Note: If respondent asks where their contact details have been obtained from, please inform respondent that lists of UK resellers have been used together with Companies House data to match reseller company names with telephone and contact details. If further information is requested, inform respondent that lists of UK Resellers were obtained by Ofcom from communications providers using Ofcom’s formal regulatory powers.)

Could I just check that you would be happy to discuss issues relating to industry trends in wholesale voice calls by UK resellers?

IF RESPONDENT AGREES, CONTINUE WITH INTERVIEW. IF RESPONDENT DECLINES, ASK TO BE REFERRED TO AN ALTERNATIVE CONTACT IN THE ORGANISATION, AND RESTART INTERVIEW WITH THAT RESPONDENT.

NOTE DATE/TIME/CONTACT NAME FOR INTERVIEW IF ASKED TO CALL BACK VIA APPOINTMENT.
Prodata Partners Ltd

SCREENING QUESTIONS

S1  Before we begin, could I confirm that your organisation does in fact purchase voice call minutes for resale onto other customers, rather than using voice call minutes within your company only?

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S2  Can I also confirm that your organisation has purchased and resold voice call minutes at any point within the last 2 years?

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Wholesale Voice Calls Reseller Research August-September 2009

Prodata Partners Ltd

MAIN QUESTIONNAIRE

1 MARKET & SUPPLY ISSUES

Please note that the focus of this research is on the UK, and within that, the wholesale market for end-to-end fixed voice calls only.

1.1 In terms of wholesale end-to-end voice calls:-

1.1a Which supplier(s) do you currently purchase domestic (UK) wholesale voice calls from?

1.1b Which supplier(s), if any, do you currently purchase international wholesale voice calls from?

1.2 Which one supplier would you regard as your main supplier for wholesale voice calls, in terms of annual spend?

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1.3 Which particular aspects of your main supplier's offering does your organisation value when choosing a supplier of wholesale end-to-end voice calls?
- E.g. types of bundled offerings, quality of supply, price etc.

1.4 Does your organisation prefer to have an exclusive or non-exclusive arrangement with its supplier for the supply of wholesale voice calls, and why?

1.5 In your view, what is the minimum number of suppliers which would allow you to maintain or secure a competitive deal for wholesale end-to-end fixed voice calls?
1.6 Please explain why you feel a particular minimum number of suppliers would allow you to maintain or secure a competitive deal for wholesale end-to-end fixed voice calls?

- E.g. what impact do you think this would have on your reseller business and customers, i.e. loss of buying power?

1.7 If you could choose from only two suppliers of wholesale end-to-end voice calls in the UK:-

1.7a What would be the impact on your reseller business, e.g. quality, range of products?

1.7b What would be the impact on your customers, e.g. services offered, any particular customers more or less affected?

1.8 If the number of suppliers of wholesale end-to-end voice calls in the UK marketplace fell below the number which you specified previously, would you consider switching your customers onto alternative technologies for wholesale end-to-end voice calls such as LLU (Local Loop Unbundling), or VoIP (Voice over Internet Protocol)?

- If so, which ones, and if not, please explain why.

(Interviewer Note: If respondent requires definitions for the above terms, refer to the glossary)

2. RESALE & CUSTOMER ISSUES

2.1 Are there any specific groups of customers which your organisation targets for reselling voice calls, and why?

- E.g. SMEs/business customers, residential customers, other resellers.
2.2 How do you offer wholesale end to end calls for sale – as a **standalone product** or as part of a bundle?

__________________________________________________________________

__________________________________________________________________

2.3 Do you put your own **branding** on the voice products you sell?

- E.g. respondent may sell voice and broadband unbranded, both wholesale and CPS calls, or sell calls branded under the CPS operators as unbranded/“white label” etc.

__________________________________________________________________

__________________________________________________________________

3. **Substitution between wholesale end-to-end voice call products**

I would now like to ask you about your perceptions of differences between the Wholesale Calls product offered by BT, LLU (Local Loop Unbundling) and CPS (Carrier Pre Select) services.

Please note that we are still focusing only on the **UK**, and within that, on **end-to-end fixed voice calls only**.

First of all, would you like a definition of Wholesale, Calls, CPS and/or LLU to be read out to you, to clarify what we mean by these services?

*(Interviewer Note:)*

- If respondent does not need definitions to be read out, proceed directly to 3.1.

- If respondent does need definitions to be read out, use definitions below, then proceed to 3.1)

**Wholesale Calls (WC)** is a product offered by BT Wholesale, whereby BT Wholesale supplies an end-to-end calls-only telephony service to Communications Providers, including resellers, for them in turn to offer a service to their end user customers.

**Carrier Pre-Selection (CPS)** is a mechanism that allows customers, while continuing to pay line rental to BT or other fixed line operators, and without having to dial a pre-fix, to route all their calls of a particular type (e.g. all national calls) via the network of one or more alternative communications providers (or CPSOs). CPS is purchased through subscribing to the services of a CPSO or a CPS reseller. Resellers purchase CPS for resale on to their own end customers. Customers can over-ride the CPS service at any time by dialing a pre-fix before the number they wish to dial, as long as they have an agreement with the operator to whom the pre-fix code belongs.

**Local Loop Unbundling (LLU)** is used by alternative telecommunications operators to offer services to customers, by using the existing infrastructure of fixed operators. The alternative operator can connect directly into the local network of a fixed operator such as BT, and can use the local network loop or “last mile” of the fixed operator’s network to offer their own services directly via the fixed operator’s local telephone exchange. This enables alternative operators to own the relationship with their
customers in offering services from the local exchange, and without having to route them through the main network of fixed operators.

READ OUT: When I refer to “Wholesale Calls” during the next set of questions, this will specifically refer to BT’s “Wholesale Calls” product offering.

3.1 Do you consider the Wholesale Calls and CPS products to be fully interchangeable, and why/why not?
   • If yes, respondent should 3.1 and 3.2, then move to 3.3;
   • If no, respondent should answer 3.1, then go to 3.3;
   • If Refused/Not stated/Don’t know, respondent should go to 3.3.

3.2 What, if any, are the particular technical advantages or disadvantages of either the Wholesale Calls or CPS products when compared with one another?

3.3 Would you consider any other products to be fully interchangeable with the Wholesale Calls or CPS products, and if so, which products?
   • E.g. Indirect Access, Voice over IP, LLU.

3.4 Overall, what do you see as the longer term growth prospects for the resale of CPS voice calls to the SME sector in particular?

3.5 I am going to list 3 alternative technologies in the telecommunications sector. Can you tell me about the impact you see each of these technologies having on your wholesale voice calls resale business going forward, e.g. do you see these as a threat to, or an opportunity for your business?

3.5a Fibre i.e. Next Generation Networks, Next Generation Access
3.5b  LLU (Local Loop Unbundling)
__________________________________________________________________
__________________________________________________________________

3.5c  Voice over Internet Protocol (VoIP)
__________________________________________________________________
__________________________________________________________________

3.6  How do you think you will need to adapt your business strategy as a result of the technologies we have just discussed?

- E.g. will need to consider potential for switching to MPF (Metallic Path Facility), would need access to fibre etc.

(Interviewer Note: If definition of MPF is needed, please refer to glossary)
__________________________________________________________________
__________________________________________________________________

4.  CONCLUSION

Thank you for your feedback. This will be extremely valuable.

4.1  As I mentioned earlier, in thanks for your participation in this discussion, we are able to offer a charity donation to Childline, the nominated charity for this project, or a personal donation in Amazon vouchers, although you are not obliged to accept this. Could you state your preference?

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</table>
|     | Amazon vouchers | 1 | Please provide an email address for us to send these to:--
|     | Charity donation to Childline | 2 |
|     | No donation required | 3 |

4.2  Do you give permission for any of the responses you have given today to be attributed to your organisation in reporting the results of the research outside of Ofcom?

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On behalf of Ofcom and Prodata, I would like to thank you for taking part in this research project. Your answers are very important to Ofcom, and we appreciate your time today.

CLOSE INTERVIEW
Wholesale Voice Calls Reseller Research August - September 2009

Quantitative Telephone Questionnaire

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<th>RESPONDENT DETAILS</th>
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TARGETS & INTERVIEWER NOTE

Respondents to be researched will be located in UK telecommunications reseller organisations. Such organisations are involved in buying voice call minutes from a telecommunications operator (often known as a Carrier Pre Select Operator or CPSO), and reselling these voice call minutes on to other resellers, to business customers, or to residential customers.

Respondents to be recruited for the quantitative telephone interviews are likely to be named contacts from the project sample database, or alternative contacts nominated by respondents contacted via the sample database.

Respondents should be able to answer questions regarding views on wholesale voice call suppliers, general information about types of contract terms for voice call supply, and views on how their choice of supplier may have changed or be likely to change in the future.

Typical job titles may include the following:-

- MD / CEO / Owner (small to medium resellers only)
- Sales Director/Manager
- Marketing Director/Manager
- Finance/Procurement Director/Manager

The named contact in the sample database will have been sent a letter from Ofcom confirming the purpose of the research. This is to obtain strategic input by UK resellers to a competitive review of the UK wholesale voice calls reseller market taking place during mid to late 2009.

READ OUT INTRODUCTION: Good morning/afternoon. My name is ...... and I am calling on behalf of Prodata, a telecommunications market research agency. We are conducting an important study amongst UK voice resellers on behalf of Ofcom, the UK telecommunications regulator, as input to an Ofcom analysis of the voice calls reseller industry in the UK.

More information on the project is included in a letter which your organisation will recently have received from Ofcom in support of the research project.

(Interviewer Note: If respondent has not seen Ofcom’s letter or requires further information about how responses will be used by Ofcom, please inform respondent that all responses will be consolidated and fed back to Ofcom at the end of the project in September 2009. The survey data will then be analysed by Ofcom as part of an important competitive analysis of the market for end-to-end wholesale voice calls in the UK. If respondents ask about anonymity, please tell respondents that the data will be anonymised in the first instance, although Ofcom itself will be able to identify individual responses, but only if necessary as part of its regulatory function. An annex summarising the results of Ofcom’s findings may be published on Ofcom’s website in due course – this is part of a long-running project.)

The interview would be approx. 15-20 minutes in length, and we would be pleased to offer you Amazon vouchers or a charity donation in thanks for your participation.

Outside of Ofcom and Prodata, responses provided in this survey will be kept anonymous, unless you agree for your comments to be made attributable to your organisation. Prodata abides by the Market Research Society code of conduct.
(Interviewer Note: If respondent asks where their contact details have been obtained from, please inform respondent that lists of UK resellers have been used together with Companies House data to match reseller company names with telephone and contact details. If further information is requested, inform respondent that lists of UK Resellers were obtained by Ofcom from communications providers using Ofcom’s formal regulatory powers.)

Could I just check that you would be happy to discuss issues relating to the supply of wholesale voice calls by UK resellers?

**IF RESPONDENT AGREES, CONTINUE WITH INTERVIEW. IF RESPONDENT DECLINES, ASK TO BE REFERRED TO AN ALTERNATIVE CONTACT IN THE ORGANISATION, AND RESTART INTERVIEW WITH THAT RESPONDENT.**

**NOTE DATE/TIME/CONTACT NAME FOR INTERVIEW IF ASKED TO CALL BACK VIA APPOINTMENT.**
SCREENING QUESTIONS

S1 Before we begin, could I confirm that your organisation does in fact purchase voice call minutes to be resold onto other customers, rather than using voice call minutes within your company only?

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<td>No</td>
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<td>Don’t know/refused</td>
<td>3 ASK TO BE REFERRED TO SOMEONE WHO WOULD KNOW, &amp; RESTART INTERVIEW WITH THAT RESPONDENT</td>
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S2 Can I also confirm that your organisation has purchased and resold voice call minutes at any point within the last 2 years?

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Wholesale Voice Calls Reseller Research August-September 2009

Prodata Partners Ltd

MAIN QUESTIONNAIRE

1. SUPPLY ISSUES

I would first like to ask you about the supply of voice call minutes to your organisation. Please note that the focus of this research is on the UK, and within that, the wholesale market for end-to-end fixed voice calls only.

1.1 In terms of wholesale end-to-end voice calls:-

1.1a Which supplier(s) do you currently purchase domestic (UK) wholesale voice calls from?

1.1b Which supplier(s), if any, do you currently purchase international wholesale voice calls from?

1.2 Which one supplier would you regard as your main supplier for wholesale voice calls, in terms of annual spend?

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<th>1.1b International Call Suppliers M/C</th>
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<tr>
<td>Video Networks</td>
<td>99</td>
<td>99</td>
<td>99</td>
</tr>
<tr>
<td>Virgin Media/NTL/Telewest</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Vital Phone</td>
<td>101</td>
<td>101</td>
<td>101</td>
</tr>
<tr>
<td>Viva Telecom</td>
<td>102</td>
<td>102</td>
<td>102</td>
</tr>
<tr>
<td>Wavecrest</td>
<td>103</td>
<td>103</td>
<td>103</td>
</tr>
<tr>
<td>Wight Cable 2005</td>
<td>104</td>
<td>104</td>
<td>104</td>
</tr>
<tr>
<td>Wightcable North</td>
<td>105</td>
<td>105</td>
<td>105</td>
</tr>
<tr>
<td>Wire9 Telecom</td>
<td>106</td>
<td>106</td>
<td>106</td>
</tr>
<tr>
<td>Other (specify)</td>
<td>107</td>
<td>107</td>
<td>107</td>
</tr>
<tr>
<td>None of the above</td>
<td>SCREEN OUT</td>
<td>SCREEN OUT</td>
<td>SCREEN OUT</td>
</tr>
<tr>
<td>Refused / Don't know</td>
<td>SCREEN OUT</td>
<td>SCREEN OUT</td>
<td>SCREEN OUT</td>
</tr>
</tbody>
</table>

1.3a Wholesale end-to-end voice calls can be purchased as a standalone product, or as part of a bundle. Please state which is applicable for your company?

### READ OUT PROMPTS

<table>
<thead>
<tr>
<th>S/C</th>
<th>Prompt</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Voice calls purchased as standalone service</td>
</tr>
<tr>
<td>2</td>
<td>Voice calls purchased as part of a bundle with other products or services</td>
</tr>
<tr>
<td>3</td>
<td>Refused/not stated/don’t know</td>
</tr>
</tbody>
</table>

1.3b Which other products or services are purchased with the voice calls?

`_________________________________________________________`

`_________________________________________________________`

`_________________________________________________________`

Go TO 1.4
1.4 Wholesale voice call products can be branded as “own brand”, “supplier’s brand”, or a combination of the two. How do you brand the wholesale voice call products which you supply?

<table>
<thead>
<tr>
<th>CAN PROMPT RESPONDENT IF ASKED FOR EXAMPLES (ROTATE ORDER IF PROMPTED)</th>
<th>S/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offer under single own brand</td>
<td>1</td>
</tr>
<tr>
<td>Offer under multiple own brands</td>
<td>2</td>
</tr>
<tr>
<td>Offer under a supplier’s single brand</td>
<td>3</td>
</tr>
<tr>
<td>Offer under a supplier’s multiple brands</td>
<td>4</td>
</tr>
<tr>
<td>More than one supplier so offered under more than one suppliers’ brands</td>
<td>5</td>
</tr>
<tr>
<td>Other (specify)</td>
<td>6</td>
</tr>
<tr>
<td>Refused/not stated/don’t know</td>
<td>7</td>
</tr>
</tbody>
</table>

1.5 Does your company purchase additional call services, sometimes known as “value added services”, from your suppliers? These are services such as call barring, call recording etc.

<table>
<thead>
<tr>
<th>CAN PROMPT RESPONDENT IF ASKED FOR EXAMPLES (ROTATE ORDER IF PROMPTED)</th>
<th>M/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Barring</td>
<td>1</td>
</tr>
<tr>
<td>Call Recording</td>
<td>2</td>
</tr>
<tr>
<td>TPS Blocking</td>
<td>3</td>
</tr>
<tr>
<td>Virtual PBX</td>
<td>4</td>
</tr>
<tr>
<td>Call Divert</td>
<td>5</td>
</tr>
<tr>
<td>Call Forwarding</td>
<td>6</td>
</tr>
<tr>
<td>Other (specify)</td>
<td>7</td>
</tr>
<tr>
<td>No other value added services required from suppliers</td>
<td>8</td>
</tr>
<tr>
<td>Refused/not stated/don’t know</td>
<td>9</td>
</tr>
</tbody>
</table>

1.6 How long is your current contract, from beginning to end, with your main i.e. largest wholesale voice calls supplier?

<table>
<thead>
<tr>
<th>CAN PROMPT RESPONDENT IF ASKED FOR EXAMPLES (ROTATE ORDER IF PROMPTED)</th>
<th>S/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly / monthly rolling</td>
<td>1</td>
</tr>
<tr>
<td>1 year / 1 year rolling</td>
<td>2</td>
</tr>
<tr>
<td>2 years / 2 years rolling</td>
<td>3</td>
</tr>
<tr>
<td>3 years / 3 years rolling</td>
<td>4</td>
</tr>
<tr>
<td>5 years</td>
<td>5</td>
</tr>
<tr>
<td>Longer than 5 years</td>
<td>6</td>
</tr>
<tr>
<td>No term-defined contract</td>
<td>7</td>
</tr>
<tr>
<td>Other (specify)</td>
<td>8</td>
</tr>
<tr>
<td>Refused/not stated/don’t know</td>
<td>9</td>
</tr>
</tbody>
</table>

1.7 Does your company have minimum volume commitments with its main supplier of wholesale end-to-end voice call minutes?

<table>
<thead>
<tr>
<th>READ OUT PROMPTS</th>
<th>S/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td>Refused/not stated/don’t know</td>
<td>3</td>
</tr>
</tbody>
</table>

1.8a & b What are the two most important considerations for your company in placing a contract with a supplier for wholesale voice call minutes?
1.8a Most important consideration S/C

<table>
<thead>
<tr>
<th>Consideration</th>
<th>S/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td>1</td>
</tr>
<tr>
<td>Quality of service</td>
<td>2</td>
</tr>
<tr>
<td>Relationship with supplier</td>
<td>3</td>
</tr>
<tr>
<td>Good customer service</td>
<td>4</td>
</tr>
<tr>
<td>Reliability</td>
<td>5</td>
</tr>
<tr>
<td>Flexibility</td>
<td>6</td>
</tr>
<tr>
<td>Technical expertise</td>
<td>7</td>
</tr>
<tr>
<td>Range of products</td>
<td>8</td>
</tr>
<tr>
<td>Supplier’s ethical approach</td>
<td>9</td>
</tr>
<tr>
<td>Ease of systems integration</td>
<td>10</td>
</tr>
<tr>
<td>Ease of administration</td>
<td>11</td>
</tr>
<tr>
<td>Service continuity</td>
<td>12</td>
</tr>
<tr>
<td>Speedy problem resolution</td>
<td>13</td>
</tr>
<tr>
<td>Other (specify)</td>
<td>14</td>
</tr>
<tr>
<td>Refused/not stated/don’t know</td>
<td>15</td>
</tr>
</tbody>
</table>

1.8b Second most important consideration S/C

<table>
<thead>
<tr>
<th>Consideration</th>
<th>S/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most important consideration S/C</td>
<td></td>
</tr>
<tr>
<td>Price</td>
<td>1</td>
</tr>
<tr>
<td>Quality of service</td>
<td>2</td>
</tr>
<tr>
<td>Relationship with supplier</td>
<td>3</td>
</tr>
<tr>
<td>Good customer service</td>
<td>4</td>
</tr>
<tr>
<td>Reliability</td>
<td>5</td>
</tr>
<tr>
<td>Flexibility</td>
<td>6</td>
</tr>
<tr>
<td>Technical expertise</td>
<td>7</td>
</tr>
<tr>
<td>Range of products</td>
<td>8</td>
</tr>
<tr>
<td>Supplier’s ethical approach</td>
<td>9</td>
</tr>
<tr>
<td>Ease of systems integration</td>
<td>10</td>
</tr>
<tr>
<td>Ease of administration</td>
<td>11</td>
</tr>
<tr>
<td>Service continuity</td>
<td>12</td>
</tr>
<tr>
<td>Speedy problem resolution</td>
<td>13</td>
</tr>
<tr>
<td>Other (specify)</td>
<td>14</td>
</tr>
<tr>
<td>Refused/not stated/don’t know</td>
<td>15</td>
</tr>
</tbody>
</table>

1.9a At which point(s) during the life of a contract has your company had success at re-negotiating prices for wholesale voice calls with suppliers?

<table>
<thead>
<tr>
<th>READ OUT PROMPTS</th>
<th>M/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>At the point of contract renewal</td>
<td>1</td>
</tr>
<tr>
<td>During the life of the contract</td>
<td>2</td>
</tr>
<tr>
<td>Not had success at re-negotiating prices with suppliers</td>
<td>3</td>
</tr>
<tr>
<td>Refused/not stated/don’t know</td>
<td>4</td>
</tr>
</tbody>
</table>

1.9b At which point during the life of a contract has your company ever been MOST successful at re-negotiating prices for wholesale voice calls with suppliers?

(Interviewer Note: we are only asking about the single usual main point of success, so only a single code answer is applicable)

<table>
<thead>
<tr>
<th>READ OUT PROMPTS</th>
<th>S/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>At the point of contract renewal</td>
<td>1</td>
</tr>
<tr>
<td>During the life of the contract</td>
<td>2</td>
</tr>
<tr>
<td>Refused/not stated/don’t know</td>
<td>3</td>
</tr>
</tbody>
</table>

NOW GO TO SECTION 2
2. RESALE & CUSTOMER ISSUES

2.1 What proportion of your revenue from the resale of wholesale voice call minutes comes from the following customer groups?

(Advertiser Note: Ensure that %s total up to 100%)

<table>
<thead>
<tr>
<th>READ OUT PROMPTS (in order to ascertain the breakdown between various customers in revenue terms)</th>
<th>M/C</th>
<th>% Breakdown</th>
</tr>
</thead>
<tbody>
<tr>
<td>End user business customers – large corporates of 100 employees or more</td>
<td>1</td>
<td>☐ ☐ ☐ %</td>
</tr>
<tr>
<td>End user business customers – SMEs of less than 100 employees</td>
<td>2</td>
<td>☐ ☐ ☐ %</td>
</tr>
<tr>
<td>End user public sector customers</td>
<td>3</td>
<td>☐ ☐ ☐ %</td>
</tr>
<tr>
<td>End user residential customers</td>
<td>4</td>
<td>☐ ☐ ☐ %</td>
</tr>
<tr>
<td>Other voice calls resellers</td>
<td>5</td>
<td>☐ ☐ ☐ %</td>
</tr>
<tr>
<td>Other operators</td>
<td>6</td>
<td>☐ ☐ ☐ %</td>
</tr>
<tr>
<td>Others (specify)</td>
<td>7</td>
<td>☐ ☐ ☐ %</td>
</tr>
<tr>
<td>Refused/not stated/don’t know</td>
<td>8</td>
<td>X</td>
</tr>
</tbody>
</table>

2.2a Wholesale end-to-end voice calls can be sold as a standalone product, or as part of a bundle. Please state which is applicable for your company?

<table>
<thead>
<tr>
<th>READ OUT PROMPTS</th>
<th>S/C</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Voice calls sold as standalone product</td>
<td>1</td>
<td>GO TO 2.3</td>
</tr>
<tr>
<td>Voice calls sold as part of a bundle with other products or services</td>
<td>2</td>
<td>GO TO 2.2b</td>
</tr>
<tr>
<td>Refused/not stated/don’t know</td>
<td>3</td>
<td>GO TO 2.3</td>
</tr>
</tbody>
</table>

2.2b Which other products or services are sold as bundles with the voice calls?

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

GO TO 2.3

2.3 Do you sell any other voice call products to end users which are not based on wholesale end-to-end calls?

<table>
<thead>
<tr>
<th>READ OUT PROMPTS</th>
<th>M/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indirect Access</td>
<td>1</td>
</tr>
<tr>
<td>VoIP</td>
<td>2</td>
</tr>
<tr>
<td>LLU</td>
<td>3</td>
</tr>
<tr>
<td>None/no other wholesale voice call products</td>
<td>4</td>
</tr>
<tr>
<td>Refused/not stated/don’t know</td>
<td>5</td>
</tr>
</tbody>
</table>
2.4 Which best describes your behaviour as a purchaser of wholesale end-to-end voice call minutes?

<table>
<thead>
<tr>
<th>READ OUT PROMPTS</th>
<th>S/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buy bulk of requirements from one supplier</td>
<td>1</td>
</tr>
<tr>
<td>Purchase a similar amount from 2 or more suppliers</td>
<td>2</td>
</tr>
<tr>
<td>Choose depending on the best deal at the time</td>
<td>3</td>
</tr>
<tr>
<td>Other (specify) ____________________________</td>
<td>4</td>
</tr>
<tr>
<td>Refused/not stated/don’t know</td>
<td>5</td>
</tr>
</tbody>
</table>

2.5a On the occasion when the price of wholesale end-to-end voice calls charged by your main supplier last changed, what type of change was this?

(Interviewer Note: we are only asking about the single last occasion when these prices changed, so only a single code answer is applicable)

<table>
<thead>
<tr>
<th>READ OUT PROMPTS</th>
<th>S/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price increase</td>
<td>1</td>
</tr>
<tr>
<td>Price decrease</td>
<td>2</td>
</tr>
<tr>
<td>Not applicable – our prices have never changed</td>
<td>3</td>
</tr>
<tr>
<td>Refused/not stated/don’t know</td>
<td>4</td>
</tr>
</tbody>
</table>

2.5b When the price of wholesale end-to-end voice calls last increased, did your company pass the increase in price on to your customers, either in part or in full?

(Interviewer Note: we are only asking about the single last occasion when these prices changed, so only a single code answer is applicable)

<table>
<thead>
<tr>
<th>READ OUT PROMPTS</th>
<th>S/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passed the price increase in full to customers</td>
<td>1</td>
</tr>
<tr>
<td>Passed the price increase in part to customers</td>
<td>2</td>
</tr>
<tr>
<td>Kept prices constant/did not pass the price change on to customers</td>
<td>3</td>
</tr>
<tr>
<td>Other (specify) ____________________________</td>
<td>4</td>
</tr>
<tr>
<td>Refused/not stated/don’t know</td>
<td>5</td>
</tr>
</tbody>
</table>

NOW GO TO 2.6

2.5c When the price of wholesale end-to-end voice calls last decreased, did your company pass the decrease in price on to your customers, either in part or in full?

(Interviewer Note: we are only asking about the single last occasion when these prices changed, so only a single code answer is applicable)

<table>
<thead>
<tr>
<th>READ OUT PROMPTS</th>
<th>S/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passed the price decrease in full to customers</td>
<td>1</td>
</tr>
</tbody>
</table>
Passed the price decrease in part to customers | 2
Kept prices constant/did not pass the price change on to customers | 3
Other (specify) | 4
Refused/not stated/don’t know | 5

_Now go to 2.6_

2.6 Has your business ever switched one of your customers from wholesale end to end voice calls to any of the following products?

<table>
<thead>
<tr>
<th>READ OUT PROMPTS</th>
<th>M/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indirect Access</td>
<td>1</td>
</tr>
<tr>
<td>Voice over IP</td>
<td>2</td>
</tr>
<tr>
<td>LLU</td>
<td>3</td>
</tr>
<tr>
<td>N/A - Never switched from wholesale end-to-end calls to any of these products</td>
<td>4</td>
</tr>
<tr>
<td>Refused/not stated/don’t know</td>
<td>5</td>
</tr>
</tbody>
</table>

2.7 If the price of wholesale end-to-end voice calls were to permanently increase by 10% in the future, is it likely that you would you pass this increase on to your customers, either in part or in full?

<table>
<thead>
<tr>
<th>READ OUT PROMPTS</th>
<th>S/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>We would pass the price increase on to customers in full</td>
<td>1</td>
</tr>
<tr>
<td>We would pass the price increase on to customers in part</td>
<td>2</td>
</tr>
<tr>
<td>We would keep prices constant/not pass the price increase on to customers</td>
<td>3</td>
</tr>
<tr>
<td>Refused/not stated/don’t know</td>
<td>4</td>
</tr>
</tbody>
</table>

2.8a If the price of wholesale end-to-end voice calls were to permanently increase by 10% in the future, how would your commercial strategy change in terms of continuing to offer wholesale end-to-end calls?

<table>
<thead>
<tr>
<th>READ OUT PROMPTS</th>
<th>S/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>We would continue to offer wholesale end to end voice calls</td>
<td>1   GO TO SECTION 3</td>
</tr>
<tr>
<td>We would continue to offer wholesale end to end voice calls but also seek to offer customers alternative wholesale calls products</td>
<td>2   GO TO SECTION 3</td>
</tr>
<tr>
<td>We would continue to offer wholesale end to end voice calls but try to provide this service ourselves or sponsor/encourage entry of a new CPS operator</td>
<td>3   GO TO SECTION 3</td>
</tr>
<tr>
<td>We would cease to offer wholesale end to end voice calls to new customers</td>
<td>4   GO TO 2.8b</td>
</tr>
<tr>
<td>We would cease to offer Wholesale Calls or CPS to all customers and switch current customers to another product</td>
<td>5   GO TO 2.8b</td>
</tr>
<tr>
<td>Refused/not stated/don’t know</td>
<td>6   GO TO SECTION 3</td>
</tr>
</tbody>
</table>

2.8b Which alternative products to wholesale end-to-end voice calls would you seek to offer customers?

(Interviewer note – please refer to glossary if definitions are needed for the terms below)
3. WHOLESALE CALLS & CPS

I would now like to ask you about your perceptions of differences between the Wholesale Calls product offered by BT, LLU (Local Loop Unbundling), and CPS (Carrier Pre Select) services. Please note that we are still focusing only on the UK, and within the UK, on end-to-end fixed voice calls only.

3.1a First of all, would you like a definition of Wholesale Calls, CPS and LLU to be read out to you, to clarify the differences between these services?

<table>
<thead>
<tr>
<th>READ OUT PROMPTS</th>
<th>S/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
</tbody>
</table>

**DEFINITIONS:**

**Wholesale Calls (WC)** is a product offered by BT Wholesale, whereby BT Wholesale supplies an end-to-end calls-only telephony service to Communications Providers, including resellers, for them in turn to offer a service to their end user customers.

**Carrier Pre-Selection (CPS)** is a mechanism that allows customers, while continuing to pay line rental to BT or other fixed line operators, and without having to dial a prefix, to route all their calls of a particular type (e.g. all national calls) via the network of one or more alternative communications providers (or CPSOs). CPS is purchased through subscribing to the services of a CPSO or a CPS reseller. Resellers purchase CPS for resale on to their own end customers. Customers can over-ride the CPS service at any time by dialing a pre-fix before the number they wish to dial, as long as they have an agreement with the operator to whom the pre-fix code belongs.

**Local Loop Unbundling (LLU)** is used by alternative telecommunications operators to offer services to customers, by using the existing infrastructure of fixed operators. The alternative operator can connect directly into the local network of a fixed operator such as BT, and can use the local network loop or “last mile” of the fixed operator’s network to offer their own services directly via the fixed operator’s local telephone exchange. This enables alternative operators to own the relationship with their customers in offering services from the local exchange, and without having to route them through the main network of fixed operators.

**READ OUT:** When I refer to “Wholesale Calls” during the next set of questions, this will specifically refer to BT’s “Wholesale Calls” product offering.

3.1b Are you aware of BT’s “Wholesale Calls” product?
### Final Decision

| Yes | 1 | GO TO 3.2a |
| No  | 2 | GO TO 4.1  |
| Refused/not stated/don't know | 3 | GO TO 3.2a |

#### 3.2a Has your organisation ever switched between wholesale end-to-end voice call suppliers?

<table>
<thead>
<tr>
<th>READ OUT PROMPTS</th>
<th>S/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td>Refused/not stated/don’t know</td>
<td>3</td>
</tr>
</tbody>
</table>

#### 3.2b What prompted this switch?

<table>
<thead>
<tr>
<th>READ OUT PROMPTS</th>
<th>M/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desire to reduce price paid for calls</td>
<td>1</td>
</tr>
<tr>
<td>Change of supplier</td>
<td>2</td>
</tr>
<tr>
<td>Change of technology platform/network</td>
<td>3</td>
</tr>
<tr>
<td>Other (specify)</td>
<td>4</td>
</tr>
<tr>
<td>Refused/not stated/don’t know</td>
<td>5</td>
</tr>
</tbody>
</table>

#### 3.2c What proportion of your customers did you migrate?

<table>
<thead>
<tr>
<th>READ OUT PROMPTS</th>
<th>S/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>All our customers</td>
<td>1</td>
</tr>
<tr>
<td>Some of our customers</td>
<td>2</td>
</tr>
<tr>
<td>None of our customers</td>
<td>3</td>
</tr>
<tr>
<td>Refused/not stated/don’t know</td>
<td>4</td>
</tr>
</tbody>
</table>

#### 3.3a Do any of your voice call customers have any preference for Wholesale Calls or CPS?

<table>
<thead>
<tr>
<th>READ OUT PROMPTS</th>
<th>S/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td>Refused/not stated/don’t know</td>
<td>3</td>
</tr>
</tbody>
</table>

#### 3.3b Please clarify whether their preference is for Wholesale Calls or CPS, together with the nature of these preferences, and reasons why?

________________________________________________________________
________________________________________________________________
________________________________________________________________

#### 3.4 When your current contract for wholesale end-to-end voice calls ends, which product are you likely to choose?

<table>
<thead>
<tr>
<th>CAN PROMPT RESPONDENT IF ASKED FOR EXAMPLES (ROTATE ORDER IF PROMPTED)</th>
<th>S/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholesale Calls only</td>
<td>1</td>
</tr>
<tr>
<td>CPS only</td>
<td>2</td>
</tr>
<tr>
<td>Both Wholesale Calls and CPS</td>
<td>3</td>
</tr>
<tr>
<td>Indirect Access</td>
<td>4</td>
</tr>
</tbody>
</table>
4. CONCLUSION

Thank you for your feedback. This will be extremely valuable.

4.1 As I mentioned earlier, in thanks for your participation in this discussion, we are able to offer a charity donation to Childline, the nominated charity for this project, or a personal donation of £10 in Amazon vouchers, although you are not obliged to accept either. Could you state your preference?

<table>
<thead>
<tr>
<th>S/C</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Amazon vouchers</td>
</tr>
<tr>
<td>2</td>
<td>Charity donation to Childline</td>
</tr>
<tr>
<td>3</td>
<td>No donation required</td>
</tr>
</tbody>
</table>

Please provide an email address for us to send these to:-

4.2 Do you give permission for any of the responses you have given today to be attributed to your organisation in reporting the results of the research outside of Ofcom?

<table>
<thead>
<tr>
<th>S/C</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>

On behalf of Ofcom and Prodata, I would like to thank you for taking part in this research project. Your answers are very important to Ofcom, and we appreciate your time today.

CLOSE INTERVIEW
Appendix 2

Universe estimates for Sample Selection and Survey Weighting

Summary

A2.1 The universe estimate, from which the survey sample was drawn, was not the same universe estimate that the survey findings were weighted to. The population estimate that the research findings were weighted to was wholesale voice call resellers with some SME end customers, (excluding those with a majority or largest share of call minutes from residential sales). The weighting targets were drawn from an updated universe database.

A2.2 The universe database was validated and updated, during and after the fieldwork, the difference in terms of number of companies and call minutes sales is shown below.

| Table 3: Composition of Sample and Survey Universe |
|---------------------------------|---------------------------|
| All Resellers - Sample          | Number of Companies: 837  |
|                                 | Call minutes (millions): 2,523 |
| Added Companies                 | 67                        |
| No Longer Reselling             | 34                        |
| Residential                     | 7                         |
| Resellers with SME customers    | 863                       |
| Survey                         | 1,005                      |

Sample Universe

A2.3 The sample database was created from reseller customer information provided to Ofcom by BT and CPSOs in response to Notices issued under section 26 of the Competition Act 1998 (“section 26 Notices”) on 10 June 2009. BT and ten CPSOs (referred to here as suppliers of wholesale calls) provided Ofcom with reseller customer lists, along with contact details for the resellers and the number of minutes each reseller had purchased in April 2009. Ofcom undertook preliminary checks to remove reseller customers no longer trading and combined the data for those resellers which belonged to the same parent company (either as a result of corporate structure or recent mergers).

A2.4 The reseller customer lists were then consolidated into a single database, with total call minutes purchased from each supplier of wholesale calls in April 2009. The resellers were identified according to which supplier of wholesale calls was their main supplier, based on the supplier from whom they purchased the largest recorded volume of call minutes.

A2.5 Ofcom provided Prodata with this information in the form of an anonymised database, with suppliers labelled as only A-K (so that the identity of BT and each CPSO was not

---

780 Two CPSO resellers provided minutes for May 2009.
revealed) in order to prevent potential bias in recruitment.\textsuperscript{781} The database universe provided by Ofcom, from which the survey was drawn, had 837 individual identified reseller customers and 2,523 million voice call minutes.

A2.6 Prodata was also contracted to assist with the verification of the database, amending and updating it with any relevant information obtained from the survey to provide a market database for further analysis by Ofcom.

A2.7 When fieldwork was completed, the main supplier identified by the interviewee was reviewed against the database assignment. The identity key (i.e. the A-K identification of each wholesale call supplier) was supplied to Prodata on completion of fieldwork for comparison with the fieldwork findings. The majority of interviewees whose identified main supplier differed from that assigned in the database were from one supplier, BT.

A2.8 Other quality checks included calling back all respondents who were from merged or complex corporate entities to confirm the section or share of call minutes that their responses related to.

A2.9 In parallel, Ofcom was in the process of analysing responses to subsequent section 26 Notices sent to BT and the CPSOs on 7 August 2009. Ofcom carried out a spot check of the returns, comparing the data of both sets of responses provided to ensure that the data was directly comparable. The process, which concluded after the fieldwork had been completed, identified that the supplier (BT) noted in paragraph A2.7 above had omitted to include certain customers (due to complexities of its internal corporate structure), omitting call minute volumes for reseller customers in the universe estimate database and failing to identify unique customers not on other CPSOs’ lists. A total of [\textgreater\textless] resellers, who accounted for [\textgreater\textless] million call minutes, were identified as missing from our universe estimate.

A2.10 Ofcom noted that there were minor differences in call volumes between the data supplied by the CPSOs in response to the two section 26 Notices, but that in aggregate across all CPSOs the volume difference was less than 5%. No corrections were therefore necessary to other CPSO universe call minutes and data estimates. Only the missing call minutes and additional wholesale call suppliers were added to the database.

Survey Universe

A2.11 The sample universe contained only 900 contact details for the recruitment, meaning that all contacts would need to be approached to achieve sufficient interviews. No specific quotas (recruitment targets) were therefore set. Ofcom did, however, request that all the completed interviews should be broadly representative of CPSO main supplier share and call minute purchase size bands, so weight adjustments could be made to the survey findings.

A2.12 Ofcom had identified that the majority of wholesale call minutes supplied for residential end customers were supplied to seven specialist resellers, including vertically-integrated downstream arms of suppliers of wholesale calls. By chance in the sample selection process, none of the key residential resellers had been interviewed. Two interviews were undertaken with resellers with the majority of their

\textsuperscript{781} By recruitment we mean the selection of those to be interviewed; both the selection of the sample and the arrangement of interviews with particular respondents by types (e.g. main supplier by call minutes) for both qualitative/quantitative interviews.
call minutes sold to residential end customers. However, their negligible share of the market for residential call minutes sales meant these were not representative of residential wholesale call resellers as a whole. The two interviews were removed from the research data, and the large residential resellers and identified residential minutes for identified residential subsidiaries were removed from the universe estimates. The research is therefore representative, and weighted to the estimated universe of wholesale voice call resellers who sell to SME end customers.

A2.13 As discussed in paragraph A2.9 above, accuracy and consistency checks on the sample universe database identified 67 omitted resellers, who accounted for 137 million omitted call minutes. The omitted resellers are assumed to have similar views and opinions as other resellers of the same size in terms of call minutes of and other resellers of that CPSO. Some of the omitted resellers were identified as already present in the universe and had completed interviews. As a consequence of adding the missing minutes to the database, the main supplier for some resellers changed.

A2.14 The survey was weighted to the updated proportion of resellers by main supplier and compared against the updated call minute profile, with an additional filter removing all residential-only resellers.

A2.15 The weights on the survey remained low by main reseller supplier to the amended universe, but no longer matched call minute size bandings. This is due to the effect on the universe of the exclusion of the large residential call volumes. The research findings were therefore not weighted to survey universe call minute size bands. The survey sample as originally drawn did match the original sample universe by call minute band size.
Appendix 3

Methodology

Background

Objectives

A3.1 Ofcom’s research objectives were:

3.1.1 To analyse supplier customer lists obtained by Ofcom in order to determine the type of companies which purchase wholesale end-to-end voice calls from BT and CPSOs, and how much they spend.

3.1.2 To conduct primary research among resellers to better understand who they sell their calls on to, in particular, the proportion sold to SMEs vs. residential customers, and the type and size of the SMEs which buy from resellers.

3.1.3 To assist in the identification of which type of SMEs would be most adversely affected by a permanent loss of competition between BT and CPSOs.

3.1.4 To assist in the understanding of the relative impact of factors such as price, added value products and quality of service, on resellers’ choice of supplier, and in particular what value if any resellers place on being able to offer their customers certain bundled products or services.

Project deliverables

A3.2 The following deliverables were commissioned from Prodata: Data tables and SPSS data file, a qualitative synopsis report in Word, a PowerPoint slide pack of key points and findings (quantitative and qualitative) a project report in Word outlining methodology, results and integrated key findings and a consolidated and annotated spreadsheet database of market data and sample. All qualitative interviews also have transcripts based on audio recordings.

Questionnaires

A3.3 Ofcom generated an initial list of 53 questions, which were split across the quantitative and qualitative surveys, according to the open or prompt-based content of each question. Some questions were amended, added or dropped at the pilot stage as adding little value or having a high percentage of refusals or don’t know responses; 55 questions were then asked across the qualitative & quantitative main questionnaires.

A3.4 The qualitative and quantitative questionnaires were structured along three broad areas: The first set of questions concerned supply issues; the second concerned resale and customer issues; and the third explored substitutability between BT’s Wholesale Calls, CPS and alternative voice calls technologies.
Sample details and weighting

Sample methodology

A3.5 Ofcom used its formal information gathering powers to obtain customer contact lists from BT and other CPSOs, which formed the basis of the sample for this research.

A3.6 As a result of non-response to requests for interview, analysis at the end of fieldwork showed that none of the large UK residential-only resellers were interviewed. All residential-only resellers were removed from the sample base for the research, so that the universe and sample would consequently be indicative of UK business-to-business resellers only. Resellers who primarily sell residential voice minutes are not therefore represented in the findings of this research.

A3.7 At the post-fieldwork stage Ofcom also added into the initial sample universe of 837 respondents a further \( \geq 1 \) new BT resellers, whose details had not been supplied at the point of sample generation, making a new universe total of \( \geq 1 \) respondents once residential-only resellers had been removed. The additional \( \geq 1 \) resellers were not therefore interviewed, but were included in the overall sample universe, and the survey weightings updated accordingly.

A3.8 The final aggregated universe for the project analysis therefore consisted of 863 resellers across a mix of 11 different operators, classified in the sample spreadsheet as A-K.

Achieved sample

A3.9 Respondents for whom an email or postal address was available were sent a letter signed by Ofcom supporting the research survey. Respondents with no email or postal address could not however be sent the letter in advance of being contacted, potentially lowering the likelihood of these respondents to co-operate with the research.

A3.10 Prodata’s interview strike rate on the live/complete sample was high at just over 1:2, resulting in 245 reseller telephone interviews, this comprised 207 quantitative interviews with resellers on aspects of voice calls supply and resale such as contract terms and supplier choice and 38 qualitative interviews with resellers on strategic issues around voice calls supply and resale, market trends, and customer-facing issues.

A3.11 Overall, Prodata interviewed 28% of the total sample base by number of respondents, corresponding to 22.8% of the total call minutes in the sample base. The strike rate achieved across the whole sample was broadly representative of resellers across each of the 11 main suppliers (A-K). The results of this research as reported refer to Resellers whose majority of wholesale end-to-end voice calls is predominantly aimed at resale to SME customers.

A3.12 Only minimal weighting was required to the universe profile for the main suppliers. The small ‘universe’ sizes for many suppliers meant that the overall design effect after weighting was an uplift in effective sample size, from 245 to 346.

Figure 31: Analysis of achieved sample

\( \geq 1 \)
A3.13 The achieved vs. effective sample sizes for the Main Suppliers are shown in the table below. Base sizes for Suppliers C, D and J are too low to analyse separately. Responses for Suppliers F, I and (to a lesser extent) K should be taken as indicative only if analysed separately.

Table 4: Effective sample size, qualitative and quantitative sample combined

<table>
<thead>
<tr>
<th>Supplier</th>
<th>Effective Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
</tr>
<tr>
<td>J</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td></td>
</tr>
<tr>
<td>K</td>
<td></td>
</tr>
</tbody>
</table>

* Note the effective sample size for the total sample is lower than the sum of the effective samples for the main suppliers due to the weighting applied

Table 5: Weighting applied, qualitative and quantitative sample combined

Bases: Operator Sample 863; Survey Respondent Base 245

Sample analysis

Respondent Classification

A3.14 Respondents were classified from the sample using size bands based on monthly call volumes into Large, Medium Large, Medium & Small categories. The criteria for this classification is summarised in the table below.

Table 6: Respondent classification - size (by minutes)

<table>
<thead>
<tr>
<th>Sample Size Band</th>
<th>% of Total Sample</th>
<th>No. of Resellers in Sample</th>
<th>Monthly Call Minute Volumes (April 2009 only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>5%</td>
<td>43</td>
<td>&gt;5,249,017 to &lt;=60,427,775</td>
</tr>
<tr>
<td>Medium Large</td>
<td>20%</td>
<td>172</td>
<td>&gt;588,941 to &lt;=5,249,017</td>
</tr>
<tr>
<td>Medium</td>
<td>50%</td>
<td>432</td>
<td>&gt;7,759 to &lt;=588,941</td>
</tr>
<tr>
<td>Small</td>
<td>25%</td>
<td>216</td>
<td>&gt;=0 to &lt;=7,759</td>
</tr>
</tbody>
</table>

A3.15 Further classification was applied by supplier group and profile, using the following definitions:

Supplier Group = Main Supplier to Respondent in Ofcom sample by largest, medium & smallest CPSO groups


Distribution of Suppliers = Low (1 Supplier), Med (2-3 Suppliers), High (4 or more Suppliers) from survey Q1.1a
A3.16 The sample was also coded by main named supplier, where this refers to a supplier either from 11 A-K operators or another supplier named as main supplier by respondents in survey Q1.1c. Daisy (2% of respondents) was the only other supplier named by three or more respondents which was not included in the main A-K supplier list.
Table 7: Other named main suppliers mentioned

| Other Main Named Suppliers (Less than 2% share of main named suppliers) |
|---|---|---|---|---|
| • Genesis | • Magrathea | • Tempest | • TRA | • Vodafone |
| • Invomo | • KDDI | • Keycom | • O2 | • Opex |
| • Frontier Systems | • Video Networks | • Swan Solutions | • Global Crossing | • O-Bit Telecom |
| • 2 Circles | • Totem | • Vital Phone | • Level 3 | • Intelenet |

Source: Reseller Quantitative & Qualitative Surveys Unweighted Data
Base: 245 respondents

A3.17 Several respondents also named other suppliers not listed in the Ofcom A-K list – but not as their main supplier - both for UK and International wholesale end-to-end voice calls supply.

A3.18 [✓] were the only operators with Large size respondents interviewed. [✓] had the highest proportion of Small size respondents interviewed.

Figure 34: Respondents by size, by named main supplier

[✓]

Source: Combined Reseller Quantitative & Qualitative Surveys Unweighted Data
Base: 245 respondents
Annex 3

Contracts to be included in our historical margin analysis

A3.1 In this Annex we explain why we have chosen to focus on the 21 specific contracts identified in paragraph 6.178.

A3.2 Of the approximately [333] active Wholesale Calls customers in April 2009, around [333] were ‘base rate’ customers (i.e. they do not have discounted prices). For the remaining Wholesale Calls customers who do receive some form of discounted rates, Wholesale Calls contracts fall into two broad categories:

- **standard terms (also referred to as Wholesale Calls Commitment Package or “WCCP”) contracts** – [333]; or
- **bespoke contracts** – [333].

A3.3 Although the terms and conditions for standard contacts do not differ on the basis of the identity of the individual customer, as of November 2008 there were [333] different pricing tiers that reflect the customer’s annual spend commitments ranging from £[333] to £[333]. BT had therefore [333] the number of standard term contracts since the Gamma Telecom investigation in 2005 when there were [333] different commitment tiers. In addition, it also relaxed its internal guidance to sales staff as to how [333].

A3.4 Information provided by BT shows that it successfully bid for around [333] contracts (some of which were with the same contracting entity i.e. via contract renewals) by offering standard terms between April 2005 and April 2009.

A3.5 The vast majority of Wholesale Calls customers were therefore either base rate customers or customers on standard terms contracts.

---

782 We did not receive any representations on the reasoning set out in Annex 3 in the Statement of Objections. Therefore, we have not made any changes to our approach in this respect.

783 Source data: BT response to a clarification on the 8th section 26 Notice – “Billed revenue update collated 8th s26 161009.xls”. ‘Customers’ are based on billing entities with non-zero billed revenues over the month. In a number of cases the billed revenues may be very small (as little as £1 or less), however the vast majority of customers appear to be what could be considered active customers.

784 Response to Question 1 of the 8th section 26 Notice received 7 August 2009.

785 Throughout this document we include within this category the so-called “bespoke plus” contracts offered to the very largest reseller customers.

786 Response to Question 1 of the 8th section 26 Notice received 7 August 2009.

787 Response to Question 5 of the 8th section 26 Notice received 17 July 2009.

788 Response to Question 2 of the 8th section 26 Notice received 17 July 2009.
A3.6 To qualify for a bespoke contract a customer had to have a forecast annual spend of at least £[>]<. Information provided by BT\(^\text{789}\) shows that it successfully bid for around [>]< contracts by offering bespoke terms between January 2007 and April 2009. By definition, we would expect BT’s bespoke contracts to attract [>]<. Therefore, these contracts are the focus of our attention.

A3.7 Although in terms of the number of customers, the base rates or standard terms contracts customers by far dominate the number of bespoke contracts, the distribution of Wholesale Calls revenues is very different.

A3.8 In Figure A3.1 we present billed revenue data for April 2009. The chart shows the cumulative distribution of revenues across contracts when they are ordered by size. [>]<.

Figure A3.1: BT Wholesale Calls Cumulative Distribution of Monthly Billed Revenue, April 2009

[>]<

Data source: BT response to clarification on Question 20 of the 8th section 26 Notice, “Billed revenue update collated 8th s26 161009.xls”

A3.9 In Table A3.2 we present the monthly billed revenues for each of the top 20 Wholesale Calls customers in April 2009. We also present the cumulative proportion of the total Wholesale Calls revenues that those customers represented. The aim of this analysis is to demonstrate the importance of the largest customers to the business. It shows that the [>]< 1-5] largest customers (i.e. [>]<) together accounted for around [>]< 60-70]% of the billed revenues in April 2009, while the top 20 customers accounted for around [>]< 80-90]% of total billed revenues.

A3.10 The relative scale of the [>]< Company 1 and Company 2] contracts in comparison to the remainder of the rest of the Wholesale Calls customers, suggests that they should be of particular interest in this investigation (see also paragraph 6.147).

Table A3.2: Importance of Top 20 Wholesale Calls Customers, April 2009

[>]<

Data source: BT response to clarification on Question 20 of the 8th section 26 Notice, “Billed revenue update collated 8th s26 161009.xls”

A3.11 The data presented in Table A3.2 suggests that by focussing on the top 20 customers in April 2009, which other than [>]< all have bespoke contracts, we capture the vast majority of Wholesale Calls’ costs and revenues. Given that we anticipate the lowest prices will typically be charged to the largest customers (as these are the most likely to be receive bespoke prices), we also expect to capture the lowest priced contracts within this sample. We have therefore modelled the margins earned by BT Wholesale Calls on all the contracts identified in Table A3.2. However, we have also made one addition: [>]<.

A3.12 At the time of signing the contract in [>]<,\(^\text{790}\) BT expected that [>]< would generate significant revenues (around £[>]< million over three years, and £[>]< million in 2008/9\(^\text{791}\)) for Wholesale Calls. In the BT internal documents we have reviewed,\(^\text{792}\)

\(^{789}\) Response to Question 2 of the 8th section 26 Notice received 17 July 2009.

\(^{790}\) Response to Question 22 of the 4th section 26 Notice “Question 22 Response.xls”

\(^{791}\) Response to Question 22 of the 4th section 26 Notice “Question 22 Response.xls”
was included as one of Wholesale Calls’ top eight customers (which we believe to be based on expected revenues). We therefore consider it to be reasonable to assume that the rates offered by BT to [Â] were low, and should be considered in our investigation despite the fact that actual revenues in April 2009 appear to be below the levels originally anticipated by BT.

A3.13 Finally, to ensure that our approach does not miss any specific bespoke contract that has been offered on particularly low rates, but did not generate sufficient revenues in April 2009 to be included in our sample, we have also reviewed the rates in force on 1 April 2009 for all other bespoke contracts outside the top 20 plus [Â]. This review confirms that we have captured the most relevant contracts in our sample.

---

792 Response to Question 23a of the 1st section 26 Notice “WSC_Earned_Revenue_by_top_8_customers.xls”

793 We asked BT to provide details of the prices charged to all bespoke contract customers for all the major call types in force on 1 April 2009 (Question 23 of the 8th section 26 Notice). Comparison of rates for individual call types across contracts is complicated by variations in calling patterns across contracts. However, a simple comparison of rates for local and national geographic calls, which we would typically expect to form the majority of call minutes for most contracts, shows that no other bespoke contract had rates lower than [Â Company 2] and, in particular, [Â Company 1]. Generally speaking the rates for the other major call types in the remaining contracts were also higher than those charged to [Â Company 1 and Company 2], but there were some individual non-geographic and mobile rates for particular contracts that were lower. However, taken as a whole, this analysis suggests that the contract with [Â Company 1] contained the lowest rates in April 2009. Therefore the [Â Company 1] contract is almost certainly the contract with the lowest margins.
Annex 4

Modelling BT’s historical margins for Wholesale Calls

Introduction

A4.1 Ofcom has undertaken a detailed modelling exercise to analyse the historical margins earned by BT on its Wholesale Calls product. In Section 6 we discuss the conceptual and analytical framework adopted by Ofcom for this modelling exercise, and present the key results. This Annex explains in detail how we have implemented the modelling, including detailing the inputs and assumptions employed.794

A4.2 There are two main elements which must be considered in assessing the margin earned by the vertically integrated undertaking’s downstream operation:

- the downstream operation’s revenues – this is dependent on its prices and volumes; and
- the downstream operation’s costs – this is dependent on the upstream charges levied by the firm itself and other upstream input providers, and the downstream operation’s other costs of providing the product or service to customers.

A4.3 We explain how we have treated these two elements in our modelling of BT’s Wholesale Calls margins in the remainder of this Annex which is structured as follows:

(i) overview of the model – we start by providing a high-level overview of the model dimensions and scope;

(ii) sources of data – we explain the key data sources used throughout the model, specific sources are detailed later in the section;

(iii) Wholesale Calls volumes and revenues – we then explain in two separate sections our data and assumptions related to Wholesale Calls volumes and revenues, both for the total product and for each of the specific contracts of interest;

(iv) constructing the EEO cost stack – we provide an overview of the cost stack before explaining in detail our approach to each of the following categories of cost:

- upstream interconnection costs (i.e. call origination, call termination, CPS SAD and PPP);
- network costs;
- non-network costs; and

---

794 This Annex explains our current modelling approach. Section 6 contains more detail on any changes to approach from that taken in the Statement of Objections.
Overview of the model

A4.4 The model estimates the margins earned on the basis of both the EEO and the adjusted EEO test (as discussed in paragraphs 6.67 to 6.77 above) for 21 individual contracts and the BT Wholesale Calls product as a whole.

A4.5 The individual contracts considered\(^{795}\) are those with:

- \(\geq\).

A4.6 Table A4.1 demonstrates how we calculate the margin estimates. The broad mechanics of the calculation are the same for both the individual contract and total product tests. We explain how we calculated item numbers 1 to 5 in detail below.

Table A4.1: High level summary of margin calculations

<table>
<thead>
<tr>
<th>Item number</th>
<th>Item</th>
<th>Margin Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Revenues</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Interconnection costs</td>
<td>(= 1 - 2)</td>
</tr>
<tr>
<td></td>
<td>(call origination + call termination + PPP)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Core network costs</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Non-network costs</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>CPS charges</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Margin over interconnection costs</td>
<td>(= 1 - 2)</td>
</tr>
<tr>
<td>7</td>
<td>Margin over interconnection and core network costs</td>
<td>(= 1 - 2 - 3)</td>
</tr>
<tr>
<td>8</td>
<td>EEO margin</td>
<td>(= 1 - 2 - 3 - 4)</td>
</tr>
<tr>
<td>9</td>
<td>Adjusted EEO margin</td>
<td>(= 1 - 2 - 3 - 4 - 5)</td>
</tr>
</tbody>
</table>

Source: Ofcom

A4.7 In our base case, we have modelled the margins on a monthly basis over the period March 2008 to April 2009. As part of our sensitivity analysis, we have also considered the margins over an extended time period, from March 2008 to December 2010. We discuss this further in Section 6.

A4.8 Throughout this Annex, for illustrative purposes, we present tables showing how each item presented in Table A4.1 is estimated. These tables relate to the Wholesale Calls total product for:

(i) April 2009;
(ii) March 2008 to April 2009;
(iii) July 2008 to April 2009; and

\(^{795}\) See Annex 3 for an explanation as to why we chose these specific contracts.
A4.9 We bring the various tables together in Table A4.42 at the end of the Annex to show how the overall margin calculations are generated.

A4.10 For each individual contract, and for the total product, we separately consider 13 different call types. These are distinguished between “major” and “minor” call types. As we go on to explain below (i.e. from paragraph A4.53), our modelling treatment differs between these two broad categories of call type.

A4.11 The major call category consists of calls to the following number ranges:

- Local geographic;
- National geographic;
- O2;
- T-Mobile;
- Orange;
- Vodafone;
- H3G;
- Local non-geographic (“Lo-call”);
- National non-geographic (“National Rate”); and
- Freefone.

A4.12 The minor call category consists of the following broad categories of minor call types:

- International Direct Dial (“IDD”);
- Directory Enquiries (“DQ”); and
- Other minor calls.

A4.13 Within these broad minor call categories there are several hundred individual minor call types. As explained in paragraphs A4.129 to A4.151, we have used BT’s own detailed modelling of margins on these minor call types to calculate the overall margins for each of these three broad categories.

A4.14 Call prices and costs differ by time of day. Therefore, each of the 13 call types listed above are further split into three time of day (“ToD”) categories: day, evening and weekend. This results in 39 (i.e. 13 x 3) different call type/ToD combinations.

**Sources of data**

A4.15 We used three primary sources of data for our modelling:

- Information provided by BT in response to Ofcom’s use of its formal information gathering powers (section 26 of the Act) – this is the primary
source for information on call volumes, revenues, CLIs, downstream operating costs for the period March 2008 to April 2009;

- BT’s published Carrier Price List (“CPL”)796 – this is the principal source for information on interconnection and CPS charges; and

- Information and modelling provided by BT as part of its Response to the Statement of Objections – this is the main source of information on call volumes, revenues, CLIs, downstream operating costs for the period May 2009 to December 2010, as well as BT’s revised network cost modelling.797

A4.16 A summary of the section 26 Notices issued to BT as part of this investigation is presented in Section 3. For the purposes of estimating BT’s historical margins, we have principally relied on BT’s responses (and subsequent clarifications and corrections) to the 1st, 8th, 9th, 10th and 11th section 26 Notices.

**Wholesale Calls’ volumes**

A4.17 In response to our 8th section 26 Notice, BT provided us with monthly data on call volumes798 and revenues for each of the 21 individual contracts and the Wholesale Calls product as a whole, over the period March 2008 to April 2009.799 Data was provided for each of the call type and ToD combinations identified in paragraph A4.14 above, excluding Freefone (see paragraph A4.20).

A4.18 As part of its response to the Statement of Objections, BT provided data on the same basis for the period May 2009 to December 2010.800

A4.19 Both the volume and revenue data were sourced by BT from its BBFA system, which records minutes and revenues (based purely on usage801) by call type. BT explained in its response that the total revenues and volumes data for the total Wholesale Calls product are for both WCLA and WCLI802 customers.803,804

796 BT Carrier Price List: https://www.btwholesale.com/pages/static/Library/Pricing_and_Contractual_Information/carrier_price_list/index.htm

797 The data was originally provided to CRA for the purposes of its historical analysis, and was attached to CRA’s Report which forms Annex 1 to BT’s Response. The relevant files are listed in paragraph 154 of Annex 1, numbered 8 to 16. For convenience, when referring to specific files in this annex, we refer to the file numbers only, rather than their full filenames.

798 Note that throughout this Annex the term call volumes refers to call minutes unless otherwise stated.

799 Questions 20 and 21 of the 8th section 26 Notice.

800 See Files 8 to 11 accompanying BT’s Response to the Statement of Objections.

801 Revenues are calculated on the basis of minutes multiplied by the prevailing billing rate.

802 Wholesale Calls Line Associated (“WCLA”) is the default tariff applied to WLR lines. WCLI is any other Wholesale Calls tariff including [Æ].

803 BT response to Question 21 in the 8th section 26 Notice, received 3 July 2009.
Freefone call volumes

A4.20 BT was unable to provide information on Freefone volumes as the BBFA system does not record data on this call type. This is because Freefone calls do not result in a charge to the Wholesale Calls reseller customer. As the price charged to resellers for this call type is zero, the revenues from Wholesale Calls resellers are also zero.

A4.21 However, the margins earned over interconnection costs for the wholesale provision of Freefone minutes are not necessarily zero. The flow of funds for Freefone numbers is from the terminating network operator to the originating network operator, in contrast to all other call types where the flow of funds is in the opposite direction. The Freefone termination charge on BT’s CPL is negative to reflect this. The originating network operator receives revenues from the terminating operator and incurs costs of call origination and transit. The exact margin earned on Freefone minutes therefore depends on the spread between the termination revenues and the call origination and call transit costs.

A4.22 As the margin earned is not necessarily zero, excluding Freefone calls from our modelling could lead to an inaccurate margin estimate. We have therefore included an allowance for it in our estimates of BT’s Wholesale Calls margins. Data on call origination and Freefone call termination rates are published on the CPL and BT’s network costs modelling includes the downstream network costs for Freefone calls. Therefore the principal data required to estimate the margins earned by BT on Freefone calls are Wholesale Calls-specific call minutes.

A4.23 We have generated an estimate based on applying the ratio of Freefone call minutes to other major non-geographic (i.e. 0845 and 0870) call minutes for BT Group as a whole to the call minutes of Wholesale Calls-specific major non-geographic calls. The total Freefone minutes for the Wholesale Calls product estimated using this methodology are [\%] of total major calls minutes and [\%] of total (major and minor) call minutes over the period March 2008 to April 2009. Over the longer period from March 2008 to December 2010, the figures estimated are very similar ([\%] and [\%] respectively). These estimates appear to be a reasonable approximation as they are of a similar order of magnitude to that reported by CPSOs over the period March 2008 to April 2009 in data gathered through formal information requests, i.e. Freefone minutes as a proportion of total...
Final Decision

...minutes were estimated to be [>\%] for THUS, [>\%] for Gamma and [>\%] for Opal.\textsuperscript{809}

**Wholesale Calls’ revenues**

**What we sought to measure**

A4.24 In our 8\textsuperscript{th} section 26 Notice we asked BT for total billed revenues for 21 individual Wholesale Calls contracts and the Wholesale Calls product as a whole, split by the 39 call type/ToD combinations. The revenues we sought to measure are those from the sale of the wholesale end-to-end calls product only.

**What we received from BT**

A4.25 In response, BT provided monthly data from its BBFA system, for the period March 2008 to April 2009.\textsuperscript{810} As part of its response to the Statement of Objections, BT provided data on the same basis for the period May 2009 to December 2010.\textsuperscript{811}

A4.26 The revenues for each of the 10 major call type and the three minor call type categories we have modelled are summarised in Table A4.2 below. The data presented are for the total Wholesale Calls product.

<table>
<thead>
<tr>
<th>Table A4.2: Wholesale Calls total product BBFA revenues in £ millions</th>
</tr>
</thead>
</table>

\[\text{[\%]}\]

Sources: Response to Question 20 of the 8\textsuperscript{th} section 26 Notice received 3 July 2009; Files 8 to 11 accompanying BT’s Response.

A4.27 BT had previously provided us with monthly data on billed revenues for each Wholesale Calls customer for the period April 2005 to August 2008.\textsuperscript{812} This dataset was not suitable for use in our margin estimates as it only provides data on the totals for each customer in the month and does not provide revenue data split by call type. However, we were able to compare these data with the monthly customer totals over the period March 2008 to August 2008 generated from the BBFA data. This process identified some significant differences.

A4.28 We asked BT to clarify why these differences arose. In its response BT noted that BBFA generates revenues in the “earned month” which is the month in which the calls usage occurred, whereas the billed revenue data, which is based on data from customers’ bills, is allocated in the “billed month” (i.e. the month in which the bill is

\textsuperscript{809} We note that in a meeting with BT on 13 December 2009 to discuss how to derive a proxy for Freefone volumes, BT confirmed that it considered our methodology to be reasonable. This was reconfirmed by BT in a meeting on 27 August 2010. CRA also agreed that our approach to approximating Freefone volumes appears to be reasonable (see paragraph 20 of CRA’s Report).

\textsuperscript{810} Data for the Wholesale Calls product as a whole was supplied on 3 July 2009 in response to Question 20 of the 8\textsuperscript{th} section 26 Notice and data for the individual contracts was supplied on 7 August 2009 in response to Question 21 in the 8\textsuperscript{th} section 26 Notice.

\textsuperscript{811} See Files 8 to 11 accompanying BT’s Response.

\textsuperscript{812} “Billed_Revenue_Report_August_08_V1.0.xls” supplied in response to Question 21c of the 1\textsuperscript{st} section 26 Notice received 9 September 2008.
sent to the customer). The billed month is the month following the actual usage e.g. revenues from usage in May 2008 would be recorded in the BBFA system in May 2008 and in the billed revenue report in June 2008.

A4.29 BT further noted that the BBFA data is for “calls usage excluding [►] and other charges” whereas the billed revenue data includes all of the above revenue adjustments except [►].

How we have adjusted BBFA data to produce the final measure of revenues

A4.30 It was evident from BT’s response that the BBFA revenue data did not match the revenues we sought to measure as described in paragraph A4.24. However, the alternative data on billed revenues was also not an appropriate measure as it does not split the revenues by call type.

A4.31 As a result, we have used the BBFA revenue data which provides the necessary disaggregation by call type, but we have made a number of adjustments to the total revenues to better reflect the monies actually received by BT.

A4.32 BT identified the following types of manually applied credits and debits which explain the difference between the BBFA and billed revenues data:

- [►].
- Corrections for billing errors. These are mainly applied due to incorrect call charges being levied. This includes billing errors where particular call types were incorrectly rated and errors where usage relating to particular CLIs was excluded.
- [►].
- [►].

A4.33 We have excluded adjustments to revenue due to [►]. [►]. Therefore, while they affect [►], they do not affect the total levels of revenues received for Wholesale Calls over the period of the arrangement.

Corrections for billing errors and [►]

A4.34 We have applied the credits and debits relating to correction of billing errors and [►] by adjusting the total revenues in the months in which the billing errors or

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813 Email from BT to Ofcom dated 16 September 2009 regarding clarifications to Questions 20, 21 of 8th section 26 Notice.

814 The credits and debits were generally not driven by the consumption of a particular call type/ToD combination.

815 [►].

816 [► Discussion of credit arrangements], we treat such credits as a cost of sale in our modelling. However, we note that whether such line items are treated as revenue adjustments or non-network costs has no impact on the absolute margin over (adjusted or unadjusted) EEO costs.
failure to meet \( [\times] \) occurred. Credits to Wholesale Calls customers’ accounts are subtracted from the total revenues (as recorded in the BBFA system) to calculate the revised total revenues figure.

A4.35 We asked BT to provide detailed information on all the credits applied to the \( [\times] \) contracts over the period modelled in the Statement of Objections (March 2008 to April 2009).\(^{817}\) We also asked BT to explain specific differences between BBFA and billed revenues identified in particular months for a number of the other (generally smaller) contracts.\(^{818}\)

A4.36 The detailed revenue adjustment information provided for the largest contracts consisted of two main types of adjustment:

- “WCLA and WCLI System” applied credits and debits which are those applied by the Wholesale Calls billing system which “automatically applies credits and debits as corrections to bills following for example re-routing or re-rating activities”;\(^{819}\) and

- “WCLA and WCLI User” applied credits and debits which were manually applied.

A4.37 As the WCLA and WCLI System applied revenue adjustments are large in number and often low value, BT reported the sum of these revenue adjustments over the modelling period (i.e. March 2008 to April 2009) as a single value for each customer.\(^{820}\) For modelling purposes we have spread these single values uniformly over the 14 months.

A4.38 The manually applied revenue adjustments, which are fewer in number and generally larger in value, were recorded individually. We have allocated them in the month in which they were triggered (rather than the month in which they were applied to customers’ accounts). This approach represents a more accurate measure of the revenues received from customers’ usage of the Wholesale Calls product within the modelling period as it takes into account retrospective adjustments to revenues which were applied outside of our modelling period.

A4.39 There were two \( [\times] \) debits applied to the \( [\times] \) accounts on the 20 May 2009. \( [\times] \). BT explained to us that these debits were applied to correct for billing errors on calls to 0845 and 0870 numbers made between 1 April 2009 and 16 April 2009 inclusive.\(^{821}\) However, examination of the original BBFA data showed no fall in revenue per minute for these call types in April 2009. The billing errors therefore appear to have already been corrected in the BBFA revenue data and, as such, we have excluded the debits from our analysis.

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\(^{817}\) BT clarifications to Questions 20 and 21 of the 8th section 26 Notice responses.

\(^{818}\) We asked for the following contracts and dates: \( [\times] \).

\(^{819}\) BT response to further clarifications requested on Question 44 of the 8th section 26 Notice, received 20 January 2010.

\(^{820}\) As agreed between Ofcom and BT in a meeting on 8 December 2009.

\(^{821}\) BT response to follow up question to BT re: clarifications to Question 21 of the 8th section 26 Notice, received 19 February 2010.
A4.40 As part of its response to the Statement of Objections, BT provided data on credits and debits applied to individual contracts over the extended time period to December 2010. In addition, in response to our 11th section 26 Notice, BT informed us that this data did not reflect credits of £[✘] million and £[✘] million applied to the [✘] contracts respectively. These credits were given as a result of billing errors for international calls. We have included these credits in our analysis of margins over the period March 2008 to December 2010.

A4.41 The total revenue adjustments applied to BBFA revenues for the Wholesale Calls product are summarised in Table A4.3 below.

Table A4.3: Revenue adjustments applied to Wholesale Calls product total revenues, £ millions and as a percentage of total revenues

Sources: Ofcom analysis based on Question 20 of the 8th section 26 Notice received 3rd July 2009 and responses to clarificatory questions relating to BBFA revenue data; File 8 accompanying BT’s Response; response to Questions 5 and 8 of the 11th section 26 Notice.

A4.42 There were a number of [✘] rebates which were applied to [✘ Contract 2]. In its response to the 8th section 26 Notice, BT provided information on these payments to April 2009. In addition, BT provided information on payments between May 2009 and December 2010 as part of its response to the Statement of Objections. These are summarised in Table A4.4.

Table A4.4: [✘] revenue adjustments applied to [✘]

Sources: Response to Clarification 6 relating to Question 44 of the 8th section 26 Notice received 20 January 2010; File 8 accompanying BT’s Response; response to Question 15b of the 10th section 26 Notice.

A4.43 We have modelled the credits and debits relating to [✘] contractual inducements as additional non-network costs. Further details of how we allocated these [✘] are in paragraphs A4.202 and A4.203.

A4.44 [✘].

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822 See File 8 accompanying BT’s Response.

823 BT response to Questions 5 and 8 of the 11th section 26 Notice.

824 Consistent with the approach explained above, we have spread these payments over the months to which they relate.

825 On 23 March 2012, BT informed us that it had identified additional credit notes that it had not previously disclosed to Ofcom. We have not reflected this new information in the analysis presented in this decision given the stage at which we received the data. See paragraph 6.319.

826 BT response to Clarification 6 relating to Question 44 of the 8th section 26 Notice, received 20 January 2010.

827 See File 8 accompanying BT’s Response.
A4.45 BT also applied a £[X] credit to [X]. This is a credit which does not relate to the usage in a particular month so we have spread this equally over [X] time period. 828

A4.46 [X]. 829

Bad debt

A4.47 Both the BBFA and billed revenue data do not account for bad debt (i.e. unpaid bills) incurred by BT in the provision of Wholesale Calls. This is potentially relevant to our analysis as it affects the level of revenue actually earned by BT in the period under consideration.

A4.48 We therefore asked BT to provide us with monthly data on the total level of bad debt incurred by BT Wholesale Calls for all customers and separately for several large customers. 830 In its response BT explained that it considered bad debts on Wholesale Calls to be immaterial within the modelling period considered in the Statement of Objections, [X]. 831 BT further explained that “we bill on 28 day payment terms from the date of BT’s invoice and are very thorough on cash collection”. Therefore, we do not have a line item for bad debt in our modelling.

Measuring the EEO’s costs

A4.49 As noted in Section 6, in general terms there are two main cost categories in a margin squeeze cost stack:

- upstream input payments to either the vertically integrated undertaking’s own upstream operation or to other providers; and
- costs incurred by the vertically integrated undertaking’s downstream operation to transform the upstream inputs into the product or service consumed by customers.

A4.50 In this case, the primary upstream input costs are interconnection costs for services provided both by BT and by other operators. By ‘interconnection costs’ we are referring to call origination, call termination and PPP as explained below. 832 However, in the adjusted EEO test the upstream input costs also include CPS transaction charges (see paragraph 6.80).

---

828 In the summer of 2010, BT argued that [X]. In our view BT failed to satisfactorily justify what appears to be a rather unconventional approach. We have therefore not adopted its proposed approach. However we note that if we were to adopt BT’s approach, the margin earned on the Wholesale Calls product over the modelling period would be £[X] higher than we have estimated.

829 [X].

830 BT response to clarification 5 on Question 44 of the 8th section 26 Notice, received 5 December 2009.

831 BT response to clarification 5 on Question 44 of the 8th section 26 Notice, received 5 December 2009.

832 For the avoidance of doubt interconnection costs does not include any interconnection circuit costs as these are not incurred by BT.
A4.51 Under the EEO test the downstream operation’s costs are measured at the levels incurred by the vertically integrated firm, and can be grouped into two sub-categories:

- **Network costs** – the provision of wholesale end-to-end calls requires either the CPSO or BT to traverse calls over their own networks. As the EEO reflects BT’s costs of providing Wholesale Calls, the network costs included in the cost stack should be based on 100% DLE interconnection and, therefore, local tandem conveyance costs (where relevant) being incurred at the downstream level. This approach is consistent with that adopted by Ofcom in *Gamma Telecom*.

- **Non-network costs** – in addition to the costs of the various upstream and downstream network components to produce end-to-end calls, BT also incurs commercial costs associated with providing the Wholesale Calls service to customers. These costs include:
  - those associated with bidding for, winning and maintaining contracts;
  - key central functions such as finance, legal and regulatory affairs; and
  - systems costs such as billing systems or fraud management systems.

These costs, as incurred by BT, should be included in the cost stack.

A4.52 Table A4.5 below provides a high-level summary of the main cost stack elements in each of these categories. Our treatment of each element is discussed in detail in the remainder of this Annex.
### Table A4.5: High-level summary of the cost stack items

#### Interconnection costs (Upstream)

<table>
<thead>
<tr>
<th>Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call origination charges</td>
<td>Regulated charge. Charged on a pence per minute basis. Incurred on all calls except local geographic calls which terminate on the same or adjacent DLE.</td>
</tr>
<tr>
<td>CPS Same and Adjacent DLE charges</td>
<td>Regulated charge for call origination, transit, termination and PPP for calls originating and terminating on the same or adjacent DLE.</td>
</tr>
<tr>
<td>Geographic call termination charges</td>
<td>Regulated charges for call termination on BT’s or another fixed operator’s network (e.g. Virgin Media). Charged on a pence per minute basis.</td>
</tr>
<tr>
<td>Call termination for mobile numbers</td>
<td>Charges paid to mobile network operators for termination of calls to mobile numbers. Charged on a pence per minute basis.</td>
</tr>
<tr>
<td>Call termination for non-geographic numbers</td>
<td>Charges paid for call termination on non-geographic numbers (e.g. 0870 or 0845 numbers) on BT’s or another operator’s network. Charged on a pence per minute basis, except 0845 which is charged on a pence per call plus pence per minute basis.</td>
</tr>
<tr>
<td>Call termination for Freefone numbers</td>
<td>Charges paid by Freefone terminating operators to originating operators for origination and transit of Freefone calls. Charged on a pence per minute basis. Note that these charges are a negative “cost” i.e. revenues for the EEO.</td>
</tr>
<tr>
<td>Call termination and international transit charges for international calls</td>
<td>Charges paid to BT Global Services for the onward conveyance from the Digital International Switching Centre in the UK to termination of the call in its foreign destination.</td>
</tr>
<tr>
<td>Call termination charges for directory enquiries and other minor calls</td>
<td>Charges paid to BT and other CPs for termination of calls to directory enquiries and other minor call destinations.</td>
</tr>
<tr>
<td>PPP</td>
<td>Product management, policy and planning cost (i.e. the administrative costs incurred by BT as a result of providing narrowband interconnection). Again, this is a regulated charge. Charged on a pence per minute basis.</td>
</tr>
</tbody>
</table>

#### Network costs (Downstream)

<table>
<thead>
<tr>
<th>Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network costs</td>
<td>Costs incurred by the downstream operation for conveying calls between the call origination and call termination parts of the call.</td>
</tr>
</tbody>
</table>

#### Non-network costs (Downstream)

<table>
<thead>
<tr>
<th>Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-network costs</td>
<td>Costs of overheads which do not fall into any of the above cost categories such as systems or customer acquisition costs.</td>
</tr>
</tbody>
</table>

#### CPS charges (Upstream)

<table>
<thead>
<tr>
<th>Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPS annual charge</td>
<td>Annual charge paid to BT by all CPSOs.</td>
</tr>
<tr>
<td>CPS transaction charges</td>
<td>CPS transaction charges for bulk migration of CLIs, CLI set-up, remove etc. Charged on a per CLI basis.</td>
</tr>
</tbody>
</table>
Upstream interconnection costs: call origination, call termination, PPP and CPS SAD costs

A4.53 In this sub-section we consider the individual cost items in the ‘interconnection costs’ category in Table A4.5 above.

A4.54 The interconnection costs for all calls consist of three services:

- BT call origination;
- call termination; and
- PPP.

A4.55 In some cases, as we explain below, these charges can be grouped together into one payment (i.e. CPS SAD).

A4.56 We explain our approach to calculating each of these costs in the remainder of this sub-section which is structured as follows:

- We start by explaining the significance of CPS SAD to the cost stack and how it impacts on our estimates of all three of the interconnection cost elements for local geographic calls.
- We then go on to explain our approach to estimating the PPP and call origination charges.
- We next go on to explain our approach to call termination, which, given the diversity of call termination providers is more complex than call origination and PPP.
- Finally, we explain the approach to modelling minor calls, which follows a different approach to that used for major call types.

Treatment of CPS SAD Calls

A4.57 In July 2004 Ofcom published its Statement: “Addressing the Local Call Disadvantage”. This explained that the CPS SAD service was introduced to remedy the cost disadvantage that CPSOs faced compared to BT.

A4.58 Prior to the introduction of CPS SAD, CPSOs faced higher costs in providing local and national calls than BT because of the nature of their relative network architectures. These higher costs arose for calls that both originated and terminated on either the same or adjacent DLE. As illustrated in Figure A4.6, when these two specific types of call are carried on BT’s network they do not involve any transit to or from the tandem switches. However, for a CPSO, even if they are connected at the DLE, the calls will need to travel up to the tandem switch level for processing on the CPSO’s network equipment. This means that CPSOs incur additional local-tandem conveyance costs relative to BT.

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834 By “adjacent” we refer to what should strictly be referred to as “adjacent and connected”.
A4.59 To resolve this competitive disadvantage, Ofcom introduced the CPS SAD service. This is available to CPSOs at the DLEs they are interconnected to, and essentially involves BT transiting the calls as they would if they were not CPS-based calls.

A4.60 As discussed in Section 6, the EEO cost stack is based on BT’s costs of providing Wholesale Calls. As BT is, by definition, interconnected at every DLE, the CPS SAD product is available on all calls that originate and terminate on either the same or adjacent DLE.

A4.61 As the CPS SAD charges replace call origination, PPP and call termination charges for the minutes to which they apply, we have taken it into account in estimating the total call origination, termination and PPP charges for local geographical calls (only) in the cost stack. The inclusion of CPS SAD results in lower interconnection charges than if we were not to take CPS SAD into account.

A4.62 The details of our modelling approach are explained in the relevant sub-sections below. However, it is relevant to note that the exact modelling treatment of the various interconnection cost services (as long as CPS SAD is reflected somewhere in the cost stack) has no effect on the resulting margin over (adjusted or unadjusted) EEO costs.

**BT PPP charges**

**Charge description**

A4.63 BT’s PPP charge is used to recover the administrative costs incurred by BT as a result of providing narrowband interconnection. The charge is levied on all calls that use any part of BT’s narrowband network. PPP is only incurred once on any call.

A4.64 PPP is a regulated product for which the charges are controlled as part of the Network Charge Control. It is charged on a pence per minute basis and the rates are published on the CPL. While it does not vary by customer or call destination, it does vary by time of the day.

A4.65 To avoid the potential for double-counting, PPP charges have been removed from BT’s origination and termination charges (including CPS SAD) within our modelling, and included as a separate cost item.
Cost estimate

A4.66 The pence per minute PPP charges that applied in April 2009 are shown in Table A4.7. We also present the total PPP charges estimated for the total Wholesale Calls product in April 2009 and over the modelling period. These total charges for each Wholesale Calls customer are calculated by multiplying the prevailing pence per minute PPP charge by the total call minutes for each customer for major call types in the month.

Table A4.7: PPP charges in pence per minute and £ millions terms

<table>
<thead>
<tr>
<th>PPP charge in April 2009, pence per minute</th>
<th>Day</th>
<th>Evening</th>
<th>Weekend</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total PPP charges incurred on major call types by Wholesale Calls total product in April 2009, £ millions</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>Total PPP charges incurred on major call types by Wholesale Calls total product, March 2008 to April 2009, £ millions</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>Total PPP charges incurred on major call types by Wholesale Calls total product, July 2008 to April 2009, £ millions</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>Total PPP charges incurred on major call types by Wholesale Calls total product, July 2008 to December 2010, £ millions</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
</tr>
</tbody>
</table>

Sources: Ofcom analysis based on BTW Carrier Price List Section C3.1 and Question 20 of the 8th section 26 Notice; File 8 accompanying BT’s Response.

BT Call Origination charges

Charge description

A4.67 Reflecting our modelling treatment of CPS SAD (as discussed above) there are two elements to the call origination charges:

- the charges for CPS SAD local geographic calls; and
- the charges for all other (i.e. non-CPS SAD) call minutes.

A4.68 As we have discussed in Section 6, we do not exclude any volumes from call origination charges.

A4.69 We start by considering the charges for the non-CPS SAD minutes. Call origination is a regulated product for which the charges are controlled as part of the Network Charge Control.835 It is incurred on a pence per minute basis. While it does not vary by customer or call destination, it does vary by time of the day (i.e. there are separate charges for daytime, evening and weekends).

A4.70 There are two variants of call origination that CPs can purchase from BT: with and without operator assistance. The operator assistance charge is levied to recover the

835 See BT’s CPL Section C5 (Network Access Provision section of Section C NCCN Services) http://btwholesale.com/pages/downloads/service_and_support/pricing_information/carrier_price_list_browsable/c5.rtf.
cost of BT’s operator service. As we explain in paragraphs 6.318 to 6.329, we have used call origination including operator assistance in our analysis.

A4.71 There are two types of CPS SAD charge levied by BT on a pence per minute basis:

- “CPS SAD Own DLE” – for calls originating and terminating on the same DLE; and
- “CPS SAD Connected and Adjacent DLE” – for calls originating and terminating on a connected and adjacent DLE.

A4.72 There are different call transit costs incurred by BT for these two different CPS SAD services and, as such, the charges for the services vary. For comparison, we present the two charges (excluding PPP) in Table A4.10. Reflecting the different charges, we include the costs for the two services separately within our modelling.

A4.73 In addition to the split between same and adjacent DLE, as with call origination, CPS SAD can be purchased from BT either with or without operator assistance. Consistent with our treatment of call origination, we have used the "with operator assistance" variant. But, again, our conclusions are not sensitive to this assumption.

Cost estimate: for all non-local geographic major call types

A4.74 To calculate the total call origination charges for all the major call types other than local geographic calls, we multiply total monthly call minutes, split by time of day and call type (for completeness), by the call origination with operator assistance (but excluding PPP) charge from the CPL.

A4.75 In Table A4.8 we present the pence per minute call origination charges (with operator assistance) for April 2009. The charges exclude PPP. We also present the total call origination charges estimated for the total Wholesale Calls product in April 2009 and over the modelling period. The total call origination charges exclude the local geographic call minutes discussed above.

---

836 Section B7.03 of BT’s CPL notes that:
CPS Local Exchange Calls Own DLE charge = PPP + Call Origination Local Exchange + Call Termination Local Exchange Stick; and
Connected and Adjacent DLE = PPP + Local-Local Conveyance Stick + Call Origination Local Exchange + Call Termination Local Exchange.
Table A4.8: Call origination charges (excluding PPP) for non-local geographic major call types in pence per minute and £ millions terms

<table>
<thead>
<tr>
<th>CO inc. operator assistance in April 2009, pence per minute</th>
<th>Day</th>
<th>Evening</th>
<th>Weekend</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.2631</td>
<td>0.1204</td>
<td>0.0948</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total CO charge (inc. operator assistance) for Wholesale Calls total product on non local geographic major call types in April 2009, £ millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>[X]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total CO charge (inc. operator assistance) for Wholesale Calls total product on non local geographic major call types March 2008 to April 2009, £ millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>[X]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total CO charge (inc. operator assistance) for Wholesale Calls total product on non local geographic major call types July 2008 to April 2009, £ millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>[X]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total CO charge (inc. operator assistance) for Wholesale Calls total product on non local geographic major call types July 2008 to December 2010, £ millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>[X]</td>
</tr>
</tbody>
</table>

Sources: Ofcom analysis based on BTW Carrier Price List Section B 1.10.2 and Question 20 of the 8th section 26 Notice; File 8 accompanying BT’s Response.

Cost estimate: local geographic calls

A4.76 For the purposes of modelling, we have reflected the CPS SAD costs in our call origination estimates for the local geographic call minutes by creating a weighted average pence per minute call origination charge (split by ToD). The weighted average uses data provided by BT on the proportion of local call minutes in April 2009 that either terminated on: the same DLE; adjacent and connected DLE; a non-same or adjacent BT DLE; or other fixed network operators’ networks.

A4.77 In its response to Question 29 of the 8th section 26 Notice, BT provided us with estimates of the proportion of local geographic call traffic in April 2009 which terminated on each of the four options listed in paragraph A4.3 above.

A4.78 BT explained in its response that its systems did not record the data that we had requested. It therefore had to estimate the proportion using a number of assumptions.

A4.79 We have adopted BT’s methodology, though we have altered some of the input assumptions in order to derive what we consider to be a better estimate of the traffic split BT Wholesale Calls would have experienced over the period of the investigation. A detailed explanation of the methodology and assumptions used by Ofcom is set out in the model.837

A4.80 The traffic proportion estimates used in our modelling are presented in Table A4.9 below.

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837 See the worksheet “CPS SAD traffic proportions” in the main margin model.
Table A4.9: Routing for calls to local geographic numbers, April 2009

Source: Question 29 of the 8th section 26 Notice, response received 3rd July 2009.

A4.81 Using these routing data we classify all local geographic call minutes (separately) into three categories:

- CPS SAD same DLE traffic;
- CPS SAD adjacent DLE traffic; and
- Non-CPS SAD call traffic.

A4.82 For the CPS SAD same DLE traffic, we apply the “own DLE” charge. For the CPS SAD adjacent DLE traffic, we apply the “connected and adjacent DLE” charge. The pence per minute charges for April 2009 are presented in Table A4.10.

Table A4.10: CPS Local Exchange Calls charges (including Intermediary Services and Operator Assistance but excluding PPP) in April 2009, pence per minute

<table>
<thead>
<tr>
<th></th>
<th>Day</th>
<th>Evening</th>
<th>Weekend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same DLE, pence per minute</td>
<td>0.39</td>
<td>0.18</td>
<td>0.14</td>
</tr>
<tr>
<td>Adjacent DLE, pence per minute</td>
<td>0.50</td>
<td>0.23</td>
<td>0.18</td>
</tr>
</tbody>
</table>

Source: BTW Carrier Price List Section B7.03

A4.83 For all the non-CPS SAD minutes we used the standard call origination with operator assistance (but excluding PPP) charge from the CPL (see Table A4.8). This is split by time of day.

A4.84 In Table A4.11 we present the overall weighted average call origination charge (in pence per minute) for local geographic calls in April 2009 and the total estimated call origination (including CPS SAD) charges for local geographic calls for the total Wholesale Calls product for April 2009 and over the modelling period. The total local geographic origination charges in each month are calculated by multiplying total local geographic call minutes, split by ToD, by the prevailing weighted average local geographic origination rates.

Table A4.11: Call origination charges (excluding PPP) for local geographic calls in pence per minute and £ millions terms

<table>
<thead>
<tr>
<th></th>
<th>Day</th>
<th>Evening</th>
<th>Weekend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same DLE, pence per minute</td>
<td>0.39</td>
<td>0.18</td>
<td>0.14</td>
</tr>
<tr>
<td>Adjacent DLE, pence per minute</td>
<td>0.50</td>
<td>0.23</td>
<td>0.18</td>
</tr>
</tbody>
</table>

Source: Ofcom analysis based on BTW Carrier Price List Sections B1.02, B7.03 and Question 20 of the 8th section 26 Notice; File 8 accompanying BT’s Response.

Call termination charges: general overview

A4.85 The calculation of call termination charges is less straightforward than the calculation of call origination and PPP charges as there are a number of termination providers. The types of termination charges we have explicitly modelled for the various major call types are summarised in Figure A4.12 below.
Figure A4.12: Main call termination services for major call types

Call termination charges for geographic calls

A4.86 There are many fixed network operators ("FNOs") which provide call termination for geographic calls. While the termination rates for the period being modelled were broadly similar, there was still some variation between the charges levied by individual CPs.

A4.87 Rather than separately estimating total termination charges for calls to each individual FNO’s network, we have used weighted average termination charges. Specifically, for each month we have calculated one weighted average termination charge for local geographic calls and one for national geographic calls.

A4.88 The weighted average charges are based on:

- the termination charges levied in each month by ten major FNOs, plus BT;
- the distribution of traffic terminating on each FNO’s network (including BT) in April 2009; and
- for local calls, the proportion of traffic using CPS SAD.

A4.89 Whereas we have modelled the termination charges for the ten major FNOs in detail, we have assumed that the traffic terminating on the remaining proportion of terminating FNOs, which accounts for between [3>]% and [7<]% of terminated

---

838 The 10 FNOs were: Cable & Wireless U.K., COLT Telecommunications, Energis Communications Limited, Gamma Telecom Holdings Limited, Global Crossing (UK) Telecommunications Limited, Opal Telecom Limited, Telewest Limited, Thus plc, Verizon UK Limited and Virgin Media Limited.

839 The BT daytime single tandem rate in April 2009 was 0.36ppm compared with the average termination rate of the 10 major FNOs of 0.29ppm. We would expect the termination rate received by the top 10 FNOs to be lower than the remaining FNOs (excluding BT) as the top 10 FNOs are more deeply interconnected to BT’s network than the smaller FNOs.
minutes (see Table A4.13 below), is charged at a level consistent with the BT single tandem termination rate.

A4.90 As explained in paragraph A4.61, we have included all the CPS SAD charges in the call origination costs. There are therefore no costs for call termination for the CPS SAD local call traffic. As a consequence, the approach to calculating weighted average termination rates for local and national geographic calls differs between these two call types. We explain the two different approaches below.

Cost estimate: national geographic calls

A4.91 To calculate the total call termination charges for national geographic calls we multiply total monthly call minutes, split by time of day, by the weighted average call termination rates calculated for national calls.

A4.92 The charges and the traffic proportions used as weights in the weighted average termination rate calculations are presented in Table A4.13 below.

Table A4.13: Fixed network traffic proportions and termination rates in April 2009, pence per minute

<table>
<thead>
<tr>
<th>Sources: Ofcom analysis based on Questions 30 and 31 of the 8th section 26 Notice response received 3 July 2009 and BTW Carrier Price List Section B1.01, B1.02.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note: For calls terminating on BT's network, we have used the BT local exchange termination charges.</td>
</tr>
</tbody>
</table>

A4.93 Reflecting the potential for call termination patterns to vary between local and national calls, we originally requested that BT provide us with the data on call mix split by local and national calls. However, BT informed us that the destinations of local and national calls are not separately identified in the BT Wholesale interconnect billing system. Therefore, BT assumed that local and national geographic calls have the same destinations.

A4.94 Given this data availability limitation we have assumed that the mix of calls terminating on each individual CP’s network is the same for both local and national geographic calls. We are not aware of any reason to expect that the patterns would differ significantly so we consider this to be a reasonable approach.

A4.95 The resulting weighted average pence per minute national geographic call termination rates are reported in Table A4.14 below. We also present the estimated total call termination charges for national geographic calls for the total Wholesale Calls product in April 2009 and over the modelling period.

Table A4.14: Weighted average national geographic termination rates, excluding PPP

Sources: Ofcom analysis based on BTW Carrier Price List Section B1.0.1, B1.02 and response to Question 32 of the 8th section 26 Notice received 3 July 2009; File 8 accompanying BT's Response.

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840 BT responses to Questions 31 and 32 of the 8th section 26 Notice, received 3 July 2009.

841 Letter from BT accompanying response to Questions 31 and 32 of the 8th section 26 Notice, received 3 July 2009.
Cost estimate: local geographic calls

A4.96 As discussed above, we have chosen, for modelling purposes, to include the CPS SAD charges in the call origination costs for local geographic calls. Therefore, the weighted average call termination charge for local geographic calls includes a zero charge for the two types of CPS SAD calls.

A4.97 We have used the same routing data obtained from BT used in the calculation of the weighted average call origination charge above (see Table A4.9) to determine the split of CPS SAD and non-CPS SAD traffic. This traffic split provides the weights to calculate the overall weighted average local geographic call termination rate. The non-CPS SAD traffic uses the weighted average call termination charges reported in Table A4.14 above.

A4.98 The resulting weighted average termination rate for local geographic calls is reported in Table A4.15. We also present the total termination charges for local geographic calls for the total Wholesale Calls product for April 2009 and over the modelling period. The total local geographic termination charges in each month is calculated by multiplying total local geographic call minutes, split by ToD, by the prevailing weighted average local geographic termination rates.

Table A4.15: Weighted average local geographic call termination rate, excluding PPP

Sources: Ofcom analysis based on BTW Carrier Price List Section B1.0.1, B1.0.2 and Question 29, 30, 32 in the 8th section 26 Notice responses received 3 July 2009; File 8 accompanying BT’s Response.

Call Termination Charges for Calls to Mobiles

Charge description

A4.99 Mobile termination charges are a significant part of the cost stack. While they account for only [<<]% of volumes over the period March 2008 to December 2010, call rates and termination charges are high relative to geographic call types. This means that calls to mobiles have a proportionately larger impact on margins.

A4.100 The termination rates for the five main MNOs (i.e. O2, T-Mobile, Orange, Vodafone and H3G) are regulated and subject to a charge control. However, over our modelling period, there is significant and frequent variation in the rates charged by the operators, in particular H3G, as demonstrated in Figure A4.16 below. This is a practice known as “flip-flopping”.

349
A4.101 Mobile termination rates over the period April 2007 to March 2011 were set in the March 2007 Mobile Call Termination Statement. However, this charge control was appealed to the CAT by BT resulting in the termination rates being revised downwards for the period from 2 April 2009 until the end of the charge control.

A4.102 However, in addition to changing the charges on a forward-looking basis, BT also sought to have the charges for the period April 2007 to March 2009 changed on a retrospective basis. This involved BT taking the matter before the Court of Appeal. Reflecting this position, BT changed the mobile termination rates on the CPL on 31 July 2009 for the two year period up to April 2009.

A4.103 However, on 20 April 2010, the Court of Appeal rejected BT’s arguments that retrospection was justified in this case. As a consequence, the original termination rates that prevailed on the CPL prior to BT’s July 2009 revision stand.

A4.104 For the period to 31 July 2009, we have used the original rates set in March 2007, reflecting the Court of Appeal’s decision. Furthermore, we note that the original rates were the prevailing (and expected) charges at the time that BT and the CPSOs were setting prices and competing for reseller contracts. From 31 July 2009 onwards, we use the revised (lower) rates.

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844 BT clarification 9, received 23 October 2009.

845 *Vodafone Limited and others v BT plc and Ofcom* [2010] EWCA Civ 391.
Total termination charges in each month are calculated by multiplying the volume of call minutes to each MNO split by time of day by the relevant prevailing termination rate for each MNO.

In Table A4.17 we present the assumed pence per minute termination charges as on 1 April 2009 for each of the five MNOs, as well as the total call termination charge for the Wholesale Calls total product in April 2009 and over the modelling period.

**Table A4.17: Mobile termination rates in pence per minute and £ millions terms**

<table>
<thead>
<tr>
<th></th>
<th>Day</th>
<th>Evening</th>
<th>Weekend</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>O2 (fm1) termination rate in April 09, pence per minute</td>
<td>5.6537</td>
<td>5.6537</td>
<td>5.6537</td>
<td>-</td>
</tr>
<tr>
<td>T-Mobile (fm3) termination rate in April 09, pence per minute</td>
<td>5.8630</td>
<td>5.8630</td>
<td>5.8630</td>
<td>-</td>
</tr>
<tr>
<td>Orange (fm4) termination rate in April 09, pence per minute</td>
<td>3.9999</td>
<td>4.0100</td>
<td>12.4596</td>
<td>-</td>
</tr>
<tr>
<td>Vodafone (fm5) termination rate in April 09, pence per minute</td>
<td>5.7450</td>
<td>5.7450</td>
<td>5.7450</td>
<td>-</td>
</tr>
<tr>
<td>H3G (fm6) termination rate in April 09, pence per minute</td>
<td>11.8400</td>
<td>5.0000</td>
<td>2.0000</td>
<td>-</td>
</tr>
</tbody>
</table>

Total calls to mobile CT charge for Wholesale Calls total product, April 09, £ millions

Sources: Ofcom analysis based on Question 20 of the 8th section 26 Notice and BTW Carrier Price List Section 1.0.2; File 8 accompanying BT’s Response.

**Call Termination Charges for Calls to 0845 and 0870**

**Charge description**

As explained in Section 6 we consider that the EEO cost stack should include termination charges for all traffic so, in contrast with BT’s approach to modelling non-geographic call termination charges, we do not assume that the EEO is active in providing upstream non-geographic number hosting services.

Local non-geographic (0845) termination is charged on a pence per call and pence per minute (charged from the first minute) basis. National non-geographic (0870) termination is charged on a pence per minute basis only. For modelling purposes we have included the per call element of the 0845 termination charges by incorporating it with the per minute element in a weighted average pence per minute termination rate. We explain how we calculate this weighted average in paragraph A4.121 below.

Prior to November 2008 the termination charges levied by BT and other terminating CPs for calls to 0845 and calls to 0870 numbers were at a similar level, with BT charging slightly lower rates than other terminating CPs. In November 2008, BT
issued NCCN908 which increased its termination charges for 0845 and 0870 calls above those charged by other terminating operators.

A4.110 In paragraphs 6.316 and 6.317 we explain that, beginning in November 2008, resellers who discounted 0845 and 0870 calls to their customers were eligible for NCCN908 discounts, that is, discounted call termination charges on 0845 and 0870 calls. For the reasons explained in Section 6, the BT termination charges we have used now reflect NCCN908 discounts. Our approach to reflecting these discounts is explained below.

NCCN908 discounts

A4.111 In its Report, CRA explained that the effect of the NCCN908 discount is to keep call termination rates on 0845 and 0870 calls at their October 2008 level from November 2008 onwards. BT further explained that some operators have since sought to renegotiate lower rates, resulting in rates that are “usually equivalent to the prevalent NTS formula calculator rate rather than the October 2008 rates”. BT noted that not all operators had renegotiated, citing TalkTalk Group as an example.

A4.112 BT also provided extracts from bills to [>] showing the prices charged for terminating 0845 calls over the period January 2010 to December 2010. Although [<], the rates appear to be similar to the NTS formula calculator rate. [<].

A4.113 BT further explained that NCCN908 discounts applied to 0845 calls from November 2008 to the end of the period we have modelled, and continue to apply today. However, NCCN908 discounts on 0870 calls ceased in August 2009, when 0870 was removed from the NTS call origination condition.

A4.114 In its historical modelling, CRA used the October 2008 BT termination rates for 0845 and 0870 calls for as long as NCCN908 discounts applied. Although the actual rates paid by other operators does vary between operators, we consider that using the October 2008 rates is the most appropriate approach to implementing the EEO test. Figures A4.18 and A4.19 below show the effect of discounts on the daytime BT termination rates for 0845 and 0870 calls.

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846 See paragraph 131 of CRA’s Report.

847 BT response to Question 8 of the 10th section 26 Notice.

848 “Q6 NCCN908 10th s26.xlx” attached to BT’s Response to Question 6 of the 10th section 26 Notice.

849 BT’s Response to Question 8 of the 10th section 26 Notice.

850 For 0870 calls from August 2009, we use the prevailing BT termination rates. On 1 November 2009, BT introduced termination charges for 0845 and 0870 call types that vary depending on the retail charge payable by the originating operator’s retail customers. Absent NCCN908 discounts, BT confirmed that Wholesale Calls would incur charges at the lowest rung of the ladder if it were transfer charged for the cost of termination (see BT’s Response to Question 10 of the 10th section 26 Notice). For the avoidance of doubt, NCCN908 discounts do not affect the termination rates charged by other CPs.
Figure A4.18: BT terminated 0845 termination charges (daytime), with and without NCCN908 discounts

Source: Ofcom analysis based on File 8 accompanying BT’s Response to the Statement of Objections.

Figure A4.19: BT terminated 0870 termination charges (daytime), with and without NCCN908 discounts

Source: Ofcom analysis based on File 8 accompanying BT’s Response to the Statement of Objections.

A4.115 Reflecting the different termination rates charged by BT and the other CPs during our modelling period, we have used an ‘operator weighted average’ termination charge to estimate the termination costs associated with 0845 and 0870 call minutes. We explain how we calculate the ‘operator weighted average’ termination charges in the following paragraphs.

Calculation of the ‘operator weighted average’ termination charges

A4.116 Total termination charges are calculated by multiplying call minutes for each non-geographic call type, split by time of day by the appropriate weighted average termination rate.

A4.117 The weighted average 0870 termination rates are the weighted average of BT’s and other terminating operators’ 0870 termination rates, where the weights are the percentage of BT originated call traffic terminating on BT’s and other terminating operator hosted 0870 numbers respectively. The 0870 termination rates charged by BT and other terminating operators are summarised in Table A4.20 below.

851 Source: Retail CSCS Data provided in response to Question 1 of the 9th section 26 Notice. Market share data is relating to April 2009.
Table A4.20: Termination charges for calls to 0870 numbers in pence per minute and £ millions terms

<table>
<thead>
<tr>
<th></th>
<th>Day</th>
<th>Evening</th>
<th>Weekend</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT terminated 0870 pence per minute termination charges in April 2009</td>
<td>6.0983</td>
<td>4.1432</td>
<td>1.9116</td>
<td>-</td>
</tr>
<tr>
<td>Other CP terminated 0870 pence per minute termination charges in April 2009</td>
<td>6.6053</td>
<td>4.6011</td>
<td>2.1061</td>
<td>-</td>
</tr>
<tr>
<td>Proportion of BT-originated call minutes to 0870 numbers terminating on BT’s network in April 2009</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
<td>-</td>
</tr>
<tr>
<td>Weighted average 0870 pence per minute termination charges in April 2009, pence per minute</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
<td>-</td>
</tr>
<tr>
<td>Total 0870 call termination charges for total Wholesale Calls product in April 2009, £ millions</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>Total 0870 call termination charges for total Wholesale Calls product March 2008 to April 2009, £ millions</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>Total 0870 call termination charges for total Wholesale Calls product July 2008 to April 2009, £ millions</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>Total 0870 call termination charges for total Wholesale Calls product July 2008 to December 2010, £ millions</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
</tr>
</tbody>
</table>

Sources: Response to Questions 1-5 in the 9th section 26 Notice; File 8 accompanying BT’s Response.

A4.118 To calculate the weighted average 0845 termination rate we first calculated both the ‘operator weighted average’ pence per minute and the ‘operator weighted average’ pence per call 0845 termination rates. We then converted these into a single weighted average pence per minute termination rate (for each time of day period). We explain these two stages below.

A4.119 The operator weighted average 0845 termination rates (both per minute and per call) are calculated as the weighted average of BT’s and other terminating operators’ 0845 termination rates, where the weights are the percentage of BT originated call traffic terminating on BT’s and other terminating operator hosted 0845 numbers respectively. The weighted average pence per minute and pence per call (set-up fee) termination rates are reported in Table A4.21 below.

---

852 Source: Questions 1-5 of the 9th section 26 Notice. We have used the “0845 Long Duration” pence per minute charges listed in Section B1.02.3 of the BTW Carrier Price List as the 0845 (“LCFA”) short duration charging structure was removed prior to the start of the modelling period so that all 0845 calls are now treated as long duration.
Table A4.21: Pence per minute and pence per call termination rates for calls to 0845 numbers

<table>
<thead>
<tr>
<th>Proportion of BT-originated call minutes to 0845 numbers terminated on BT’s network in April 2009</th>
<th>Day</th>
<th>Evening</th>
<th>Weekend</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT terminated 0845 pence per minute termination charges in April 2009</td>
<td>1.8666</td>
<td>0.5350</td>
<td>0.4437</td>
</tr>
<tr>
<td>Other CP terminated 0845 pence per minute termination charges in April 2009</td>
<td>2.0810</td>
<td>0.6543</td>
<td>0.4981</td>
</tr>
<tr>
<td>Operator weighted average 0845 pence per minute termination charges in April 2009</td>
<td>[×</td>
<td>×</td>
<td>×]</td>
</tr>
<tr>
<td>Operator weighted average 0845 pence per call (set up fee) termination charges in April 2009</td>
<td>[×</td>
<td>×</td>
<td>×]</td>
</tr>
</tbody>
</table>

Sources: Questions 1 to 5 of the 9th section 26 Notice; File 8 accompanying BT’s Response.  
Note: The BT and other CP terminated pence per call termination charges are not shown in the table as these were the same in April 2009. Therefore, only the operator weighted average is shown.

A4.120 The average duration of calls to 0845 numbers in each time of day period is calculated using data on the volume of 0845 call minutes and the number of 0845 calls made by all Wholesale Calls customers.

A4.121 Using this average call duration the weighted average pence per minute 0845 termination rate is given by:

\[
\text{Weighted average CT charge} = \frac{\text{PPC}}{\text{Average call duration}} + \frac{\text{PPM}}{\text{Average call duration}}
\]

Where PPC and PPM are the 0845 operator weighted average pence per call charge pence per minute charges calculated as described above.

A4.122 The resulting weighted average 0845 termination charges are reported in Table A4.22 below. We also present the total call termination charge for each non-geographic call type for the Wholesale Calls total product.

Table A4.22: Termination charges for calls to 0845 numbers in pence per minute and £ millions terms

[×]

Sources: Ofcom analysis based on Questions 20, 26 and 27 in the 8th section 26 Notice responses received 3 July 2009 and 7 August 2009 and responses to Questions 1-5 of the 9th section 26 Notice; File 8 accompanying BT’s Response.

Call termination for Freefone numbers

Charge description

A4.123 The flow of funds for Freefone numbers is from the terminating network operator to the originating network operator, in contrast to all other call types. The Freefone charge on BT’s CPL is negative to reflect this.

A4.124 The Freefone call termination charge covers the originating network operator’s costs of origination and conveyance up to the point of interconnection with the terminating network operator, and an uplift to cover the costs of retailing Freefone calls. The Freefone call termination charge received by the originating network operator is greater than the sum of the call origination charge and the PPP charges.
so the margin over interconnection costs is positive (and equal to the Freefone retail uplift margin).

A4.125 The size of the Freefone call termination charge depends on where the originating network operator hands the call over to the terminating CP. The point of handover depends on the level of interconnection of terminating CPs with BT. As explained in Section 6 we assume that the EEO is interconnected at all of BT's DLEs.

A4.126 Freefone termination rates differed between BT and other terminating operators during the relevant period. [3] Therefore, in a similar treatment to calls to 0845 and 0870 numbers, we have used a weighted average Freefone termination rate which blends the BT and other CP rates. The weights are BT's and the other terminating operators' (in aggregate) market shares in Freefone call termination in the year 2008/09. The termination rates used are the prevailing termination rates charged by BT and other terminating operators respectively.

A4.127 The call origination, PPP and network costs for Freefone call minutes are included in our modelling in the same way as for other major call types as discussed above.

Cost estimate

A4.128 In Table A4.23 we present the pence per minute Freefone call termination charges for BT-terminated calls and calls terminated by other CPs in April 2009. We also present the total call termination charges estimated for the total Wholesale Calls product based on the weighted average Freefone termination rates.

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853 The full range of Freefone call termination charges are shown in the NTS calculator.

854 Questions 1, 11, 12, 13, 14 and 15 of the 9th section 26 Notice dated 17 August 2010.

855 Freefone volume data split between BT terminated calls and other CP terminated calls supplied in response to Question 2 of the 4th section 135 Notice relating to NTS Retail Uplift response received 14 June 2010.
Table A4.23: Freefone termination charges in pence per minute and £ millions terms

<table>
<thead>
<tr>
<th>Proportion of BT-originated call minutes to Freefone numbers terminating on BT’s network in 2008/09</th>
<th>Day</th>
<th>Evening</th>
<th>Weekend</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freefone [× single tandem] rate in April 2009, pence per minute</td>
<td>-0.6481</td>
<td>-0.2967</td>
<td>-0.2336</td>
<td>-</td>
</tr>
<tr>
<td>Freefone [× DLE] rate in April 2009, pence per minute</td>
<td>-0.5325</td>
<td>-0.2438</td>
<td>-0.1920</td>
<td>-</td>
</tr>
<tr>
<td>Weighted average Freefone termination rate in April 2009, pence per minute</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: Ofcom analysis based on Question 20 of the 8th section 26 Notice response received 3 July 2009 and Question 6 of the 9th section 26 Notice response received 24 August 2010; File 8 accompanying BT’s Response.

**Interconnection costs for minor call types**

**Charge description**

A4.129 As explained in paragraph A4.12 above we split minor calls into three broad categories:

- directory enquiries calls (“DQ”);
- international direct dial calls (“IDD”); and
- ‘other’ minor calls.

A4.130 Within each of these main categories there are several hundred individual call types. As we explain in Section 6, we have adopted the detailed modelling of margins on minor call types (with adjustments), provided by BT to CRA, which was then included in its Response.856

**BT’s modelling approach**

A4.131 BT’s modelling calculates monthly margins over interconnection costs (in absolute terms) for each minor call type (split by time of day), over the period July 2007 to December 2010. The modelling has been carried out for the Wholesale Calls product as a whole, as well as for each of the 21 individual contracts analysed.

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856 See Files 9 to 14 accompanying BT’s Response, and paragraphs 115 to 126 of CRA’s Report.
A4.132 The calculation of margins uses data on monthly minutes and revenues for each call type, for each contract and the total product.

A4.133 With respect to costs, BT uses call origination charges excluding operator assistance including PPP, which are taken from BT’s CPL. Termination costs for DQ and other minor calls are also based on CPL price data.\(^{857}\) Termination rates for IDD calls are based on the prices paid by BT Wholesale to BT Global Services.\(^{858}\)

A4.134 The DQ and ‘other’ minor calls analysis distinguishes between calls which terminated on BT hosted minor calls numbers and those which terminated on numbers hosted by another CP. The former incur the BT termination charge whereas the latter incur a termination payment to another CP (known as a “POLO” – payment to other licensed operator). With respect to call termination for other minor calls, CRA explains:

"BT has had to make one assumption with respect to call termination costs: on “other” minor calls, if there is a BT termination charge for a particular call type but no charge for other operators, 100% of such calls are assumed to terminate on BT. Conversely, if there is a termination charge for other operators but not BT, 100% of such calls are assumed to terminate on other operators. Where termination charges exist for BT and other operators, call termination is assumed to split 50:50 between BT and other operators. This seems to be a reasonable assumption in the absence of alternative information.”\(^{859}\)

A4.135 Total interconnection costs for a particular call type are calculated by multiplying the pence per minute call origination and call termination charges for that call type by the volumes (minutes) for that call type. The margin over interconnections costs is calculated as the difference between revenues and interconnection costs.

A4.136 For each of the three broad categories of minor calls (DQ, IDD and other), the absolute margins on individual call types in the category are aggregated to give an overall absolute margin over interconnection costs for each category.

High level review of BT’s modelling

A4.137 As explained in paragraphs 6.297 to 6.298, we have carried out a high-level review of BT’s modelling. This identified a number of issues which are set out in the following paragraphs.

**Operator assistance**

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\(^{857}\) We note that BT’s modelling reflects a correction to the calculation of the POLOs for DQ calls which it provided to Ofcom in response to our 4th section 26 Notice. BT explained that the POLOs provided to Ofcom in response to our 4th section 26 Notice were incorrect, leading to an overstatement of BT’s margins on DQ calls in the period July 2008 to April 2009. See letter from [\(\times\)] (BT) to Ofcom dated 10 June 2011.

\(^{858}\) [\(\times\) Description of the billing arrangement between BT Global Services and BT Wholesale].

\(^{859}\) Paragraph 119 of CRA’s Report.
A4.138 BT’s modelling uses call origination excluding operator assistance. For the reasons given in paragraphs 6.324 to 6.329, we consider that it is appropriate to use call origination including operator assistance.

A4.139 Including operator assistance increases the interconnection costs and therefore reduces the margins. Over the period July 2008 to April 2009, including operator assistance reduces the overall margin on IDD, DQ and other minor calls by £[\$]. Over the period July 2008 to December 2010, including operator assistance reduces the overall margin on IDD, DQ and other minor calls by £[\$].

**Billing errors**

A4.140 We identified a number of apparent inconsistencies between the volume and revenue data in BT’s models, and BT’s explanation of the contractual treatment of different call types. Through asking BT to explain a number of these inconsistencies, we identified two material billing errors:

- Prices for a number of [\$] call types for [\$ Contract 2][\$]. BT explained that this was the result of billing errors, [\$]. BT later confirmed that [\$] was not reflected in the modelling provided as part of its Response.

- Prices for [\$] call types for the [\$] contract were also erroneously amended during the period [\$]. BT explained that [\$] was not reflected in the modelling provided as part of its Response.

A4.141 We have included these revenue adjustments in our analysis (see paragraph A4.40 above).

**Excluded call types**

A4.142 Consistent with the approach we adopted in the Statement of Objections, the modelling provided as part of BT’s Response excludes revenues from “Type A minor calls” (e.g. Timeline and operator services). In the Statement of Objections, we explained that reverse charge calls, calls to BT Surftime (g5), Timeline and Operator Services are not routed over CPS. Rather they are provided by (and charged for) by the access line provider. As such, these calls types are not part of the bundle that BT competes with CPSOs to provide (and as such are also excluded from our definition of the focal product). It is therefore inappropriate to

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860 BT explained that [\$]. See letter from BT to Ofcom dated 14 October 2011.

861 BT’s response to Question 19 of the 10th section 26 Notice.

862 BT’s response to Question 6 of the 11th section 26 Notice.

863 BT’s response to Question 8 of the 11th section 26 Notice.

864 BT provided the [\$] amounts in its response to Questions 6 and 8 of the 11th section 26 Notice.

865 See CPS Technical FAQ’s – BT Wholesale:
https://www.btwholesale.com/pages/downloads/service_and_support/Network_Resources/cps_documentation/cps_faqs.doc
incorporate these into our minor calls margin estimates so we have excluded them from our analysis.\footnote{866}

A4.143 Although CRA suggests that BT has modelled the margins on “all” minor call types, BT has in fact excluded some relevant call types from the analysis. Specifically, BT has excluded from its analysis any call types where there is neither a BT nor an OLO termination charge present in the modelling.

A4.144 It is not clear why termination charges for these call types are not present in BT’s modelling. However, these call types represent a very small proportion of the total revenues for each category of minor calls, and therefore cannot have a significant impact on the overall profitability of the Wholesale Calls product, or individual contracts. Given this, we consider that it is not necessary to include these call types in this case. We also note that BT’s detailed minor calls modelling is significantly more comprehensive in its inclusion of minor call types than the modelling BT originally provided to Ofcom for our analysis in the Statement of Objections.

\textbf{Charging structure}

A4.145 We explained in the Statement of Objections that for DQ calls and ‘other’ minor calls, the applicable termination charge structure differs between call types.\footnote{867} There are four main calling charge structures: pence per minute charges only; pence per call charges only; pence per call charges and pence per minute charges applicable from the first minute; and pence per call charges and pence per minute charges applicable from the second minute.

A4.146 We identified that BT’s modelling of margins on DQ and other minor call types assumes that all pence per minute charges apply from the first minute of a call. BT explained:

\begin{quote}
\textit{“It should be noted that this is a simplifying assumption as some call types have a PPM termination rate that is paid only after 60 seconds. This simplifying assumption, adopted by BT in its modelling, is a conservative assumption (i.e. it goes against BT’s interests). In actual fact PPM charges are not always due on the first minute of a call – some are paid only after 60 seconds, and some are clawed back if a call lasts more than 60 seconds.”}\footnote{868}
\end{quote}

A4.147 Our analysis indicates that BT’s assumption does not have a material impact on the overall profitability of the Wholesale Calls product, or individual contracts.

A4.148 In addition to not properly taking account of the different charging structures, BT has omitted relevant termination charges from its calculation of the margins earned on particular call types. For example, for some DQ and other minor calls which are terminated on BT hosted numbers, BT has omitted pence per minute charges that become payable by BT to the originating operator for the duration of the call which exceeds one minute. However, our analysis indicates that these missing termination charges do not have a material impact on the overall profitability of the Wholesale Calls product, or individual contracts.
charges do not have a material impact on the overall profitability of the Wholesale Calls product, or individual contracts.

Cost estimate

A4.149 In light of the above, we have adopted BT’s detailed minor calls modelling in our historical analysis, but with an adjustment to use call origination including operator assistance. We have also taken account of the [X] billing errors using [X] (see paragraph A4.40 above).

A4.150 We have not attempted to correct for the other errors as we do not believe that they have a material impact on the margins earned on minor call types.

A4.151 Table A4.24 summarises the margins on minor calls for the total Wholesale Calls product. This shows the contribution of minor call types to the overall total Wholesale Calls product margin.

Table A4.24: Absolute margins on minor call types for the Wholesale Calls total product, £ millions – BT modelling with Ofcom adjustments

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>International (IDD)</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>Directory Enquiries (DQ)</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>Other minor calls</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>Total</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
<td>[X]</td>
</tr>
</tbody>
</table>

Sources: Files 9 to 14 accompanying BT’s Response.

Downstream network costs

A4.152 Upstream interconnection charges cover two parts of the transit of a wholesale end-to-end call:

- the origination of the call to the BT DLE; and
- the termination of the call from the point of handover with the terminating operator.

A4.153 The costs of transiting the call over BT’s core network cover the remainder of the costs directly associated with call transit.869

A4.154 The nature of these costs will vary depending on the type of call, reflecting the distance of transit required. However, the elements of ‘network costs’ for a BT line to BT line call870 are shown in Figure A4.25 below.

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869 Note that we discuss two key areas in which our treatment of network costs deviates from that adopted by BT in its governance modelling for Wholesale Calls in Section 6.

870 In Figure A4.25 the calling party is connected to a DLE which is itself connected to a different tandem switch than the DLE of the called party, so inter-tandem conveyance is required to connect the call in this case.
A4.155 For a call of the type demonstrated in Figure A4.25, the network costs will include the following elements (as a minimum):

- **Local tandem conveyance** ("LTC") – transit from the DLE to the tandem switches, and vice versa; and
- **Inter-tandem conveyance** ("ITC") – transit between the tandem switches.

A4.156 All call transit for CPS SAD calls is handled by BT upstream and, therefore, there are no downstream network costs for these calls.

A4.157 For calls that terminate on a non-BT line the last leg of network costs shown in Figure A4.25 (i.e. the LTC) will be different. The final leg of network costs in all cases involves transit from the BT tandem switch to the terminating operator’s point of presence. We assume that for international calls the division between network costs and call termination is at the digital international switching centre ("DISC").

**Source of network cost estimates**

A4.158 For our analysis in the Statement of Objections, we asked BT to provide us with data (split by each call type) on the proportion of call minutes split by number of switching stages (i.e. single or double tandem) and estimates of its network costs for single and tandem switch calls. We asked for the cost information for financial years 2006/07, 2007/08 and 2008/09.871

A4.159 BT informed us that the best source of network cost data for Wholesale Calls was its network cost model ("the network cost model").872 The 2005/06 version of this model was specifically developed by BT as an input into its Wholesale Calls

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871 Question 35 in the 8th section 26 Notice sent to BT on 1 July 2009.

872 BT response to Question 35 in the 8th section 26 Notice, received 7 August 2009.
governance modelling. The model estimates the incremental cost of call conveyance using inputs from BT’s regulatory accounts and ASPIRE accounting system. Reflecting the fact that the majority of our modelling period for the Statement of Objections fell within the year 2008/09, we asked BT to provide a more recent version of the model. BT provided a 2008/09 version of the network cost model which used updated 2008/09 financial data (including volumes) to calculate the costs for all services.

In its Response, BT provided a revised network cost model for 2008/09, as well as a new network cost model for 2009/10. The revisions BT made to the modelling originally provided to Ofcom (and reflected in the new network cost model for 2009/10) are as follows:

- BT has included network costs allocated to call types that were not included in the network cost models originally provided to Ofcom. These are Freephone, DQ and “value call” (i.e. premium rate services [>).

- BT has updated elements of its network costs calculations. In the 2008/09 network cost model originally provided to Ofcom, BT continued to use the same published 2005 LRIC floors as those used in the 2005/06 network cost model for the following components: Inter Tandem Conveyance (ITC) and Inter Tandem Transit (ITT). BT no longer believes it is reasonable to use LRIC floors that are four to five years out of date. These components consume Local Tandem Conveyance, which have declined over time. BT has therefore assumed that the percentage movement in unit LTC costs between 2005/06 and 2008/09 applies to the deregulated components.

On the basis that the revisions made by BT appear to be reasonable for our purposes, we have used these network costs models to estimate the network costs used in our analysis. We note that our use of these models results in higher network costs compared to the network costs used in our analysis for the Statement of Objections.

BT’s network cost models produce the total costs and associated minutes of call conveyance over BT’s network for individual call types. As in the Statement of Objections, we have used these estimates for BT Group to calculate the average pence per minute network cost by call type. We assume that these pence per

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873 BT response to Question 26 in 1st section 26 Notice “WC_Nwk_Costs_Model.xls”, received 9 September 2008.

874 BT has used data on the “LRIC floor” costs for LTC, ITC and LTT stick services from the 2005/06 and 2008/09 BT regulatory financial statements. The cost category “SO/AG codes” are measured at FAC reflecting data availability constraints.


876 This is with the exception of the inter-tandem transit and conveyance which use 2005/2006 financial data.

877 See Files 15 and 16 accompanying BT’s Response.

878 BT has made a similar assumption in its 2009/10 network cost model.
minute charges apply equally to each of the BT business divisions (including Wholesale Calls) that incur them.

Adjustments to BT’s network cost models

A4.163 Consistent with our approach in the Statement of Objections, we have made the following adjustments to BT’s network cost models:

- BT’s network cost modelling includes the costs of call origination and call termination. As we have included upstream interconnection charges for BT call origination and BT call termination, it would be inappropriate to also include the costs for these services in the downstream network costs. We therefore adjusted BT’s network cost models to exclude these costs.

- In addition to these call origination and termination costs, the models also included a cost category called ‘SO/AG codes’. We understand from BT that this cost category includes network overheads such as computer systems. In discussions with BT in July and August 2010 it explained to us that the upstream BT call origination and call termination charges include an allocation to allow for the recovery of a proportion of these SO/AG code costs. Given this upstream cost allocation, BT considers it to be inappropriate to include the full SO/AG code costs downstream. We have therefore excluded a proportion of the full SO/AG code costs from the downstream network costs. Specifically, we have estimated the proportion of SO/AG code costs relating to the core network for each individual call type. The proportion we have used is the core network services’ share of total network services incremental costs (including call origination and termination).\(^{879}\)

A4.164 There are, however, two aspects of our approach in the Statement of Objections that have changed:

- The network cost models we used for our analysis in the Statement of Objections did not calculate the core network costs of Freefone, DQ or other minor calls. Therefore, we used the national non-geographic call type as a proxy for these call types.\(^{880}\) As the revised network cost modelling now include network costs allocated to these call types, it is no longer necessary to use a proxy.

- In the Statement of Objections, we excluded a cost item called “IDD specific conveyance” from the total core network costs of IDD calls. This was because we believed that IDD specific call conveyance was already captured in the termination rates paid to Global Services.\(^{881}\) However, in its report, CRA

\(^{879}\) The proportion is \((\text{LTC}+\text{ITC}+\text{LTT Stick})/(\text{LTC}+\text{ITC}+\text{LTT Stick}+\text{CO}+\text{CT})\) where LTC is total Local Tandem Conveyance incremental cost, ITC is total Inter-tandem Conveyance incremental cost, LTT Stick is total local tandem transmission stick incremental cost, CO is total call origination incremental cost, CT is total call termination incremental cost (including “IDD-specific conveyance” for IDD calls).

\(^{880}\) The choice of proxy reflected the fact that, like national non-geographic calls, Freefone, DQ and the majority of other minor calls are handed over to the terminating provider at the closest point of handover (as opposed to geographic calls, for example, that are handed over at the farthest possible point in the call). Therefore, we expected that, like national non-geographic calls, these call types will all incur relatively low core network costs.

\(^{881}\) We explained in the Statement of Objections that “IDD specific conveyance” uses the network elements “ISC to Frontier” and “Inter-tandem transmission International ISDN”. Because the
explains that this is not the case.\footnote{882} Therefore, we no longer exclude this cost item.

**Estimating network costs over the period March 2008 to December 2010**

A4.165 The models provided by BT as part of its response cover the financial years 2008/09 and 2009/10. In order to calculate the network costs over the period March 2008 to December 2010, we still need to calculate the network costs in March 2008 (which is in the financial year 2007/08) and over the period April 2010 to December 2010 (which is in the financial year 2010/11).

A4.166 To derive network costs for the period April 2010 to December 2010, we have applied the annual growth rate in pence per minute core network costs between 2009/10 and 2010/11 to the 2009/10 network costs. CRA adopted the same approach in its historical analysis.

A4.167 With respect to deriving network costs in March 2008, in the Statement of Objections, we calculated these by assuming constant annual growth rate in the pence per minute core network costs by call type between 2005/06 and 2008/09 (i.e. the two financial years for which we had network cost models). However, BT has not provided a revised 2005/06 network costs model as part of its response.\footnote{883} Rather than ask BT to produce further models, we have assumed that the growth rate between 2008/09 and 2009/10 also applies prior to 2008/09. The impact of this simplified approach should be limited as this only affects one month in our modelling period, and a month in which we found no evidence of BT pricing below appropriately measured incremental costs in the Statement of Objections. In addition, network costs are only a small proportion of the overall cost stack.

A4.168 The resulting downstream network cost estimates are summarised on a pence per minute basis in Table A4.26.

**Table A4.26: Network cost estimates in pence per minute terms**

\[
\text{Table A4.26: Network cost estimates in pence per minute terms}
\]

\footnotesize{Sources: Ofcom analysis based on Files 8, 15 and 16 accompanying BT's Response.}

A4.169 In order to generate network cost estimates for each of the time of day periods considered in the modelling, we have applied the ToD gradient to these 24 hour cost estimates.\footnote{884}

A4.170 As noted in Section 6, we treat network costs as incremental to the individual minute. Therefore, we multiply the pence per minute network costs split by call type and ToD by the relevant call minutes (as used to calculate the upstream input

\footnotetext[882]{See paragraph 80.1.a. of CRA's Report, which forms Annex 1 of BT's Response.}

\footnotetext[883]{CRA analysed margins over the period July 2008 to December 2010, and so did not require network cost estimates prior to the financial year 2008/09.}

costs) to calculate a total network cost figure for each individual contract, and separately for the Wholesale Calls product as a whole.

A4.171 As discussed in paragraphs A4.160 and A4.161 all call transit costs for CPS SAD calls are included in the CPS SAD charges and, therefore, there are no downstream network costs for these call minutes. The network costs for local geographic calls are based on local geographic call minutes excluding CPS SAD minutes. The CPS SAD call minutes are calculated using the call routing data in Table A4.9.

A4.172 The total network costs incurred in the provision of the Wholesale Calls product are summarised in Table A4.27 below.

Table A4.27: Network costs incurred in the provision of Wholesale Calls, £ millions

Source: Ofcom analysis based Files 8, 15 and 16 accompanying BT’s Response.

Wholesale Calls non-network costs

A4.173 The non-network cost part of the cost stack is the broadest of the cost stack elements. It represents all the costs associated with the provision of Wholesale Calls that are not captured in either upstream interconnection costs or the downstream network costs. Therefore, in broad terms, this includes:

- all Wholesale Calls-specific staff costs;
- all Wholesale Calls-specific platform and systems costs;
- Wholesale Calls-specific marketing and selling costs; and
- contract inducements and incentives.

A4.174 As explained in Section 6 for the purposes of this investigation, we have adopted a narrow view of contract level incremental costs that only incorporates those costs that BT claims are directly attributable to the contract. Those additional costs that are common or shared by groups of Wholesale Calls contracts are only included at the total product level.

A4.175 As part of the 8th section 26 Notice, we asked BT to provide information on “all costs incurred by BT over the period in the provision of Wholesale Calls other than the interconnection costs and core network costs” for the period January 2007 to April 2009. We asked that these non-network costs be split into staff costs, systems/development costs and other costs. As we discuss in more detail below, BT’s response to this request provided data split into staff and systems development costs only. As part of its Response to the Statement of Objections, BT provided data on the same basis for the period May 2009 to December 2010.

A4.176 We explain these data in the sub-sections below.

885 We note that costs that are common between Wholesale Calls and other parts of BT Group are excluded – see paragraph 6.25.

886 BT response dated to Question 44 of the 8th section 26 Notice, received 7 August 2009.

887 See File 8 accompanying BT’s Response.
Staff costs

A4.177 BT provided us with the staff costs for Wholesale Calls split between sales, customer service, finance, legal and regulatory, billing and product team. We present these data in Figure A4.28 below.

**Figure A4.28: Wholesale Calls total product staff costs**

Sources: Question 44 of the 8th section 26 request response received 21 August 2009; File 8 accompanying BT’s Response.

A4.178 BT’s estimates were generated on the basis of estimating the levels of full time equivalent (“FTE”) staff for each function and applying the relevant cost per FTE to this. To the extent that cost information was not recorded in BT’s systems, BT informed us that it contacted personnel that had been working on Wholesale Calls within the period. Pay data for staff that left BT prior to 30 April 2009 is not recorded in BT systems and are generally not reflected in the staff costs.

A4.179 BT explained that some customer service costs are incremental to individual contracts ([×]) whereas “all the finance, sales, products, legal and regulatory staff costs would have been incurred regardless of whether the individual contracts were signed and are therefore not allocated to specific contracts”. ³⁸⁸⁸

Sales and billing staff costs

A4.180 BT explained that as billing and sales staff are a shared resource (i.e. they do not just work on the sales and billing of Wholesale Calls), the total FTE figures could not be used as the staff costs for Wholesale Calls.³⁸⁹⁰ BT further explained that as it did not record the time sales and billing staff spent working on each product it instead pro-rated the total monthly billing and staff costs on the basis of Wholesale Calls revenue as a percentage of BT Wholesale external revenue.³⁸⁹⁰

A4.181 The billing and sales team staff costs included [×].

A4.182 The billing and sales team staff costs are summarised in Table A4.29 and Table A4.30 respectively.

**Table A4.29: Billing team staff costs applicable to Wholesale Calls total product**

Sources: Question 44 of the 8th section 26 Notice response received 21 August 2009; File 8 accompanying BT’s Response.

³⁸⁸⁸ Letter from BT accompanying response to Question 45 of the 8th section 26 Notice, received 7 August 2009.

³⁸⁹⁰ The BT financial system is called “Hyperion”. BT Wholesale Calls revenue and total BTW external and internal (BT Retail) revenue for the period from January 2007 to April 2009 were retrieved from Hyperion by the Reporting and Planning Analysis Team (RPA), with the exception of revenue received from [×]. BT informed us that Hyperion recorded the aggregated revenue from all the services [×] bought from BT without identifying the revenues from Wholesale Calls. BT instead used BBFA as a source for providing this revenue information for the [×] contract. The total revenue for Wholesale Calls were the sum of revenue information for all Wholesale Calls customers except [×] (from Hyperion) and the [×] revenue information (from BBFA).
Table A4.30: Sales team staff costs applicable to Wholesale Calls total product

Sources: Question 44 of the 8th section 26 Notice response received 21 August 2009; File 8 accompanying BT’s Response.

Finance staff costs

A4.183 BT identified finance staff members who had worked on Wholesale Calls and pro-rated the total staff costs for them based on the estimated proportion of time each employee spent working on Wholesale Calls. The total Finance staff costs are summarised in Table A4.31 below.

Table A4.31: Finance staff costs applicable to Wholesale Calls total product

Note: Zero values in the table are non-zero but appear as zero due to rounding.
Sources: Question 44 of the 8th section 26 Notice response received 21 August 2009; File 8 accompanying BT’s Response.

Product team staff costs

A4.184 In order to calculate the product team staff costs, BT used cost data from its Hyperion billing system to calculate the average monthly product team staff costs over the period January 2007 to April 2009.

A4.185 The product team supplied BT with an estimate of the number of FTEs employed within the Wholesale Calls product team over the period. The total product team staff costs were calculated by multiplying the average people costs by the monthly FTE number. The total Product team costs are summarised in Table A4.32 below.

Table A4.32: Product team costs applicable to Wholesale Calls total product

Note: [X].
Sources: Question 44 of the 8th section 26 Notice response received 21 August 2009; File 8 accompanying BT’s Response.

Legal and regulatory staff costs

A4.186 BT identified legal and regulatory staff who had worked on Wholesale Calls over the period and pro-rated the total staff costs for them based on the estimated proportion of time each employee spent working on Wholesale Calls. The total legal and regulatory costs incurred are summarised in Table A4.33 below.

Table A4.33: Legal and regulatory staff costs applicable to Wholesale Calls total product

Note: [X].
Sources: Question 44 of the 8th section 26 Notice response received 21 August 2009; File 8 accompanying BT’s Response.

Customer service staff costs

A4.187 The Service Management Centre team provides customer service to BT Wholesale customers, including Wholesale Calls customers.

891 Response to Question 44 of the 8th section 26 response received 21 August 2009.
A4.188 BT split the customer service FTEs into:

- Customer service FTEs working on [<>] contracts;
- FTEs for the core Wholesale Calls team;
- Any “other Wholesale Calls resource”; and
- FTEs working on implementation.

A4.189 BT explained that some staff costs were incurred as a result of contractual obligations. [<>]. As BT kept limited records on contract-incremental staff costs, it therefore had to make a number of simplifying assumptions in order to provide us with these data.

A4.190 BT explained that the [<>] staff costs included the costs of agency staff [<>]. BT used the purchase order that authorised the number of people to be hired, at what rates and for how long to estimate these customer service staff costs. BT further assumed that the cost was split equally between the [<>] contracts [<>].

A4.191 Table A4.34 below summarises the customer service staff costs incurred to support individual contracts and the Wholesale Calls product as a whole.

**Table A4.34: Customer service staff costs applicable to Wholesale Calls contracts and total product**

[<>]

*Note: [<>].
Sources: Question 44 of the 8th section 26 Notice response received 21 August 2009; File 8 accompanying BT’s Response.*

A4.192 Figure A4.35 below illustrates the split of customer service staff costs between [<>] and the rest of Wholesale Calls.

**Figure A4.35: Split of Wholesale Calls customer service costs between individual contracts**

[<>]

*Sources: Question 44 of the 8th section 26 Notice response received 21 August 2009; File 8 accompanying BT’s Response.*

**Systems/development costs**

A4.193 BT provided us with the costs for development of systems and services designed to support Wholesale Calls features, incurred over the period April 2007 to April 2009. BT provided these costs using information on internal transfer charges paid by Wholesale Calls to BT Design and BT Operate. [893]

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892 [<>].

893 BT response to Question 44 of the 8th section 26 Notice, received 21 August 2009. Both the BT Design and BT Operate charges included a margin and an allocation of the overheads of the two divisions. In its letter dated 26 July 2010 BT indicated to us that it felt this margin and overhead uplift, which it estimates to be approximately [<>]% of the internal transfer charges, should be excluded from the cost stack. Its rationale for this position appears to be that the appropriate cost standard is LRIC and therefore the overheads and margins should be excluded. We disagree with BT and for the purposes of our analysis have included the uplift costs within our margin estimates. In our view, while the full charges inclusive of uplift costs may not constitute an incremental cost of the activities to BT.
A4.194 BT explained that it was unable to locate records of development costs incurred for Wholesale Calls between January and March 2007, and therefore assumed that no development spend was incurred in this period. Between April 2008 and March 2009, BT recorded development costs on a quarterly basis. So for the purposes of responding to the request in our section 26 Notice for monthly development costs, BT spread the cost equally over the three months in each quarter.

A4.195 As part of its Response, BT provided data on the same basis for the period May 2009 to December 2010.894

A4.196 BT noted that some of the product features to which these costs relate were requested by [cy].895 However as the features were available to all Wholesale Calls customers, BT considered all development costs as incremental to the total product rather than a subset of Wholesale Calls customers. In our modelling we have used BT’s assessment of whether the non-network costs are incremental to the product or individual contracts (see paragraph 6.198). However, we consider, on balance, that these costs should be considered incremental to the [cy] contracts and/or a combinatorial test of both.

A4.197 We explain in Section 6 that we have amortised development costs to minimise any distortion they may generate in our period-by-period analysis. Specifically, we amortise the costs by spreading them equally over [cy], [cy].

A4.198 In the Statement of Objections, our analysis of margins over the period March 2008 to April 2009 included only those systems/development costs identified by BT as being actually incurred over the period April 2007 to April 2009. Where we present results for the period March 2008 to April 2009, we continue to adopt this approach. We recognise that data on development costs incurred over the period May 2009 to December 2010 is now available. Whilst there are arguments to include these costs (appropriately amortised) in our analysis over the period March 2008 to April 2009, we note that doing so increases the total development costs over the period March 2008 to April 2009 by only £[cy] per month.

A4.199 In addition, we have not made any provision for future costs that may be incurred to service existing contracts.

A4.200 In our analysis of margins over the extended period from March 2008 to December 2010, we have included those systems/development costs identified by BT as being actually incurred over the period April 2007 to December 2010.

A4.201 Total development costs over the period April 2007 to April 2009 are £[cy]. Over the period April 2007 to December 2010, total development costs are £[cy]. The development costs we have included in the Wholesale Calls total product cost stack are summarised in Table A4.36 below.

894 See File 8 accompanying BT’s Response.

895 BT response to Question 45 of the 8th section 26 Notice, received 21 August 2009.
Table A4.36: Systems/development costs included in Wholesale Calls total product cost stack

[\texttimes]

Sources: Ofcom analysis based on Question 44 of the 8th section 26 Notice response received 21 August 2009; File 8 accompanying BT's Response.
Note: \texttimes.

\texttimes rebates

A4.202 As noted in paragraphs A4.42 to A4.46 above, we have included credits relating to \texttimes as additional non-network costs rather than reducing total revenues.

A4.203 The rebates are incremental to the \texttimes Wholesale Calls total product. The rebates we have included in the \texttimes total product model are summarised in Table A4.37 below.

Table A4.37: \texttimes Wholesale Calls total product cost stacks

[\texttimes]

Sources: Ofcom analysis based on response to Clarification 6 relating to Question 44 of the 8th section 26 Notice response received 20 January 2010; File 8 accompanying BT’s Response.

Total non-network costs for the Wholesale Calls total product

A4.204 In Figure A4.38 we show the total non-network costs included in our margin estimates for the total Wholesale Calls product between March 2008 and December 2010. The totals are split between the (amortised) development costs, staff costs and revenue adjustments.

Figure A4.38: Total non-network costs for the Wholesale Calls product, March 2008 to December 2010

[\texttimes]

Sources: Ofcom analysis based on Question 44 of the 8th section 26 Notice response received 21 August 2009; File 8 accompanying BT's Response.

A4.205 In Table A4.39 we provide a complete breakdown of non-network costs for the total product, split between each of the types of non-network cost.

Table A4.39: Non-network costs applicable to Wholesale Calls total product

[\texttimes]

Note: totals may not equal the sum of the above costs due to rounding.
Sources: Ofcom analysis based on Question 44 of the 8th section 26 Notice response received 21 August 2009; File 8 accompanying BT's Response.

CPS charges

A4.206 There are two\textsuperscript{896} main categories of charges payable to BT upstream by CPSOs related to the operation of the CPS service:

\textsuperscript{896} We note that there is also a CPS set-up facility charge which is a one off charge (£10,000 to £12,000) paid to BT in order to set up as a CPSO. We have excluded it from our modelling as we consider it to be immaterial to the EEO cost stack given the relatively small size and given the fact that it is a one off charge which would be recovered over a long period.
• CPS annual charge – annual charge paid to BT to operate as a CPSO; and
• CPS transactions charges – charges paid to BT to either set up or to alter CPS on retail customers’ lines.

A4.207 These CPS charges are incurred by CPSOs but are not formally paid by BT for Wholesale Calls (although we note that BT does make an allowance for them in its governance modelling). Therefore, strictly speaking, they are not relevant to the EEO cost base. However, as we have explained in Section 6, both Ofcom and the Commission in previous cases have adopted alternative formulations of the EEO test (i.e. the adjusted EEO) that take into account the incumbency cost advantages of the vertically integrated operator. Both of these costs fall into this category; i.e. Wholesale Calls is only exempt from incurring these costs by virtue of BT’s incumbency position.

A4.208 We have, therefore, included both of the charges in our adjusted EEO tests. The precise treatment of these costs is discussed in more detail below.

A4.209 The CPS annual charge is published on BT’s CPL and is paid by CPSOs on a monthly basis in advance. As the charge is a common cost across all contracts it only appears in the total product cost stack.

A4.210 BT levies charges on CPSOs for the following changes to retail customers’ lines:

• bulk migration of CLIs;
• setting-up CPS on a CLI;
• changing CPS option (e.g. from ‘CPS all calls’ to ‘CPS international calls only’);
• cancelling CPS;
• removing CPS; and
• renumbering CPS CLIs.

A4.211 All charges are payable on a per CLI basis, and are published on BT’s CPL. We asked BT to provide us with the total charges that the Wholesale Calls product unit of BT Wholesale would have been required to pay BT, if it was a CPSO, for each of the CPS transactions listed above over the period January 2007 to April 2009.

A4.212 BT noted in its response to our section 26 Notice that not all CPS transactions are available to Wholesale Calls customers and that in addition, BT did not record the volume of CLIs using certain transactions for Wholesale Calls.

A4.213 Specifically, BT noted that the Wholesale Calls product does not offer an equivalent of the ‘Change’ transaction as Wholesale Calls offers only an ‘All Calls’ option.

897 BT Wholesale Carrier Price List Section 7.01.3.
898 BT Wholesale Carrier Price List Section 7.01.6.
899 BT response to Question 38 of the 8th section 26 Notice, received 17 July 2009.
Hence, unlike with the customers of CPSOs a customer of Wholesale Calls could not ‘change’ its ‘All Calls’ option to a ‘National Calls’ option. BT does not record volumes for the ‘cancel’ or ‘renumber’ transactions in relation to Wholesale Calls as Wholesale Calls does not charge for these on a transaction basis.

A4.214 BT further noted that “Wholesale Calls does not operate the same rejection process as CPS so aligning WCs rejects v CPS rejection costs does not provide accurate information. WCs does not have the same incompatible products, and because WCs does not charge for this transaction, some CPs may use this for validation. The existence of the CPS transaction charge dissuades CPs from this behaviour to some extent.”

A4.215 The ‘bulk migration’ transaction is charged at the £1.58 per CLI. However if the volume of CLIs in the migration order exceeds 150,000 the bulk migration cost is capped at £237,000.

A4.216 The CPSO may migrate CLIs of several customers in a single migration transaction in which case the bulk migration charges incurred by the CPSO are still capped at £237,000. In cases where BT migrated a significant number of CLIs of several customers onto Wholesale Calls and the volume of CLIs being migrated exceeded 150,000 we have assumed the incremental CPS migration charges incurred to provide an individual contract are zero. Therefore, in these circumstances, we have included zero migration charges in all individual contract cost stacks, and £237,000 of bulk migration charges in the total product cost stack.

A4.217 The ‘set-up’ transaction charge depended on whether the set-up transaction was applied to a BT Retail or a WLR CLI. Up to February 2009, the fee for a CPS set up on a BT Retail line was £2.47, and for a WLR line was £1.69. From February 2009, the fee for a CPS set up was reduced for a BT Retail line to match that of a WLR line.

A4.218 As Wholesale Calls did not record whether the set-up transaction was applied to a BT Retail or WLR CLI, BT provided us with the total set-up transaction charges which would have been charged if all CLIs were WLR or all BT Retail, noting that the total set-up transaction charges would lie somewhere in between these two values. As part of its Response, BT provided data on the same basis for the period May 2009 to December 2010.

A4.219 We have estimated the proportion of all Wholesale Calls CLIs which are WLR using data collected from Openreach on the total volume of CLIs to downstream divisions of BT (i.e. BT CLIs), and the volume of CLIs supplied externally (i.e. WLR CLIs).

900 Letter from BT regarding response to Question 38 of the 8th section 26 Notice, received 17 July 2009.

901 Bulk or “J-type” migration refers to situations in which a large number of CLIs are migrated to a CPSO’s network in a single transaction.

902 BT Wholesale Carrier Price List Section 7.0.1, page 2, note 4.

903 See File 8 accompanying BT’s Response.

904 BT response to Questions 1a and 1b of the 1st section 135 Notice for the Wholesale Fixed Analogue Exchange Lines Review, received 22 July 2010.
CLIs). We assume that the proportion of the total (BT Retail and WLR) CLIs which are WLR does not differ between Wholesale Calls and the rest of BT Group.

A4.220 In 2008/2009 the proportion of BT CLIs which were WLR was \([\times]\)%\(^{905}\). We assume that this proportion applies for the whole modelling period\(^{905}\).

A4.221 The transaction charge for ‘remove’ does not vary with the type of line. The cost is £1.69 per CLI for both BT Retail and WLR CLIs.

A4.222 The total transaction charges for the Wholesale Calls product are shown in Figure A4.40.

**Figure A4.40: Total CPS transaction charges applicable to Wholesale Calls, March 2008 to December 2010**

\([\times]\)

Sources: Ofcom analysis based on Question 38 of the 8th section 26 Notice response received 17 July 2009; File 8 accompanying BT’s Response.

A4.223 The data above are the CPS transaction charges which were incurred by the Wholesale Calls product as a whole. As noted above, CPS transaction charges are incurred per CLI and are therefore incremental to individual contracts. In order to estimate the CPS transaction charges which would be incurred to supply an individual contract, we asked BT to provide us with monthly data on the volume of CLIs for each of the 21 contracts we are modelling\(^{906}\). BT was only able to provide data on the volume of WCLI CLIs, and only from August 2008 onwards, due to limitations in the data that it records, As part of its Response, BT provided data on the same basis for the period May 2009 to December 2010.

A4.224 Therefore, we have only been able to include contract specific estimates of CPS transaction charges from August 2008 onwards. While this is unlikely to affect the estimates for \([\times]\), as the \([\times]\) was agreed in \([\times]\) it is likely to lead to an understatement of the charges for this particular contract.

A4.225 We have used the CLI data for individual contracts to produce a proxy of the volume of CLIs to which the bulk migration, set-up and remove transaction charges would apply\(^{907}\).

A4.226 Our approach assumes that where the bulk migration charges were capped at the £237,000 limit, and more than one contract was responsible for the bulk migration transaction, then the migration charges are considered to be incremental to the product rather than the individual contract. In months in which the volume of CLIs migrated is greater than 150,000, the incremental CPS transaction charges incurred to bulk migrate CLIs of an additional customer are zero as the £237,000 limit would have been reached regardless of whether the additional customer’s CLIs were migrated on or not. In such cases £237,000 of CPS bulk migration charges are included in the total product cost stack and zero CPS bulk migration charges are included in the individual contract cost stacks.

\(^{905}\) In our base case modelling period March 2008 to April 2009, only two of the fourteen months of the modelling period fall outside of 2008/2009.

\(^{906}\) BT response to Question 21 in the 8th section 26 Notice, received 7 August 2009.

\(^{907}\) The \([\times]\) contract CLIs were all WCLA so BT was unable to provide CLI data for that customer.
A4.227 Our approach also assumes that changes in the net number of CLIs are equal to the gross change so that, if CLIs increase it is assumed that there are no removals and, conversely, and if CLIs decrease it is assumed that there are no additions. Again, this potentially results in our estimate understating true costs.

A4.228 [\text{[\times]}].

A4.229 The total CPS charges included in the Wholesale Calls total product costs stack are summarised in Table A4.41 below.

Table A4.41: Total CPS charges applicable to Wholesale Calls total product, £ millions

\[
\text{[\times]}
\]

Note: [\text{[\times]}].
Sources: Ofcom analysis based on Question 38 of the 8th section 26 Notice response received 17 July 2009; File 8 accompanying BT’s Response.

Calculating the margins earned on Wholesale Calls

A4.230 The margins earned by an EEO are equal to the revenues (including revenue adjustments for billing errors) minus the sum total of interconnection costs, core network costs and non-network costs (including inducement rebates). The margins earned by an adjusted EEO are equal to the EEO margin minus the CPS transaction charges.

A4.231 We have conducted the margin calculations separately for the 21 large contracts and the product as a whole.

A4.232 Table A4.42 below illustrates the margin calculations for the total Wholesale Calls product.

Table A4.42: Wholesale Calls total product margin calculation, £ millions

\[
\text{[\times]}
\]
Annex 5

Analysis of BT’s historical margins: margins earned on other key contracts

A5.1 In the course of our investigation we have examined the margins earned by BT on 21 of its most important Wholesale Calls contracts over the period March 2008 to April 2009. Of these contracts, all but one (i.e. the [] contract), are based on bespoke rates. Our margin estimates for these contracts (which include [] Contract 1 and Contract 2] for the purposes of comparison) are set out in Table A5.1 below. Note that the results reported are for the period July 2008 to April 2009, consistent with the period used to analyse [] Contract 1 and Contract 2], and the period over which we observe a negative margin on the Wholesale Calls product as a whole.

A5.2 As we have explained in paragraph 6.330, we have focused our discussion of BT’s historic margins on individual contracts on [] Contract 1 and Contract 2], reflecting [ ]. We therefore do not discuss in detail the results for each of the other 19 contracts individually modelled. Rather, in this sub-section we consider the key results from the 21 contracts as a group.

A5.3 Of those contracts considered, [] Contract 1] is the only one where revenues fail to cover interconnection costs in every month of the period July 2008 to April 2009. Five contracts recorded a negative margin over interconnection costs in one or more months over the period. These contracts were the two [], as well as []].

A5.4 BT’s revenues failed to cover the adjusted EEO costs on six other contracts – in addition to [] Contract 1 and Contract 2] – over the period July 2008 to April 2009. These were the contracts with [ ]. Between them, these six contracts accounted for a negative margin (over adjusted EEO costs) of £[] million during this period. Of this figure, the [] contract accounted for £[] million (or [ ] 70-80%], and the [] contract for £[] million (or [ ] 10-20]%].

Table A5.1: Individual contract margins, July 2008 to April 2009

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<th>Contract</th>
<th>Margin</th>
<th>Source</th>
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<td>[]</td>
<td></td>
<td>Ofcom analysis of BT data</td>
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A5.5 Our analysis shows that BT failed to cover adjusted EEO costs on a similar number of contracts to that identified in the Statement of Objections. However, the contracts which we identified as earning negative margins have changed:

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908 [ ].

909 For the avoidance of doubt this refers to the aggregate of the incremental negative margins made on these contracts individually; it is not the result of a combinatorial test.

910 [ ].

911 [ ].
In the Statement of Objections, we found that BT made a negative margin of \( \[ < \] \% \) on the \( \[ < \] \) contract (on an adjusted EEO basis). In our analysis, this contract is profitable.\(^{912}\)

In the Statement of Objections, we found that the \( \[ < \] \) contracts were positive, earning margins over adjusted EEO costs of \( \[ < \] \). We now find that BT made negative margins on these \( \[ < \] \) contracts of \( \[ < \] \) (on an adjusted EEO basis).

In Table 6.13 in the Statement of Objections, the rows relating to \( \[ < \] \) and \( \[ < \] \) were mis-labelled. Therefore, contrary to what we said in the Statement of Objections, the \( \[ < \] \) contract was profitable whereas BT earned a negative margin on the \( \[ < \] \) contract.

A5.6 We also note that the negative margins incurred on the \( \[ < \] \) contracts are smaller than those we identified in the Statement of Objections. In the Statement of Objections, we found that BT made negative margins of \( \[ < \] \) on these contracts (on an adjusted EEO basis). In our analysis, these negative margins are \( \[ < \] \) respectively.

A5.7 Two of the contracts identified in Table A5.1 relate to \( \[ < \] \). \( \[ < \] \) is a related business entity \( \[ < \] \), while \( \[ < \] \). The call minutes linked to the \( \[ < \] \) contracts are small. Indeed, volumes for both contracts are around \( \[ < 0-10\% \) of the volumes for \( \[ < \) Contract 1 and Contract 2 \) respectively.\(^{913}\)

A5.8 \( \[ < \] \).\(^{914}\)

A5.9 \( \[ < \] \).\(^{915}\)

A5.10 \( \[ < \] \). As we explain in Annex 3, \( \[ < \] \) of the (approximately) \( \[ < \] \) Wholesale Calls customers receive base rates. Although this group of customers has become of decreasing significance in terms of total Wholesale Calls revenues and minutes over recent years (due to the increasing number of very large bespoke contracts signed), they nevertheless represent a large number of BT’s contracts. While the call mix, and therefore exact margin earned, will vary across base rates customers, \( \[ < \] \) the margins earned by BT on base rate customers are likely to have been strongly positive over the period of investigation.

\(^{912}\) CRA identified a formula error affecting the calculation of the \( \[ < \] \) margins in Table 6.13 of the Statement of Objections. Correcting for this error results in a less negative margin over adjusted EEO costs over the period July 2008 to April 2009 (\( \[ < \] \)). CRA also found that the revenue data for \( \[ < \] \) that BT provided to Ofcom omitted data for 0845 and 0870 calls in April 2009. Including these data further improves the margin. Correcting both of these errors results in margins of \( \[ < ]\% \) and \( \[ < ]\% \) over adjusted EEO costs and interconnection costs respectively. See CRA Report, paragraph 142.

\(^{913}\) We note that given the relative size of the contracts, \( \[ < \] \) would have no impact on our overall finding of BT having earned a negative margin on the \( \[ < \] \) contract.

\(^{914}\) Response to clarification 7 on Question 21 of the 8th section 26 Notice, response received 23 October 2009.

\(^{915}\) [\( \[ < \] \)].
Annex 6

Analysis of BT’s historical margins: sensitivity on the treatment of network costs at the contract level

A6.1 As explained in paragraphs 6.267 to 6.271, BT argues that network costs are not incremental at either the product or individual contract level, and therefore should not be included within our analysis. We explain in paragraphs 6.271 to 6.279 why, for the purposes of this investigation, we treat network costs as incremental to both individual contracts and the total product. However, we recognise that the appropriate treatment of network costs at the contract level is less clear. Therefore, we present as a sensitivity test the margins on individual contracts when network costs are excluded.

A6.2 We carry out this sensitivity test over both our preferred time period (March 2008 to April 2009), and the extended time period (March 2008 to December 2010).

A6.3 Table A6.1 summarises the margins over adjusted EEO costs on [Contract 1 and Contract 2] reported above, and the amount of core network costs included in [Contract 1 and Contract 2] cost stacks. This shows that removing network costs at the contract level does not change the overall result on [Contract 1 and Contract 2] when looking at the period July 2008 to April 2009. Over the longer time period, removing network costs does result in a positive margin over adjusted EEO costs on [Contract 2], although [Contract 1] was still negative.

Table A6.1: Core network costs in the [Contract 1 and Contract 2] cost stacks

| Source: Ofcom analysis of BT data |

A6.4 Table A6.2 sets out the margins on the 21 contracts over the period July 2008 to April 2009, when network costs are included and excluded. It shows that when network costs are excluded, [Contract 1 and Contract 2] are the only contracts where revenues failed to cover adjusted EEO costs.

Table A6.2: Individual contracts: percentage margins over the period July 2008 to April 2009 – sensitivity on treatment of network costs at the contract level

| Source: Ofcom analysis of BT data |

A6.5 Table A6.3 sets out the margins on these contracts over the longer time period July 2008 to December 2009, when network costs are included and excluded. As noted in paragraph 6.358, when network costs are included and the longer time period is considered, BT’s revenues failed to cover the adjusted EEO costs on only one other contract in addition to [Contract 1 and Contract 2]; the [Contract] contract. Table A6.3 shows that excluding network costs results in a positive margin over adjusted EEO costs on the [Contract] contract over the longer time period.
Table A6.3: Individual contracts: percentage margins over the period July 2008 to December 2010 – sensitivity on treatment of network costs at the contract level

Source: Ofcom analysis of BT data
## Glossary of terms

<p>| <strong>21CN</strong>          | 21st Century Network. BT's NGN intended to replace most of BT's existing core platforms with a single multi-service network comprising of high capacity routers connected by an advanced optical network. Other CPs have already deployed, or are planning to deploy, their own NGNs, interconnecting via IP as the most efficient mechanism for connecting the two NGNs. BT had envisaged that a substantial volume of narrowband (PSTN) traffic would have migrated onto 21CN and carried over IP (e.g. as VoIP) by 2009. However deployment of the project in relation to voice services has not occurred (except for a series of customer trials) so that migration has not yet materialised. |
| <strong>Act</strong>           | Competition Act 1998. |
| <strong>Altnets</strong>       | Alternative network operators. |
| <strong>Article 82 EC</strong> | Article 82 of the EC Treaty, which provides that &quot;any abuse by one of more undertakings of a dominant position within the common market or in a substantial part of it shall be prohibited as incompatible with the common market in so far as it may affect trade between Member States&quot;. |
| <strong>Article 102 TFEU</strong> | Former Article 82 EC. The Treaty of Lisbon came into force on 1 December 2009 amending (but not replacing) the EC Treaty with the Treaty on the Functioning of the European Union. |
| <strong>BT</strong>            | BT Group plc and any subsidiary or holding company thereof including, for the sake of doubt, British Telecommunications plc and BT Wholesale. |
| <strong>BT Retail</strong>     | The main retail business of BT, which provides a range of retail services to residential, business and corporate customers. |
| <strong>BT Wholesale</strong>  | The division that runs BT's network services, sells interconnection products to CPs and whose activities include the marketing the Wholesale Calls product. |
| <strong>C&amp;W</strong>           | Cable &amp; Wireless Worldwide plc. |
| <strong>CAM</strong>           | Cost Allocation Model. BT's model for allocating costs. |
| <strong>CDR</strong>           | Call Data Record. |
| <strong>CFI</strong>           | European Court of First Instance. Renamed the General Court under the TFEU. |
| <strong>CIB</strong>           | Commercial Investments Board. An authorisation body which is part of BT Wholesale's commercial governance policy. |
| <strong>CLI</strong> | Calling Line Identity. The telephone number at the network level (not the presented number that is available to customers as a service). |
| <strong>CP</strong> | Communications Provider. A person who provides an electronic communications network or an electronic communications service. |
| <strong>CPL</strong> | Carrier Price List. <strong>BT Wholesale</strong>'s list of charges for regulated services. |
| <strong>CPSO</strong> | Carrier Pre-Selection Operator(s). The operator (other than the network operator providing the direct network connection to the customer) selected by the customer to carry their calls of a chosen category. |
| <strong>CPS SAD</strong> | <strong>CPS</strong> Same and Adjacent <strong>DLE</strong>. The service introduced by <strong>Ofcom</strong> in 2004. It addressed the so-called ‘local call disadvantage’ that <strong>CPSOs</strong> faced due to their network architectures, which resulted in higher local tandem transit costs when compared with <strong>BT's</strong> costs. <strong>CPS SAD</strong> is available to <strong>CPSOs</strong> at the <strong>DLEs</strong> they are connected to. It essentially involves <strong>BT</strong> transiting the calls as they would if they were not CPS-based calls. The charge levied by <strong>BT</strong> for the service is related to the costs that <strong>BT</strong> incurs in providing the service. See ‘Addressing the Local Call Disadvantage’, <a href="http://www.ofcom.org.uk/consult/condocs/cps_option/cps_statement/">http://www.ofcom.org.uk/consult/condocs/cps_option/cps_statement/</a>. |
| <strong>Carrier Pre-Selection (CPS)</strong> | The facility offered to customers with a <strong>BT</strong> line which allows them to opt for certain defined classes of call to be carried by an operator selected in advance (and having a contract with the customer), without having to dial a routing prefix or follow any other different procedure to invoke such routing. |
| <strong>Call Origination</strong> | Call origination provides the conveyance of calls from the point where the customer connects to the network. |
| <strong>Call Termination</strong> | Call termination is the final service needed to deliver a call to a called party on the <strong>PSTN</strong>. |
| <strong>Calling-line Identification</strong> | A telephone service by which the calling party's number is presented to the called party prior to the call being answered. |
| <strong>Chapter II Prohibition</strong> | The prohibition set out in section 18 of the Competition Act 1998, which provides that “any conduct on the part of one or more undertakings which amounts to the abuse of a dominant position in a market is prohibited if it may affect trade within the United Kingdom”. |
| <strong>Commission</strong> | European Commission |
| <strong>DLE</strong> | Digital Local Exchange. The telephone exchange to which customers are directly connected, often via an <strong>RCU</strong>. |
| <strong>ECJ</strong> | European Court of Justice. |
| <strong>FAC</strong> | Fully Allocated Cost. An accounting approach under which all the costs of the company are distributed between its various products |</p>
<table>
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<th>Term</th>
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<tbody>
<tr>
<td>General Court</td>
<td>A branch of the ECJ. Cases heard by the General Court may be subject to appeal to the ECJ.</td>
</tr>
<tr>
<td>Geographic numbers</td>
<td>Telephone numbers that relate to a particular geographic location, indicated by a geographic area code starting 01 or 02.</td>
</tr>
<tr>
<td>IA</td>
<td>Indirect Access. A regulated product for call origination provided by BT and purchased by CPs. It allows an end-customer to select an alternative CP to their access provider by dialling a short code to switch through the network on which his exchange line terminates. Such calls are usually billed by the IA operator. IA is a forerunner of CPS.</td>
</tr>
<tr>
<td>IEC</td>
<td>Interconnection Extension Circuits.</td>
</tr>
<tr>
<td>IP</td>
<td>Internet Protocol</td>
</tr>
<tr>
<td>ISI</td>
<td>In-span Interconnection Links.</td>
</tr>
<tr>
<td>Inter-tandem transit</td>
<td>An interconnection service on BT's network that transmits a call between two tandem switches over an inter-tandem transmission link.</td>
</tr>
<tr>
<td>LLU</td>
<td>Local Loop Unbundling. Wholesale service which permits an alternative provider to take over the copper pair used to deliver exchange line services, and use that copper pair to deliver their own services. The dominant provider's local loops are physically disconnected from its network and connected to another CP's network. This enables competing providers partly or wholly to lease a customer's access line and provide voice and/or data services directly to end users. There are two forms of LLU: MPF and SMPF.</td>
</tr>
<tr>
<td>LTC</td>
<td>Local Tandem Conveyance. LTC and transit includes the conveyance of traffic between the local exchanges that provide call origination and termination services and the tandem layer of the network.</td>
</tr>
<tr>
<td>Local Loop</td>
<td>Generic term applied to the traditional copper twisted pair access network providing connections between customers' telephones and the local telephone exchange.</td>
</tr>
<tr>
<td>MPF</td>
<td>Metallic Path Facility. Fully unbundled local loops (see also LLU). This allows a competing provider to wholly lease a customer’s access line and provide voice and broadband internet services directly to end users.</td>
</tr>
<tr>
<td>MTR</td>
<td>Mobile Termination Rate. The charge for terminating a call on a mobile operator’s network.</td>
</tr>
<tr>
<td>Minor call type</td>
<td>Refers to any call type other than: local geographic calls; national geographic calls; calls to mobile numbers (i.e. O2, Vodafone, etc.).</td>
</tr>
<tr>
<td><strong>Final Decision</strong></td>
<td></td>
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<tr>
<td>-------------------</td>
<td></td>
</tr>
<tr>
<td>Orange, T-Mobile and H3G); calls to 0870 numbers; and calls to 0845 numbers.</td>
<td></td>
</tr>
<tr>
<td><strong>NGN</strong></td>
<td>Next Generation Network. The current PSTN is based on technology developed and rolled out over the past 20 to 25 years. A number of CPs have undertaken investments in NGNs. NGNs are generally based on Internet Protocol (IP) packet technology. NGNs convey multiple services (broadband and services in addition to telephony) over the same all-IP transport platform. From the CP’s perspective, NGNs offer a number of potential benefits including cost savings due to the economies of scale and scope inherent in a single converged network, increased efficiency of network operations and the potential for innovative services.</td>
</tr>
<tr>
<td><strong>NTS</strong></td>
<td>Number Translation Services. NTS calls are calls to numbers identified in the National Telephone Numbering Plan as Special Services numbers (broadly, numbers that start with 08 or 09). NTS numbers are examples of non-geographic numbers in that the number dialled does not relate to a specific geographic location, but instead relates to a particular service. At a technical level, the NTS number dialled by a caller is 'translated' by the network to a geographic number to deliver the call to its destination.</td>
</tr>
<tr>
<td><strong>Non-geographic numbers</strong></td>
<td>Any telephone number that is not a geographic number, e.g. 0845, 0870. The originating and terminating party may be the same or different.</td>
</tr>
<tr>
<td><strong>OFT</strong></td>
<td>Office of Fair Trading.</td>
</tr>
<tr>
<td><strong>Ofcom</strong></td>
<td>Office of Communications.</td>
</tr>
<tr>
<td><strong>Openreach</strong></td>
<td>The division of BT that is responsible for BT’s local access telephone network and the installation and maintenance of services over that network. Openreach was launched in January 2006 after Ofcom accepted Undertakings from BT in relation to, among other things, the provision of equal access to BT’s local access network to other CPs.</td>
</tr>
<tr>
<td><strong>PPC</strong></td>
<td>Partial Private Circuits. A generic term used to describe a category of private circuits that terminate at a point of connection between two CPs’ networks. It is therefore the provision of transparent transmission capacity between a customer’s premises and a point of connection between the two CPs’ networks. It may also be termed a part leased line.</td>
</tr>
<tr>
<td><strong>PPP</strong></td>
<td>Product management, Policy and Planning. An administrative charge levied by BT to recover the administrative costs incurred by BT in providing interconnection with and use of its narrowband network. The charge covers BT’s internal costs in managing such relationships over and above the charges that it incurs for actually conveying and switching calls across its network. There is one PPP charge for each call, and this may be included in either the call origination or call termination charges. Any competing provider wishing to offer retail services to BT’s customers via CPS or IA or needing BT to terminate calls on its network is required to pay PPP.</td>
</tr>
<tr>
<td><strong>PPP charges are regulated.</strong></td>
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<tr>
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<tr>
<td><strong>PSTN</strong></td>
<td>Public Switched Telephone Network. The telecommunications networks of the major operators, on which calls can be made to all customers of the PSTN.</td>
</tr>
<tr>
<td><strong>Premium rate numbers</strong></td>
<td>Numbers in the 09 range, which are used mainly to access competitions, TV voting lines, scratchcards, adult entertainment, chatlines and some post-sales services such as technical support.</td>
</tr>
<tr>
<td><strong>Programme Paper</strong></td>
<td>A BT document setting out strategy direction for products and the expected benefits to BT Wholesale (for example, revenue or EBIT) which is used for seeking authorisation by the CIB.</td>
</tr>
<tr>
<td><strong>QPB</strong></td>
<td>Quarterly Plan and Budget. BT terminology for revenue forecast.</td>
</tr>
<tr>
<td><strong>RCU</strong></td>
<td>Remote Concentrator Unit. The lowest level in the telephone switch hierarchy, on which customers PSTN lines are terminated. The RCU has three main functions: (i) to digitise (turn voice and/or data from analogue into digital form, (ii) to concentrate (i.e. connect off-hook lines through to the local exchange, and (iii) to multiplex (interleave many calls together on a single wire or fibre).</td>
</tr>
<tr>
<td><strong>Relevant period</strong></td>
<td>The period during which Ofcom has identified that BT earned negative margins i.e. July 2008 to April 2009.</td>
</tr>
<tr>
<td><strong>Resellers</strong></td>
<td>Firms that do not operate a network but instead purchase services on a wholesale basis from a CPSO or BT Wholesale.</td>
</tr>
<tr>
<td><strong>SLA/SLG</strong></td>
<td>Service Level Agreement / Service Level Guarantee.</td>
</tr>
<tr>
<td><strong>SME</strong></td>
<td>Small and Medium Enterprise. A business which employs between 1 and 250 employees.</td>
</tr>
<tr>
<td><strong>SMP</strong></td>
<td>Significant Market Power. Defined in Article 14(2) of the Framework Directive, which states that: “an undertaking shall be deemed to have significant market power if, either individually or jointly with others, it enjoys a position equivalent to dominance, that is to say a position of economic strength affording it the power to behave to an appreciable extent independently of competitors, customers and ultimately consumers”.</td>
</tr>
<tr>
<td><strong>SMPF</strong></td>
<td>Shared Metal Path Facilities. Partial LLU or shared access to the copper wires from the customer premises to a BT exchange which allows a competing provider to fully lease the customer’s access line and provide broadband-internet only services directly to the customer while BT continues to provide the customer with voice services (see also LLU).</td>
</tr>
<tr>
<td><strong>SPHUR</strong></td>
<td>Service Providers High Usage Report. BT’s fraud management system.</td>
</tr>
<tr>
<td><strong>VIC</strong></td>
<td>Virtual Interconnection Circuits.</td>
</tr>
<tr>
<td><strong>VoIP</strong></td>
<td>Voice over Internet Protocol. VoIP services enable voice calls and messaging services to be provided over a broadband connection rather than over traditional telephone networks.</td>
</tr>
<tr>
<td><strong>Voice over Broadband (VoB)</strong></td>
<td>Services that allow the end user to make and receive calls using a broadband connection, for example, using digital subscriber line (DSL) or cable broadband links. They typically use VoIP technology for the conveyance of calls rather than traditional telephone networks.</td>
</tr>
<tr>
<td><strong>WCCP</strong></td>
<td>Wholesale Calls Commitment Package. A discount package offered by BT Wholesale across both Wholesale Calls products, which offers different levels of discount for a 12 month term commitments to specified levels of spend.</td>
</tr>
<tr>
<td><strong>WCLA</strong></td>
<td>Wholesale Calls Line Associated. Wholesale Calls variant provided as the default call service available on a WLR line. It is a combined lines and calls product for customers that do not want to operate their own network and used in conjunction with the CP’s wholesale access line. Since 1998, BT has provided WCLA to allow third party service provider CPs to purchase for resale to end users’ capacity and access to BT’s network.</td>
</tr>
<tr>
<td><strong>WCLI</strong></td>
<td>Wholesale Calls Line Independent. The Wholesale Calls, calls-only (i.e. excluding WLR) variant that enables CPs to offer their own branded telephone service to end users.</td>
</tr>
<tr>
<td><strong>WLR</strong></td>
<td>Wholesale Line Rental. An Openreach product which enables SPs to offer their own branded telephony service to their End-User using the BT network. BT will provide, repair and maintain these lines. BT will provide a consolidated bill to the SPs for all of the services the SP takes. The SP sets its prices to End Users, bills End Users and has the contractual relationship with End Users. BT is obliged to provide WLR in relation to the wholesale analogue exchange lines, wholesale ISDN2 exchange lines and wholesale ISDN30 exchange lines markets where Ofcom has concluded that it holds SMP.</td>
</tr>
<tr>
<td><strong>Wholesale Calls</strong></td>
<td>A BT Wholesale calls product where BT Wholesale supplies a wholesale end-to-end calls product to CPs for them in turn to offer a service to the end user customers. There are two main variants of Wholesale Calls – line associated (WCLA), and line independent (WCLI).</td>
</tr>
<tr>
<td><strong>Wholesale end-to-end calls</strong></td>
<td>End-to-end calls sold by a network operator as a wholesale product to customers who are generally reselling the calls, rather than using them for their own consumption.</td>
</tr>
</tbody>
</table>