



Draft determination to resolve 0870 call termination rate disputes between BT and various operators

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Draft determination

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Section 1

Summary

- 1.1 This dispute concerns the payments made by BT to other communications providers (CPs) for terminating calls to 0870 numbers. These payments are known as termination charges.
- 1.2 On 28 September 2005, Ofcom published a consultation entitled NTS: A Way Forward¹ ("the September 2005 Consultation") in which it proposed changes to the regulatory regime for Number Translation Services (NTS) to address growing concerns among industry and consumer stakeholders about the operation of the regulatory regime. In the September 2005 Consultation, we set out our policy objectives, including, among others, price transparency – consumers should know what they are paying for calls.
- 1.3 In our April 2006 Statement, NTS A Way Forward ("the NTS statement") we proposed to restore the link between the retail prices of NTS calls and geographic calls. To reduce the potential for arbitrage that this proposal created, we also determined that 0870 calls should be removed from the scope of the BT NTS SMP Condition AA11 ("the NTS Call Origination Condition")², which required BT to originate calls to 0870 numbers at cost and enabled revenue sharing on 0870.
- 1.4 On 4 May 2007, anticipating the policy changes to the 0870 numbering range proposed by Ofcom (i.e. ending revenue sharing arrangements), BT advised its wholesale customers through the Operator Charge Change Notice (OCCN) ("the 4 May 2007 OCCN") that it was planning to alter the termination charges paid by BT to terminating communications providers (TCPs) for calls to 0870 numbers, with effect from 1 February 2008.
- 1.5 Although some TCPs agreed the rate proposed by BT, many did not. The TCPs listed in Appendix 1 to this determination (collectively, the "TCPs in dispute") either failed to sign or rejected the OCCN. This meant that there was a disagreement about the charge to be paid by BT, which referred the resulting dispute to Ofcom for resolution on 7 July 2007, asking Ofcom to determine what charges should be payable.
- 1.6 We opened an enquiry into this matter on 9 July 2007 in order to confirm that there was a dispute that we needed to resolve. This being the case, on 31 August 2007 we opened an investigation to consider the dispute and published the scope of the dispute on our website³.
- 1.7 In the scope we explained that we would only consider the charges which should be in place between the parties as from the date on which the policy changes to the 0870 numbering range came into effect.
- 1.8 A number of TCPs (as detailed later) had suggested alternative charges for the termination of calls to 0870 numbers. These proposed charges were rejected by BT. We considered these proposals as well as BT's proposed termination charges in reaching our draft determination of this dispute. Our view on how the dispute should

¹ http://www.ofcom.org.uk/consult/condocs/nts_forward/nts_way_forward.pdf

² http://www.ofcom.org.uk/consult/condocs/narrowband_mkt_rvw/nwe/fixednarrowbandstatement.pdf

³ http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ocases/open_all/cw_963/

be resolved (in the form of a non-confidential draft determination) was sent to the parties on 16 November 2007 and subsequently published.

- 1.9 However it then became clear that the methodology that we had used to resolve the dispute was going to be considered by the Competition Appeal Tribunal (CAT) in another case. On 18 December 2007, we therefore announced that we were suspending consideration of this dispute pending the CAT's judgment in that case.
- 1.10 Following the publication of the CAT's judgments of 20 May 2008 and 15 August 2008, we reopened our consideration of this dispute.
- 1.11 In its judgment dated 20 May 2008⁴, the CAT made a number of comments about how Ofcom should conduct dispute resolution. The CAT's comments have been reflected in the methodology that we have used to reach our proposals, set out below, for resolving this dispute. In particular, we have sought to balance the interests of TCPs and their customers and BT and its customers, as well as considering the extent to which the various options for resolving this dispute are reasonable in the light of Ofcom's statutory duties and obligations.
- 1.12 We accept BT's view that the changes Ofcom is making to the 0870 numbering range justify alterations to the termination charges that they pay to TCPs. However, our assessment suggests that BT's proposed termination charges are not sufficient to adequately cover certain costs that we think BT (and consumers calling 0870 numbers) should pay. We have therefore included an adjustment for costs related to how calls to such numbers are routed across BT and the TCP's network, a routing principle which is called "near-end handover". We consider that such an adjustment is necessary to avoid setting termination charges that are so low that they neither strike a fair balance between the parties nor represent a reasonable outcome in the light of Ofcom's statutory duties and obligations.
- 1.13 Since we have provisionally concluded that BT's proposed termination charges may not be reasonable for the purposes of resolving this dispute, we also provisionally conclude that the TCPs are justified in rejecting them.
- 1.14 As set out above, a number of TCPs had proposed alternative charges, although subsequently some of these proposals have been withdrawn. Our assessment of the remaining proposed charges leads us to provisionally conclude that these charges are too high to be reasonable, given Ofcom's proposals to re-establish the links between retail charges for 0870 calls and those for geographic calls. We have provisionally concluded that the charges proposed by the TCPs would be likely to prevent BT from linking the retail prices for calls to 0870 numbers to the prices for calls to geographic numbers.
- 1.15 On the available information, therefore, we consider that the charges proposed by the TCPs do not strike a fair balance between the parties, nor are they reasonable in the light of Ofcom's statutory duties and regulatory principles, as expressed in particular by our policy aims to improve price transparency for 0870 calls and thereby enhance consumer protection and competition.
- 1.16 We have therefore proceeded to consider other alternatives. The methodology that we have followed is explained in section 6. In summary, we have included additional

⁴ CAT's judgment dated 20 May 2008 in relation to Ofcom's determination of disputes between T-Mobile and BT, O2 and BT, Hutchison 3G and BT and each of Hutchison 3G, Orange Personal Communications Services and Vodafone relating to fixed to mobile and mobile to mobile termination (the "TRD core issues judgment"), [2008] CAT 12 at http://www.catribunal.org.uk/files/Judgment_TRDs_200508.pdf.

costs that we consider relevant, namely the costs related to near-end handover and an allowance for interconnection circuit costs. We have considered two different options for these relevant additional costs:

- A charge based on the **costs of termination of geographic calls plus the relevant additional costs of termination of 0870 calls on a fully allocated cost basis** (referred to below as the “fully allocated cost approach”). This approach enables TCPs to recover the extra costs of providing 0870 termination but also a contribution to what are termed common costs (which can include things such as a contribution towards overhead costs). Under this option, we have calculated a termination charge that allows recovery of costs related to near-end handover and interconnection circuits by using the relevant BT wholesale charges. This rate falls between the lower incremental rate and higher arbitrage ceiling rates noted below, and would allow a TCP to make a contribution towards other costs involved in terminating 0870 calls.
- A charge based on the **costs of termination of geographic calls plus the relevant additional costs of termination of 0870 calls on an incremental cost basis**. This approach allows a TCP to recover through the rate paid by BT (and consumers calling those numbers) the extra cost required to provide 0870 termination. Under this option, the TCP will only be able to recover incremental costs of inter-tandem conveyance arising from near-end handover and interconnection circuits through the termination rate. This represents the lowest charge that we consider would be reasonable. We consider that any termination charge below this rate is unlikely to be reasonable or to strike a fair balance between the parties, since a lower charge would not allow an efficient network TCP to cover the relevant incremental costs of terminating 0870 calls through the termination charge.

1.17 As a cross-check, we have calculated a “no-arbitrage ceiling”. Arbitrage in general is the practice of taking advantage of a price differential. The particular form of arbitrage which is of concern in this case is “artificial inflation of traffic” (AIT). High charges paid to TCPs (which may be above the costs incurred in providing the termination service) could create the possibility of this kind of arbitrage activity. This no arbitrage ceiling represents a level above which a charge would be unreasonable, since any charges above this rate would carry an unacceptable risk of encouraging arbitrage activity on 0870 number ranges, as well as undermining BT’s ability to maintain the alignment of 0870 and geographic retail call charges.

1.18 We have considered these different options in the round, and on balance we provisionally conclude that the fully allocated cost approach is most likely to represent a fair and reasonable termination charge that is also consistent with Ofcom’s statutory duties and obligations. Our reasoning is set out in more detail in section 6. In summary, we consider that such a charge should:

- achieve our policy aims and their intended benefits to consumers by allowing BT to re-establish the link between retail prices for 0870 and geographic calls, for example by including calls to 0870 numbers in its call packages;
- allow TCPs to recover not just the incremental but also some of the other fixed and common costs of termination of 0870 calls from the termination charge;
- support TCPs in using 0870 numbers in an efficient manner and reduce the risk of excessive migration away from 0870 number ranges due to too low termination charges; and

- be less likely to encourage arbitrage activity than higher termination charges.

1.19 Based on the evidence gathered in this dispute and for the reasons set out in this draft determination and explanatory statement, our provisional conclusion therefore is that the charges set out in Table 1 below strike a fair balance between the parties and are reasonable charges from the point of view of Ofcom's statutory duties and regulatory principles.

1.20 We therefore consider that BT should be required to purchase termination of calls to 0870 numbers at these rates.

Table 1: Proposed maximum Day (D), Evening (E) and Weekend (W) 0870 NTS termination charges, pence per minute

<i>Point of handover (described in terms of the origination service on BT's network prior to handover)</i>	D	E	W
DLE	0.67	0.31	0.25
ST (near-end)	0.56	0.26	0.20
ST (far-end - short)	0.41	0.19	0.15
ST (far-end – medium)	0.41	0.19	0.15
ST (far-end –long	0.41	0.19	0.15

1.21 Table 1 above sets out the proposed termination charges.

1.22 In the published scope, we stated that we would determine the termination charges that should apply from the date on which the changes to the rules relating to calls to 0870 numbers come into effect.

1.23 Simultaneous with the publication of this draft determination, Ofcom has published a statement entitled Changes to 0870⁵ in which it has confirmed the proposals from its May 2008 Consultation. Ofcom has said that the changes would take effect 1 August 2009 in order to give CPs time to revise their interconnection charges. The changes will therefore take effect on 1 August 2009.

1.24 The charges that we propose in this determination will therefore not take effect before that date.

⁵ <http://www.ofcom.org.uk/consult/condocs/0870calls/0870statement/>

- 1.25 The background to this investigation is set out in section 2. The history of these disputes is set out in section 3 and the submissions of the parties are summarised in section 4. Our analysis and reasoning for this decision is set out in section 6.

Section 2

Background

0870 number range and NTS

- 2.1 Number Translation Services (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.
- 2.2 NTS numbers are used by organisations and individuals to provide access to a very wide range of services from pay-as-you-go dial-up internet access to financial services, road traffic advice and voting on TV programmes.
- 2.3 NTS numbers start with 08 or 09. The 0870 range is principally used to provide access to pre- and post-sales enquiry lines and services such as the international telephony services provided by resellers.
- 2.4 When the 0870 range was introduced, calls were charged at BT's national rate for geographic calls. Consequently, 0870 numbers were known as "national rate" numbers. BT remains subject to a requirement to continue to price 0870 calls to its customers at its standard national rate by the designation contained in the National Telephone Numbering Plan ("the Plan")⁶. Other CPs are not subject to the same requirement.
- 2.5 In recent years, the link between prices for 0870 calls and national geographic call prices has broken down because:
 - a) CPs other than BT have charged higher retail prices for calls originating on their networks to 0870 numbers than calls to geographic numbers;
 - b) geographic calls have been included in call packages (offered by BT and other CPs) whereas calls to 0870 numbers have not (at least until recently – see paragraph 6.12); and
 - c) The proportion of 0870 calls [✂] has declined.
- 2.6 These factors have resulted in most consumers paying more for 0870 calls than for national calls to geographic numbers.

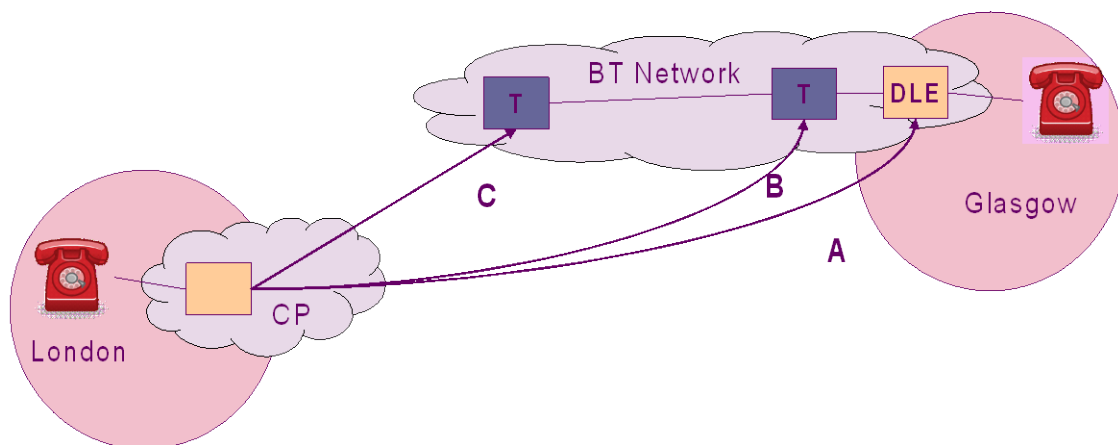
The conveyance and routing of NTS calls

- 2.7 For a given NTS call, there can be several different CPs involved in conveying the call from the caller to the organisation or individual receiving the call (referred to in the following discussion as the "NTS service provider (NTS SP)", e.g. a retailer, information service like NHS Direct etc). This includes an originating communications provider (OCP), on whose network the call commences, and a TCP, on whose network the NTS number resides. The OCP and the TCP may be the same for some calls. There may also be a CP carrying the call between the OCP and the TCP. This is known as a "transit" service and payments for this transit service are known as "TWIX" payments.

⁶ The latest version is available at <http://www.ofcom.org.uk/telecoms/ioi/numbers/numplan081107.pdf>

- 2.8 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. A commonly used industry term for the translation of an NTS number into a geographic number to facilitate call termination is “IN DIP”. It is called this because translations were originally performed by an overlay network known as an Intelligent Network (IN). DIP means the transaction in which the Public Service Telephone Network (PSTN) requests the IN to provide a number translation.
- 2.9 The conveyance of an NTS call can be most easily illustrated by comparing it with that of a geographic call. For a geographic call, the geographic destination of the call is known to the originating network, which is not the case for a call to a 0870 number. As a result, calls to geographic numbers have typically been routed according to the principle of “far-end handover”, whereby the OCP will seek to carry the call as far as possible on its own network.
- 2.10 Figure 1 illustrates the far-end handover principle for geographic calls originated in London and terminated to a geographic number on BT’s network in Glasgow.

Figure 1: Far-end handover for a geographic call



Termination Charge

A – DLE Termination

B - Single Tandem

C - Double Tandem termination (short, medium or long depending on distance from final tandem exchange)

- 2.11 When an OCP passes a **geographic call** to a CP for termination, the TCP (in this example BT) levies a call termination charge. TCPs normally have a ladder of interconnection charges to reflect the distance and the number of switching stages over which they carry calls before they are terminated.⁷ OCPs normally carry calls on their own networks and deliver them to the TCP as close to their ultimate (geographic) destination as possible, in order to maximise the use of their own

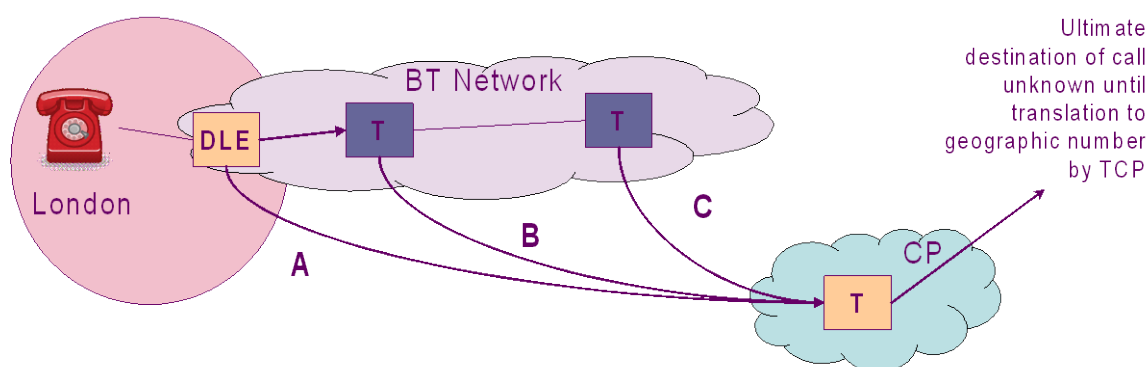
⁷ Strictly speaking, when BT acts as a TCP it levies a ladder of interconnection charges, and under the reciprocity arrangements, other TCPs also levy the same ladder of charges at the same rates as charged by BT. The reciprocity arrangements stem from the fact that charges for fixed geographic call termination have since 1997 been calculated on the basis of a principle of reciprocal charging (See the Ofcom statement *Network Charges from 1997*, published July 1997. See also: *Determination to resolve a dispute between BT and Telewest about geographic call termination reciprocity agreement – Final Statement*, 16 June 2006). Available at: http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ccases/closed_all/cw_890/determination.pdf

networks and to minimise the termination charges payable to TCPs. This routing principle is conventionally referred to as far-end handover and is applicable to the second leg of 0870 calls (i.e. following translation when the call is destined for a geographic number). The termination charge is determined by the point at which the call is handed over to the TCP:

- Digital Local Exchange (DLE) Termination: where an OCP that has a large network carries the call all the way across to Glasgow on its own network, resulting in the lowest termination charge payable to the BT as the TCP.
- Single Tandem (ST) Termination: where an OCP that has a smaller network carries the call from its destination to a tandem switch relatively close to Glasgow, and then hands the call over to BT for transit to Glasgow and termination on the relevant number, resulting in a higher termination charge payable to BT as the TCP.
- Double Tandem (DT) Termination: where the OCP hands the call over to BT at a tandem switch further from Glasgow, for transit to Glasgow and termination on the relevant number, resulting in the highest termination charge payable to BT as the TCP.

2.12 In contrast to calls to geographic numbers, calls to 0870 numbers (and other NTS number ranges) are currently typically routed according to the principle known as “near-end handover”. As 0870 numbers and other NTS numbers are non-geographic (i.e. do not relate to a specific geographic destination) the far-end handover approach cannot be applied to the first leg of the call (before translation to a geographic number), since the OCP does not know the final geographic destination of the call. 0870 calls are therefore routed on a near-end handover basis, which means that the call is taken off the OCP’s network as soon as possible. See Figure 2 for an illustration of the near-end handover of a call originated in London and destined to a geographic number following translation by the TCP.

Figure 2: Near-end handover for NTS call



Termination Charge for origination corresponding to:

A – DLE

B - Single Tandem

C - Double Tandem (short, medium or long depending on distance from first tandem exchange)

2.13 TCPs have an incentive to use their own networks to the greatest extent possible because the incremental costs of their own networks are likely to be less than the cost of paying standard origination and transit charges to BT. This principle is also consistent with OCPs’ commercial objectives since termination payments vary

according to the use of their networks. It is convenient to describe these termination services in terms of the corresponding origination services on the OCP's (in this example BT's) network prior to the point of handover to the TCP. So, the points of handover would be:

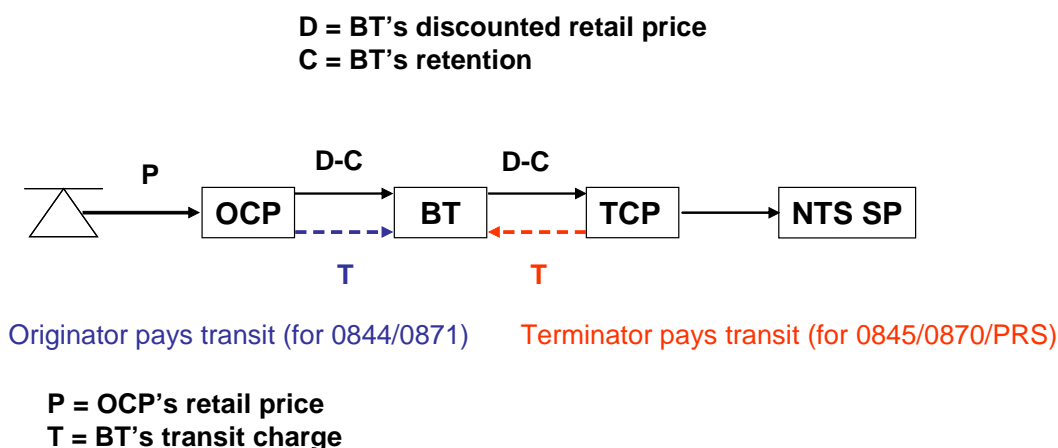
- Corresponding to DLE origination by OCP: where a TCP that has a large network picks up the call early from the DLE and carries the call to the point of translation, resulting in the highest termination charge paid to the TCP.
- Corresponding to ST origination by OCP: where a TCP picks up the call at a single tandem switch relatively close to the location where the call originated, requiring BT to carry the call further and resulting in a lower termination charge paid to the TCP.
- Corresponding to DT origination by OCP: where BT originates the call for the maximum distance across its network for hand-over to, for example, a very small TCP, resulting in the lowest termination charge paid to the TCP for NTS traffic.

2.14 One issue in dispute is the responsibility of operators for certain of the interconnection charges that arise when an 0870 call is terminated on a TCP's network, specifically transit (TWIX) and circuit charges. This is set out in more detail in the analysis and reasoning section below.

Transit

2.15 For geographic calls, and where BT acts as a transit provider, the OCP pays for transit. For non-geographic calls, payment arrangements for transit depend on number range. Where BT acts as transit provider, the OCP similarly pays for transit for calls to number ranges starting 0844 and 0871 (as with geographic calls), whereas the TCP pays for transit for calls to number ranges starting 0845 and 0870, as shown in Figure 3 below.

Figure 3: NTS transit arrangements



The NTS hosting/termination market

2.16 In the TRD core issues judgment of 20 May 2008, the CAT gave guidance as to the approach that Ofcom should take in resolving disputes in accordance with its statutory duties and the Community requirements. As discussed further in section 6, in making our proposal for resolving this dispute, Ofcom is required to take into account all of Ofcom's statutory duties and regulatory principles and establish which

are engaged in this case. Section 3(4) of the Communications Act 2003 (the 2003 Act) sets out a number of principles which Ofcom must have regard to in performing its principal duties where it appears to Ofcom that they are relevant, including:

- the desirability of promoting competition in the relevant markets;
- the desirability of encouraging investment and innovation in the relevant markets;
- the desirability of protecting consumers

2.17 In order to have regard to those principles, we have examined the relevant market in this case.

2.18 Ofcom considered the definition of the market in which TCPs provide NTS termination services in its recent decision under the Competition Act 1998, *NCCN 500*.⁸ In that case, Ofcom found that the relevant market for considering the impact of BT's proposed termination charges for NTS calls was the market for termination/hosting of NTS calls on all NTS number ranges by all TCPs in the UK. This market was defined by reference to the two types of service provided by TCPs on NTS number ranges: **call termination** for OCPs, and various services to NTS SPs which we refer to collectively as "**NTS hosting**". NTS hosting includes the payment of revenue shares. It also includes the provision of a range of value added services. We consider that this analysis is relevant to our assessment of how the termination charges proposed in this dispute will affect competition in the relevant market.

2.19 Ofcom followed its general approach to market definition in this case. This identifies market boundaries by considering the potential for demand and supply side substitution to constrain the pricing of a "hypothetical monopolist". Ofcom first considered whether demand-side substitution would be sufficient to constrain the ability of a hypothetical monopolist⁹ in the supply of NTS termination/hosting service to sustain a small but significant non-transitory increase in price (SSNIP) above the competitive level. Supply-side substitution possibilities were then assessed to consider whether they provide any additional constraints on the pricing behaviour of the hypothetical monopolist which have not been captured in the demand-side analysis. In this assessment, supply-side substitution is considered to be a low cost form of entry which can take place within a reasonable time frame (e.g. up to 12 months).

2.20 One of the key conclusions on market definition in *NCCN 500* based on an analysis of demand and supply side substitution was that all NTS number ranges (including 0870) were in the same market. This conclusion was based on the potential for supply-side substitution and the homogeneity of competitive conditions rather than demand-side substitution:

- consumer research indicated that consumers' perceptions of the relative cost to them of calling NTS numbers depends on the number range. These perceptions reflect real differences in the prices of calls to different NTS number ranges and the type of services that tend to be offered on them;

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http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ccases/closed_all/cw_823/NCCN_500.pdf

⁹ For more information on the hypothetical monopolist test see paragraphs 2.5 onward of http://www.ofcom.gov.uk/shared_ofcom/business_leaflets/ca98_guidelines/ofcom403.pdf

- given consumer sensitivity, service providers may be reluctant to switch to other number ranges because this may have an impact on call volumes. The extent of that reluctance and, hence, the scope for demand-side substitution was difficult for Ofcom to determine;
- once a TCP has established the network platform needed to terminate NTS calls, the platform can be used equally for all types of NTS voice calls. In addition, the marketing and distribution arrangements for the various NTS ranges are very similar;¹⁰
- given that little additional cost need be incurred to terminate calls on additional number ranges (at least in the case of voice calls¹¹), a monopoly supplier of termination/hosting on the 09 or 087 ranges could be additionally constrained by supply-side substitution from CPs currently providing termination on 0845 number ranges;
- although some TCPs specialise in providing services on particular number ranges (notably in relation to 0845 traffic), there are also smaller TCPs who are also present in the provision of NTS termination in 09 and 087 number ranges, which is suggestive of a degree of homogeneity of competitive conditions not necessarily reflected in market shares;¹² and
- relationships between TCPs and NTS SPs are not based on geographic considerations so that termination/hosting services provided anywhere in the UK are likely to be seen by NTS SPs as demand-side substitutes.

2.21 We consider that the key determinants of market definition in *NCCN 500*, in particular the scope for supply-side substitution, are unlikely to have changed materially since the analysis was carried out (*NCCN 500* looked at the market from 1/04/04 to 1/01/06). The absence of significant barriers to supplying call termination/hosting services on alternative NTS number ranges indicates that TCPs currently terminating 0870 calls can operate across all NTS number ranges.¹³ Hence even if an NTS termination/hosting business was to stop providing 0870 termination/hosting services, it could easily supply on other ranges (e.g. where revenue sharing was available) and could re-enter the 0870 range if 0870 became profitable again.

¹⁰ *NCCN 500*, paragraph 4.103

¹¹ It is likely to be more difficult for providers of NTS voice call termination, in response to a 10% increase in NTS data call net termination charges, to supply NTS data call termination. For instance, entry would require investment in IP networks. These network investments are likely to be substantial since digital local exchange ("DLE") interconnection is required and would suggest entry within a year would be unlikely. Even if entry within a year were possible, suppliers operating in voice that are not operating in data tend to be small-scale, and the likelihood of such operators placing an effective constraint on existing operators in data therefore appears low.

Accordingly, Ofcom considered that there is likely to be an asymmetry between likely entry from data to voice, with possible barriers for those operating in voice, who seek to supply data termination but not vice versa. However, Ofcom considers that the possibility of asymmetric supply-side substitution from data to voice combined with the evidence on common pricing constraints suggests that voice and data NTS call termination can be regarded as part of a single market. *NCCN 500*, paragraphs 4.134, 4.135, 4.141. Ofcom also notes that 0870 calls tend to be voice only.

¹² *NCCN 500*, paragraph 4.106.

¹³ Ofcom notes there may be some barriers to expansion within a number range for smaller TCP's due to interconnections costs – see *NCCN 500*

Market shares

- 2.22 Ofcom has considered two different models for NTS call termination: “island TCPs” and “network TCPs”. Island TCPs offer NTS termination/hosting, but have limited physical interconnection with BT (possibly only interconnected at a few points with BT’s fixed network). A network TCP also offers NTS termination/hosting services but is fully interconnected to BT. To attract NTS SPs, island TCPs may differentiate their services from those offered by network TCPs and/or cater more effectively for niche customers. However, Ofcom considers that network TCPs are likely to be more cost efficient at terminating 0870 call traffic than island TCPs because they can route calls in such a way as to minimise the extent of conveyance services needed to terminate the call. This contrasts with island TCP’s who may only be interconnected with BT at a few switches, and will therefore need to buy in additional conveyance services in order to terminate calls nationally. Accordingly, Ofcom considers that the rate we determine in this dispute should, to the extent that it reflects the costs of termination, only allow efficiently incurred costs of termination, based on a fully interconnected network TCP. In the following paragraphs, we consider the respective competitive impacts of island and network TCPs operating in the relevant market.
- 2.23 Ofcom considers that “island” and “network” TCPs operate in the same market, which is the market for NTS termination/hosting identified in NCCN 500.
- 2.24 Ofcom notes that in 2004/05, BT terminated approximately [>]% of all 0870 terminated minutes, and other large network TCPs¹⁴ (in aggregate) terminated no less than [>]%, with remaining small operators having a relatively smaller aggregate share of no more than 15%.¹⁵ This remaining 15% share could to some extent be considered a proxy for small TCPs’ share of 0870 terminated minutes. Ofcom considers this share is, however, likely to significantly overstate the actual share of 0870 minutes terminated by small TCPs, given that this remaining share will also comprise some further network operators and may include resellers, who do not necessarily have interconnection or switch equipment¹⁶.

The 2005 NTS policy developments

- 2.25 The September 2005 Consultation proposed changes to the regulatory regime for NTS to address growing concerns among industry and consumer stakeholders about the operation of the regulatory regime.
- 2.26 In the September 2005 Consultation, Ofcom set out its policy objectives, which were:
- price transparency – consumers should know what they are paying for calls;
 - range and choice of services – consumers should have access to a wide range of services and a choice of suppliers;

¹⁴ Cable & Wireless/Energis, Centrica, COLT, Easynet, Gamma Telecom, Global Crossing, Kingston, Ntl Opal, Telewest, THUS, Tiscali, Your Communications

¹⁵ Ofcom estimate based on information request responses of BT and major altnets.

¹⁶ Information provided by BT under section 26 information request under the NCCN 500 investigation, August/September 2005

- consumer protection – the use of 08 numbers as a micro-payment system¹⁷ should be accompanied by measures which provide an adequate level of consumer protection, particularly for vulnerable consumers;
- viability of pay-as-you-go dial-up internet access – at the time there were still nearly 2.6 million customers using dial-up internet access services and there was concern that the viability of this market should not be undermined;
- promotion of competition – regulation should promote competition between CPs and NTS SPs consistent with reasonable levels of cost recovery and revenue certainty; and
- reduced regulatory intervention – Ofcom should operate with a bias against regulatory intervention and should avoid imposing any unnecessary burden on consumers, suppliers or other stakeholders.

The NTS Statement

2.27 In the subsequent NTS Statement Ofcom confirmed that it would implement some of the proposals that were set out in the September 2005 Consultation.

2.28 The changes to the NTS regime as confirmed in the NTS Statement that are of particular relevance to this dispute are as follows:

- **restoring the geographic link for 0870 calls:** Ofcom confirmed that it would amend the Plan to establish the principle that every OCP should charge callers no more for 0870 calls than national calls to geographic numbers. Ofcom anticipated that the restoration of the link would lead to the inclusion of calls to 0870 numbers in call packages; and
- **removing 0870 calls from the scope of the NTS Call Origination Condition:** Ofcom confirmed that it would remove 0870 calls from the scope of the NTS Call Origination Condition, which requires BT to originate and retail these calls on behalf of TCPs.¹⁸ This move aimed to remove the regulatory support for revenue sharing on the 0870 range, and allow interconnection arrangements for these calls to be more like those for geographic calls, with BT purchasing call termination from TCPs rather than originating and retailing 0870 calls on behalf of TCPs. In the NTS Statement Ofcom noted that this was likely to lead to a reduction in the payments that OCPs make to TCPs for terminating 0870 calls, and to lower prices for retail 0870 calls¹⁹.

2.29 Ofcom considered that proposals for 0870 calls serve these objectives in the following ways:

¹⁷ NTS is used as a micro-payment system whereby payment for or towards the cost of providing a product or service is made via the retail price of the phone call paid by consumer and passed to the service provider in the form of the revenue share paid by the TCP from the wholesale call termination charge

¹⁸ The NTS Condition (SMP Condition AA11) controls the setting of termination charges for calls to 0870 numbers. SMP Condition AA11 specifies that the only charges that may be made for providing NTS call origination services are a charge for the Call Origination Service used to originate the NTS Call, a charge for the NTS Retail Uplift and a charge for bad debt relating to the retailing by BT of Premium Rate Services calls.

¹⁹ See http://www.ofcom.org.uk/accessibility/rtfs/statements/archive06/nts_forward.rtf paragraph 1.6

- **price transparency:** The proposals would improve price transparency by restoring the link between 0870 and geographic call charges and extending that link so that it applies not only from BT phones, but also from all fixed and mobile phones, including payphones;
- **range and choice of services:** The proposals would promote the availability of a wide range of services by continuing to allow revenue sharing at a range of price points on 08 and 09 number ranges.
- **consumer protection:** The ending of revenue sharing on 0870 calls would also alleviate consumer protection concerns on this range. The ending of revenue sharing removes one of the major concerns expressed by consumers regarding NTS SPs being able to receive money from phone calls and having an incentive to prolong calls to make more money (although research found no correlation between waiting time and the NTS number used²⁰) and to engage in scams.
- **competition and revenue certainty:** The proposals to improve price transparency would promote more effective price competition on all NTS number ranges. TCP/NTS SP revenue certainty would be assisted by restoration of the geographic link for 0870 calls. At present, TCP revenues are subject to change whenever BT changes its wholesale charges or discounts. The policy breaks this link by having a termination charge that is independent of BT's retail pricing, transferring the key source of revenues generated by value-added services offered on 0870 number ranges from the termination charge to charges to the service provider, which is under the control of the TCP.
- **reduced regulatory intervention:** The need for regulatory intervention to resolve interconnection disputes is likely to decline as a result of the improved level of TCP revenue certainty. Having a fixed termination charge determined by Ofcom removes the need for BT to issue OCCNs proposing price changes which TCPs disagree with, the result being fewer disputes. Ofcom acknowledges that its proposals for 0870, in particular, could cause some disruption for TCPs and NTS SPs, but the results of its research and analysis indicate that the costs involved are likely to be outweighed by the associated benefits.

2.30 Ofcom's proposal to remove 0870 calls from the scope of the NTS Call Origination Condition took account of the risk that leaving 0870 calls within the scope of the NTS Call Origination Condition could lead to arbitrage opportunities. Paragraphs 4.126-4.129 of the NTS Statement (repeated here for ease of reference) outlined Ofcom's views in this regard as follows:

"4.126 In reaching this conclusion, Ofcom has also taken account of the possibility that maintaining 0870 calls within the scope of the NTS [Call Origination] Condition would give rise to arbitrage opportunities, once the link to geographic charges has been restored. If 0870 calls remained within the scope of the NTS [Call Origination] Condition, there would continue to be some scope for revenue sharing on 0870 calls, albeit at a much lower level than at present. But once the geographic link has been restored, 0870 calls are likely to be included in flat rate call packages now offered by most major OCPs, including for example BT's BT Calling Plans with a weekend, evening & weekend and anytime option. All contain

²⁰ See http://www.ofcom.org.uk/accessibility/rtfs/statements/archive06/nts_forward.rtf, paragraphs 5.79 to 5.88

some bundled calls. This means that there would be an opportunity to make additional 0870 calls, at no cost to the caller, solely in order to generate a revenue share.

4.127 Faced with this sort of arbitrage, OCPs would be likely to explore several options:

- taking measures to prevent the calls being made e.g. by blocking access to affected numbers;
- taking measures to prevent a revenue share being made on calls of this kind; or
- raising the prices of their call packages.

4.128 Ofcom's observations on these options are as follows:

- In order to apply the first two of the options, OCPs would first need to be able to distinguish between normal 0870 calls and arbitrage calls. Ofcom's discussions with OCPs indicate that this would be a difficult task;
- If the solution involved prevention of the revenue share on 0870 calls included in flat rate packages, this would undermine the purpose of the NTS Condition; and
- If the result was an increase in the price of packages that would clearly be detrimental to the interests of consumers.

4.129 These factors reinforce Ofcom's view that the appropriate course of action is to remove 0870 calls from the scope of the NTS Condition'.

- 2.31 Ofcom's concern in removing 0870 calls from the scope of the NTS Condition was to ensure that any outpayments made by TCPs through revenue sharing would not be sufficient to enable AIT to be profitable as this would undermine Ofcom's aim of improving price transparency through the restoration of the link between 0870 and geographic national calls.

The 2008 Consultation on 0870

- 2.32 On 2 May 2008 Ofcom published a further consultation on 0870 numbers entitled Changes to 0870²¹ ('the May 2008 Consultation'). In the May 2008 Consultation²² Ofcom confirmed its intention to proceed with the changes to 0870 proposed in the NTS Statement, subject to stakeholder comments, with the exception of one proposal to remove free to caller price announcements at the start of each call in favour of certain price publication obligations.

- 2.33 The revised proposals were:

- **restoring the geographic link for 0870 calls:** Ofcom would modify the Plan to establish the principle that OCPs should charge no more for 0870 calls than national calls to geographic numbers. OCPs who wish to charge higher rates for

²¹ <http://www.ofcom.org.uk/consult/condocs/0870calls/0870condoc.pdf>

²² <http://www.ofcom.org.uk/consult/condocs/0870calls/0870condoc.pdf>

0870 calls would be required to publish their charges in accordance with a revised Code of Practice for NTS and calls to 0870 numbers under General Condition 14.2.

- **removing 0870 calls from the scope of the BT NTS Call Origination Condition:** Ofcom would remove 0870 calls from the scope of the NTS Condition as previously proposed.

The 2009 Policy Statement on 0870

- 2.34 On 23 April 2009, Ofcom published a statement entitled *Changes to 0870*²³ (the '2009 Statement') in which it confirmed the proposals from the May 2008 Consultation with certain minor modifications to the legal instruments. Ofcom specified that the changes would take effect on 1 August 2009 to give CPs time to revise their interconnection charges.

BT's relevant regulatory obligations

The End-to-End Connectivity Obligation

- 2.35 On 13 September 2006 Ofcom imposed the End-to-End Connectivity Obligation²⁴ on BT, an access-related condition, under section 74(1) of the 2003 Act.
- 2.36 The End-to-End Connectivity Obligation provides that:
- “1.1 Where a provider of a Public Electronic Communications Network reasonably requests in writing the Connectivity Provider [i.e. BT] to purchase wholesale narrowband call termination services (fixed and mobile voice, and Narrowband Data) provided by it, the Connectivity Provider shall purchase such services.
- 1.2 The purchase of such services shall occur as soon as reasonably practicable and shall be on reasonable terms and conditions (including charges) and on such terms and conditions (including charges) as Ofcom may from time to time direct.
- 1.3 In purchasing such services, the Connectivity Provider cannot after such purchase unreasonably change, withdraw or restrict access to an applicable Normal Telephone Number.
- 1.4 The Connectivity Provider shall comply with any direction Ofcom may make from time to time under this condition.”
- 2.37 Call termination for 0870 numbers is a wholesale narrowband call termination service and BT is therefore obliged to purchase those services in accordance with the End-to-End Obligation.
- 2.38 In the TRD core issues judgment, the CAT held that the reasonableness requirement in condition 1.2 of the End-to-End Connectivity Obligation is to be given its ordinary meaning: the price that should prevail between the parties should be fair as between the parties, taking into account all the circumstances, including the arguments put forward by the parties in the dispute, Ofcom's statutory duties and the Community requirements under the Act, as outlined above.

²³ <http://www.ofcom.org.uk/consult/condocs/0870calls/0870statement/>

²⁴ http://www.ofcom.org.uk/consult/condocs/end_to_end/statement/

Section 3

History of the disputes

The parties to the disputes

BT

- 3.1 British Telecommunications plc is a wholly-owned subsidiary of BT Group plc and encompasses virtually all the businesses and assets of the BT Group.
- 3.2 BT describes itself as a provider of communications solutions and services operating in 170 countries. BT's principal activities include networked IT services, local, national and international telecommunications services, and higher-value broadband and internet products and services. In the UK, BT states that it serves business and residential customers, as well as providing network services to other operators.²⁵

The TCPs

Network and Island TCPs

- 3.3 All of the TCPs listed in Annexes 2 and 3 to this explanatory statement terminate 0870 calls.
- 3.4 TCPs offering 0870 termination/hosting services vary hugely in scale, ranging from small organisations specialising in the provision of particular categories of service (such as call centre applications or basic translation services) to large organisations offering a broad range of NTS services as well as many other non-NTS services.
- 3.5 TCPs also vary in the geographic reach of their networks. The largest have networks that span the UK and the Island TCPs operate from a single location, utilising other CPs' networks for call conveyance without possessing any network of their own. Those with extensive geographic reach are able to carry traffic greater distances on their networks and are therefore able to minimise their payments to other CPs for geographic termination after the 0870 number translates into a geographic number. As previously discussed, under the current regime applicable to calls to 0870 numbers (and NTS calls more generally) TCPs have an incentive to collect calls from OCPs close to their origin in order to maximise the termination payments they receive from OCPs.

History of the dispute

- 3.6 In referring the dispute, BT submitted that the main forum for discussion of implementation of the changes to 0870 proposed by Ofcom in the NTS Statement was the NTS Focus Group (NTS FG).
- 3.7 BT submitted that it had initiated discussion at the NTS FG in January 2006, prior to the publication of the 2006 NTS Statement, aware that it could take a considerable period to reach consensus. It would appear that the NTS FG meetings on the following dates are of particular relevance to this dispute:

²⁵ Source: Annual Report 2007 at <http://www.btplc.com/Sharesandperformance/Annualreportandreview/Annualreports/AnnualReports.htm>

- At the 11 May 2006 NTS FG, BT indicated that its proposal for 0870 termination charges would be based on the geographic call model;
- On 3 July 2006, TCPs discussed how to approach 0870 termination and were unable to reach a consensus but identified a number of issues to resolve;
- At the 6 July 2006 NTS FG meeting, BT presented issues for consideration which it had identified. These included routing principles, ownership of circuits, TWIX payments and contractual considerations. BT stated that these issues broadly matched those identified by TCPs on 3 July 2006; and
- At the 2 November 2006 meeting THUS proposed a set of 0870 termination charges.

3.8 On 4 May 2007, BT issued an OCCN to TCPs which included a calculation of termination charges for 0870 calls based on geographic termination charges. These charges are set out in Table 2 below:

Table 2: BT's proposed termination charges

(i) New termination payments for 0870 calls - BT originated traffic				
Service	Effective Date	Daytime (ppm)	Evening (ppm)	Weekend (ppm)
ST Termination	1 February 2008	0.2657	0.1249	0.1003
DLE Termination	1 February 2008	0.3763	0.1756	0.1402
(ii) New termination payments for 0870 calls - Transit traffic (excluding bespoke agreements made by other network operators and TCPs)				
Service	Effective Date	Daytime (ppm)	Evening (ppm)	Weekend (ppm)
ST Termination	1 February 2008	0.2657	0.1249	0.1003

Notes: (i) The ST Termination charges are calculated based on the average actual charges paid by BT to other network operators for geographic call termination for March 2007 (excluding DLE handover).

- 3.9 A number of TCPs rejected the terms of the BT OCCN. On 7 July 2007 BT referred these TCPs as part of this dispute to Ofcom for resolution (see Annex 1).
- 3.10 Some other TCPs that had failed to respond to the BT OCCN or were in continued dialogue with BT when BT referred its dispute. BT and the additional TCPs listed in Annex 2 could not reach agreement and on 6 August 2007 BT referred these TCPs for inclusion within this dispute.
- 3.11 Ofcom decided that it was appropriate for it to handle the dispute and opened a formal investigation on 31 August 2007 and published the scope on our website:

"The scope of the dispute is to assess the level of charges payable by BT for call termination on 0870 numbers in respect of each of the TCPs included in the dispute. Specifically, Ofcom will consider whether:

With effect from the date that the changes to the regulatory regime applicable to calls to 0870 numbers as set out in the NTS Statement come into effect, the termination charges proposed by BT or, where appropriate, the TCPs are reasonable terms and conditions for the purposes of the end-to-end connectivity obligation.

In considering whether the proposed charges constitute reasonable terms and conditions, Ofcom will consider the responsibility of operators for additional interconnection charges, including transit (TWIX) and circuit charges.”

3.12 Certain TCPs proposed alternative charges for termination of calls to 0870 numbers during their negotiations with BT. THUS, Band-X (now Invomo), Cable & Wireless and FleXtel all provided evidence to Ofcom of having proposed their own charges to BT for terminating calls to 0870 numbers, which were rejected by BT. On 16 October 2007, we updated the Competition and Consumer Bulletin to reflect the fact that these proposals had been included within the scope of this dispute. IVResponse also provided evidence to Ofcom of having proposed their own charges to BT for terminating calls to 0870 numbers, which were rejected by BT. On 30 October 2007, we updated the Consumer and Competition Bulletin to include IVResponse’s proposal within the scope of this dispute.

3.13 The alternative termination charges proposed by TCPs are listed in Table 3 below.

Table 3: Alternative proposed termination charges for 0870 calls

		proposed termination charges ppm		
CP	Interconnection point	Day	Evening	Weekend
BT (OCP)	DLE Termination	0.2657	0.1249	0.1003
	ST Termination	0.3763	0.1756	0.1402
	ST Termination (Transit)	0.2657	0.1249	0.1003
THUS	DLE Termination	[✕]	[✕]	[✕]
	ST Termination	[✕]	[✕]	[✕]
	DT - Short	[✕]	[✕]	[✕]
	DT - Medium	[✕]	[✕]	[✕]
	DT - Long	[✕]	[✕]	[✕]
Band-X	DLE Termination	1.37	0.63	0.49
	ST Termination	1.48	0.68	0.53
Cable & Wireless	ST Termination [Base rate (DTS)]	[✕]	[✕]	[✕]
	DLE Termination [At DLE (Base + LTC)]	[✕]	[✕]	[✕]
	ST Termination (Transit) [Incoming transit (Base)]	[✕]	[✕]	[✕]
	ST Termination (Half- Transit) [Direct from OLO (Base + half transit)]	[✕]	[✕]	[✕]
	ST Termination	4	4	4
FleXtel	ST Termination	1.5	1.5	1.5
IVResponse	ST Termination			

Note: [✕]

3.14 A non-confidential draft determination was sent to the parties on 16 November 2007 and published on Ofcom’s website on 19 November 2007.

3.15 Consistent with Ofcom’s decision in its dispute determinations on fixed to mobile and mobile to mobile termination²⁶, in deriving the termination charges proposed in the draft determination, in the 2007 draft determination we applied a gains from trade (GFT) test. In assessing BT’s gains from trade, we considered whether the disputed

²⁶ http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ccases/closed_all/cw_942/

charges might facilitate undesirable arbitrage which would have an effect on BT's gains from trade.

- 3.16 Most ²⁷ of the parties who commented on the 2007 draft determination raised serious concerns about the use of the GFT test, which they linked with the grounds of appeals lodged against Ofcom's determination of disputes between T-Mobile and BT, O2 and BT, Hutchison 3G and BT and BT and each of Hutchison 3G, Orange Personal Communications Services and Vodafone relating to fixed to mobile and mobile to mobile termination (TRD appeals). On 18 December 2007 we announced that we were suspending our consideration of this dispute, pending the judgment of the CAT in relation to the TRD appeals.
- 3.17 Following the publication of the CAT's judgments of 20 May 2008 and 15 August 2008 in the TRD appeals, we reopened our consideration of this dispute. In the light of those judgments, which rejected the GFT test as a basis for resolving disputes, we have reconsidered the issues in this dispute afresh and have not resolved the dispute along the lines outlined in the 2007 draft determination.
- 3.18 Subsequently, we invited the parties to the dispute to consider whether they wished to update any part of their submissions in relation to this dispute or, where relevant for the purposes of this dispute, their submissions in relation to the 0870 policy consultation. The purpose of this invitation was to allow parties to update the relevant information that they had previously provided to Ofcom to take into account the CAT's judgments in the TRD appeals and any changes over the lapsed time period since the opening of the investigation. BT and IVResponse updated their originally proposed charges for termination of calls to 0870 numbers.
- 3.19 BT's proposed charges and the alternative charges proposed by TCPs to BT, based on the updated information provided by the parties to the dispute, are set out in Table 4 below.

²⁷ BT, Cable & Wireless, COLT Telecommunications, Carphone Warehouse. See http://www.ofcom.org.uk/consult/condocs/0870_dispute/responses/

Table 4: Updated alternative proposed termination charges for 0870 calls

		proposed termination charges ppm		
CP	Interconnection point	Day	Evening	Weekend
BT	ST termination	0.2492	0.1265	0.1001
	DLE termination	0.3648	0.1794	0.1418
	Transit traffic – ST termination	0.2657	0.1249	0.1003
	ST	1.46	1.25	0.95
	DLE	1.48	0.68	0.53
IV Response	ST	1.46	1.25	0.95
Flexitel	ST	4	4	4
Invomo	ST	1.37	0.63	0.49
	DLE	1.48	0.68	0.53

Note: THUS and Cable & Wireless withdrew their proposed charges.

- 3.20 Cable & Wireless and THUS submitted to Ofcom that they have withdrawn their proposed rates. Cable & Wireless submitted that “in light of events since the dispute was first opened they are no longer of the opinion that the rates they proposed to BT necessarily represent the correct resolution of this dispute”²⁸.

Information sought by Ofcom

- 3.21 On 19 September 2007 Ofcom wrote to BT requesting its views on who should bear the responsibility for interconnection charges, including transit (TWIX), and on which are the relevant points of interconnection for calls originated or transited by BT and destined for termination on another operator’s network.
- 3.22 On 1 October 2007, we sent an information request under Section 191 of the 2003 Act (this request was sent in draft on 19 September 2007) to BT requesting information, amongst other things, on its costs and revenues of originating and transiting calls for 0870 numbers.
- 3.23 On 27 October 2007 we wrote to the TCPs requesting views on who should bear the responsibility for interconnections charges, including transit (TWIX) and about the points of interconnection for calls originated or transited by BT and destined for termination on the TCP’s network.
- 3.24 On 10 November 2008, we sent an information request under Section 191 of the 2003 Act to BT requesting that it update any part of its previous submissions relevant to this dispute and requesting information, amongst other things, on the impact of the proposed termination charges for 0870 numbers and whether BT considers that these:
- would strike a fair balance between the parties; and
 - would be reasonable from the point of the regulatory objectives which BT considers to be relevant to the resolution of this dispute.
- 3.25 We sent information requests under Section 191 of the 2003 Act to IVResponse, Cable & Wireless, Thus, Syntec Ltd, Cheers International Telecom Ltd, Telxl Ltd,

²⁸ Email from Cable & Wireless to Ofcom 20 October 2008.

Colt Telecommunications, Easynet Group, Invomo/Band-X, Opal Telecom Ltd, and Magrathea Telecommunications Ltd on 13 November 2008, and to FleXtel on 21 November 2008, giving them the opportunity to update any part of their previous submissions relevant to this dispute and requesting information, amongst other things, on the impact of the proposed termination charges for 0870 numbers and whether they consider that these:

- would strike a fair balance between the parties; and
- would be reasonable from the point of the regulatory objectives which they consider to be relevant to the resolution of this dispute.

3.26 On 7 November 2008, we wrote to the remaining TCPs who are party to this dispute inviting them to provide similar information.

3.27 On 30 January 2009, we sent an information request under Section 191 of the 2003 Act to BT requiring it to provide, among other things, details of any analysis which it has undertaken to quantify the risk of AIT that it faces as a result of its decision to include calls to 0845 and 0870 numbers in its call packages and any measures BT has taken or proposes to take to mitigate this risk.

Section 4

The submissions of the parties

- 4.1 In addition to the information from BT, we also received submissions from Easynet Group (Easynet), Flextel, Cable & Wireless, COLT Telecommunications, Cheers International Telecom Limited (Cheers International), Invomo Ltd (Invomo), THUS, Syntec UK Limited (Syntec), Magrathea Telecommunications Limited (Magrathea Telecommunications), IVResponse Ltd (IVResponse), Telxl Ltd (Telxl), Sala Trading Ltd (Sala Trading), KCom Group, Gamma Telecom Holdings Ltd (Gamma Telecom) and Opal Telecom Ltd (Opal Telecom).
- 4.2 The submissions of the parties can be broken down into the following issues:
- Responsibility for payment of circuit charges;
 - Responsibility for payment of transit charges (TWIX);
 - Routing of calls and points of interconnection;
 - Responsibility for payment of IN DIP costs;
 - Under recovery of call termination costs by 0870 TCPs ;
 - Variation of termination charges according to point of interconnection
 - Comments on the proposed termination charges; and
 - Identification of relevant benchmarks

Circuit charges

- 4.3 The circuits in question are the interconnection circuits connecting BT's network to the TCP's network.
- 4.4 BT submitted that TCPs currently have responsibility for circuit charges for 0870 calls as they own the traffic stream under the Standard Interconnect Agreement (SIA) which is a standard contract for interconnection with BT. The reverse is currently the case for geographic termination charges, where the OCP pays for the circuit as they own this traffic stream under the SIA. BT proposed that as 0870 is an NTS number range, responsibility for circuit charges should remain with the TCP. This follows the existing model for 0800 services, which equally do not support revenue share, and for which circuit charges are borne by the 0800 TCP and supported from revenues received from NTS SPs who wish to use these number ranges.
- 4.5 Invomo submitted that the party making the profit should pay for interconnection circuits. The changes to 0870 allow BT to make a profit, therefore BT should pay for interconnect circuits. Syntec and Easynet submitted that BT, as the OCP, should be responsible for providing the interconnect circuits to carry the traffic, as is the case with geographic call termination.
- 4.6 COLT and Opal Telecom submitted that the TCP should pay for interconnect circuits. Magrathea Telecommunications submitted that if the interconnection for 0870 numbers is maintained "according to NTS principles", then the TCP should pay for

the circuits. BT and Cable & Wireless submitted that a change in traffic ownership is not a pragmatic solution as 0870 traffic is carried on shared routes with other traffic that remains the responsibility of the TCP.

Responsibility for transit charges (TWIX)

- 4.7 The TCP is currently responsible for the transit payment for 0870 calls terminated on its network. In referring this dispute BT submitted that, although the route taken by the call is the decision of the OCP, the call is still an NTS call and may need an IN DIP. Both current capacity and existing routing plans are in place to route calls efficiently to the TCP's nominated switches where these IN platforms sit. BT submitted that changing the commercial position on who pays the transit is likely to involve a large amount of circuit and routing re-arrangements for both BT and TCPs, whereby the OCP would try to reduce the transit charge by routing calls differently.
- 4.8 BT submitted that there is therefore limited benefit in changing the existing transit arrangements, and consequently 0870 number range holders i.e. the TCPs should pay for the transit service over the BT network. BT further submitted that the TCP should pay for transit as it is the TCP that translates the 0870 number and knows where its customer is located.
- 4.9 Cable & Wireless submitted that if TCPs were liable for transit payments, in addition to providing the capacity to carry the traffic, there would be no incentive for OCPs to route directly to the TCP. Cable & Wireless submitted that it "asserts the right to recover costs in the collection / conveyance of 0870 calls"
- 4.10 Easynet, Invomo, COLT Telecommunications, THUS and Cable & Wireless submitted that the OCP, BT, should pay for transit charges as the OCP is making a profit.
- 4.11 Carphone Warehouse submitted that the TCP should pay for the transit charges as the TCP is the owner of the service and should therefore be responsible for its costs.
- 4.12 COLT submitted that it is essential that in any solution Ofcom fully considers and addresses the true costs of terminating 0870 calls which include the cost of transit and the cost of physical interconnection links.

Routing of calls and points of interconnection

- 4.13 The TCP is currently responsible for the transit payment for 0870 calls terminated on its network. BT submitted that it "believes that the near-end versus far-end position is linked to the debate between call terminators and originators as to who pays for the transit charge "TWIX" and circuit charges". BT submitted that if responsibility for the transit payment was to change from TCP to OCP this is likely to require a change in the routing principle for 0870 calls.²⁹ BT submitted that this would require very large levels of circuit re-arrangements, both at the interconnect level and within BT and CPs internal networks, at a time when many networks are evolving to new technologies.
- 4.14 Cable & Wireless hold the view that near-end handover of non-geographic traffic remains the most efficient form of routing and the most pragmatic as "only the terminating operator is able to determine the destination of a call to 0870". Carphone

²⁹ Change from NTS routing principle of near-end handover to a fixed geographic routing principle of far-end handover arrangements.

Warehouse submitted that the appropriate points of interconnection should be determined so as to encourage the deepest point of interconnection with BT's network.

- 4.15 Invomo, Cable & Wireless and Carphone Warehouse submitted that the TCP should determine the point of interconnection.
- 4.16 Cable & Wireless agreed with BT that keeping the routing of calls unchanged is the most pragmatic option. However, Cable & Wireless submitted that the difference in costs associated with delivery of a geographic number compared with those of a 0870 call should be taken into account when setting the termination charges for 0870 calls.

IN DIP

- 4.17 Currently, the IN DIP is carried out on the TCP's network, for which the costs are borne by the TCP. BT submitted that a number of TCPs have indicated that they consider these charges to be the responsibility of the OCP. Calls to 0870 number ranges will continue to require number translation via the IN platform after the changes to the regulations for the 0870 number range. It is BT's view that as this is an activity which is required by the 0870 number range owner, to enable the call to be terminated on their network, then the charge for this activity should be the responsibility of the TCP only.

Under-recovery of 0870 call termination costs by 0870 TCPs

- 4.18 BT submitted that a number of TCPs have expressed concern that the rates proposed by BT in its OCCN would not enable full cost recovery.
- 4.19 BT does not believe that the termination charge is the only source of revenue for TCPs for 0870, and considers that charges made by TCPs to their NTS SP customers could reflect the degree of costs associated with 0870 termination. BT further submitted that NTS, at its conception, was not designed to provide micro-payment opportunities to NTS SPs but to provide the functionality of number translation. This principle continues to be reflected in cost recovery arrangements for 0800 numbers. NTS SPs already pay a fee for the advantages of access by consumers to these numbers. BT further submitted that there is no barrier to this charge being applied by TCPs for access to the number translation advantages of 0870 number ranges and that this is the approach which is being adopted by BT's own 0870 services.

Variation of termination charges according to point of interconnection

- 4.20 BT submitted that the 0870 termination charge should not vary according to the network elements used in the TCP network; any costs should be borne by the TCP and NTS SP.
- 4.21 Opal Telecom submitted that termination charges should vary according to the depth of interconnection. Easynet submitted that they are satisfied with termination charges for single tandem interconnection.
- 4.22 THUS submitted that calls which use fewer BT network elements should have a lower termination charge. THUS does not believe that average termination charges are appropriate in this context and that the rates offered by BT must accurately reflect the cost of conveyance across BT's network.

- 4.23 FlexTel submitted that termination charges should not vary with points of interconnect. The cost of call conveyance should be the determined termination rate plus transit costs paid by the OCP.

Comments on the proposed termination charges

Low charges as proposed by BT

- 4.24 [X] has said that moving away from revenue-sharing for 0870 calls [X].
- 4.25 Cable & Wireless, THUS and COLT have said that the impact of such charges on BT would be much less because of its strong position in the retail origination market and this would damage competition in the NTS hosting/termination market.
- 4.26 TCPs providing international call services on 0870 numbers (such as [X] and [X] and [X]) have said that these would no longer be viable at the charges proposed by BT. The possibility of such services migrating to other number ranges would incur additional costs and, in [X]'s view, inconvenience and confusion for customers.
- 4.27 Some TCPs have said that existing 0870 services would have to be withdrawn at the charges proposed by BT.

Medium charges as proposed by IVResponse and Invomo

- 4.28 BT submitted that it would not be possible to support geographic retail prices and include 0870 calls in call packages at these levels of termination charges.
- 4.29 [X] have said that they would be unable to continue providing international services on 0870 numbers at the lower alternative charges proposed by Invomo and IVResponse.
- 4.30 [X] submitted that [X]. They further submitted that if reciprocal 0870 termination charges at these levels are enforced then [X].
- 4.31 [X] submitted that the charges proposed by Invomo reflected the closest to a fair balance between the parties, while anything lower [X] and confusion amongst their customers.

High charges as proposed by FlexTel

- 4.32 BT submitted that it would not be possible to support geographic retail prices and include 0870 calls in call packages at these levels of termination charges.
- 4.33 [X].
- 4.34 [X][X] submitted that [X]. They submitted that the all the proposed charges but FlexTel's are flawed.

Geographic charges

- 4.35 BT submitted that it cannot deliver a geographic retail charge if it is not supported by a geographic-based termination charge (i.e. a termination charge based on the termination charge for geographic calls).

- 4.36 Gamma Telecom submitted that if calls to 0870 and geographic numbers are to receive the same revenue, then the termination charges for 0870 calls must approximate those for geographic calls, otherwise OCPs will either have to charge more for the 0870 calls or make a loss.
- 4.37 Cable & Wireless submitted that any charges based on geographic termination assume calls are delivered on a far-end handover basis, arguing that this is inappropriate for 0870 where “industry has agreed” that the most pragmatic solution for the routing of 0870 is near-end handover. Cable & Wireless and THUS submitted that geographic termination charges do not reflect the additional network usage caused by delivery on a near-end handover basis. Cable & Wireless further added that any charge Ofcom sets which does not at the very least reflect the costs incurred by terminating operators clearly fails Ofcom’s regulatory duty to carry out Ofcom’s functions in a manner which, so far as practicable, does not favour one electronic communications network, service or facility over another or one means of providing such a network, service or facility over another.³⁰
- 4.38 Opal Telecom submitted that 0870 numbers and geographic numbers should be treated in an equivalent manner. The wholesale termination charge for 0870 numbers should be set at the same level as the geographic call termination charge. It argued that it “cannot be right that an originating operator should have to pay more to terminate a call to an 0870 number than a geographic number when the operator is required to charge the same retail rate for calls to these numbers”.
- 4.39 [3<] submitted that setting 0870 termination charges at the same level as geographic charges [3<].

Identification of relevant benchmarks

- 4.40 FleXtel suggested that a comparable benchmark was termination charges for 0800 numbers. 0800 numbers are free to the caller and the NTS SP pays the TCP who pays the originator for the call.
- 4.41 Gamma Telecom submitted that an appropriate benchmark for assessing reasonableness is the pricing applied to 03 numbers which retail at geographic charges.
- 4.42 BT submitted that a relevant benchmark is the fixed geographic call termination charge. BT submitted that any rate above comparable geographic termination charges would erode the profitability of existing flat rate call packages.

³⁰ Cable & Wireless 24 November 2008 response to our information request

Section 5

Dispute resolution powers, statutory obligations and regulatory principles

- 5.1 Sections 185 to 191 of the Communications Act 2003 (the “Act”) set out Ofcom’s dispute resolution powers. They apply to disputes relating to the provision of network access and to other disputes relating to the rights and obligations conferred or imposed by or under Part 2 of the Act. Section 186 of the Act requires Ofcom to resolve a dispute referred to it under section 185 once it has decided in accordance with section 186(2) to handle the dispute. Ofcom’s remedial powers for resolving disputes are set out in section 190 of the Act.
- 5.2 Ofcom’s dispute resolution powers in the Act derive from the European Common Regulatory Framework, in particular, Directive 2002/12/EC on the common regulatory framework for electronic communications networks and services (the “Framework Directive”) and Directive 2002/19/EC on access to, and interconnection of, electronic communications networks and associated facilities (the “Access Directive”). In accordance with Article 5(4) of the Access Directive, Ofcom is required to resolve disputes in relation to access and interconnection in accordance with the policy objectives of Article 8 of the Framework Directive.
- 5.3 Article 5(4) of the Access Directive and Article 8 of the Framework Directive have been implemented in section 4 of the Act. Under section 4(2) of the Act, Ofcom is required to act in accordance with the six Community requirements when exercising its functions under the Act in relation to disputes referred to it under section 185. The six Community requirements set out in section 4(3) – (10) give effect, amongst other things, to the requirements of Article 8 of the Framework Directive and are to be read in accordance with them.
- 5.4 In summary, the Community requirements are:
- to promote competition in communications markets;
 - to secure that Ofcom contributes to the development of the European internal market;
 - to promote the interests of all European Union citizens;
 - to act in a manner which, so far as practicable, is technology-neutral; to encourage, to the extent Ofcom considers it appropriate, the provision of network access and service interoperability for the purposes of securing efficiency and sustainable competition in communications markets and the maximum benefit for the customers of communications network and services providers; and
 - to encourage such compliance with certain international standards as is necessary for facilitating service interoperability and securing freedom of choice for the customers of communications providers.
- 5.5 In the context of this dispute, the following aspects of the policy objectives of Article 8 of the Framework Directive are of particular note in relation to the reading and application of the Community requirements:

- the promotion of competition is to be achieved by, *inter alia*, ensuring that users derive maximum benefit in terms of choice, price and quality and that there is no distortion of competition;
 - the contribution to the development of the internal market is to be achieved by, *inter alia*, ensuring that, in similar circumstances, there is no discrimination in the treatment of undertakings providing electronic communications networks and services; and
 - the promotion of the interests of European Union citizens is to be achieved by, *inter alia*, ensuring a high level of protection for consumers in their dealings with suppliers and promoting the provision of clear information, in particular requiring transparency of tariffs and conditions for using publicly available electronic communications services.
- 5.6 Ofcom's general statutory duties set out in section 3 of the Act also apply to Ofcom's dispute resolution function under Chapter 3 of Part 2 of the 2003 Act.
- 5.7 Section 3(1) of the Act sets out Ofcom's principal duties in carrying out its functions:
- “(a) to further the interests of citizens in relation to communications matters; and
 - (b) to further the interests of consumers in relevant markets, where appropriate, by promoting competition.”
- 5.8 The objectives which, by virtue of its principal obligations, Ofcom is required to secure in the carrying out of its functions include, according to section 3(2) of the Act:
- “(a) the optimal use for wireless telegraphy of the electro-magnetic spectrum;
 - (b) the availability throughout the United Kingdom of a wide range of electronic communications services;
 - (c) the availability throughout the United Kingdom of a wide range of television and radio services which (taken as a whole) are both of high quality and calculated to appeal to a variety of tastes and interests;
 - (d) the maintenance of a sufficient plurality of providers of different television and radio services;
 - (e) the application, in the case of all television and radio services, of standards that provide adequate protection to members of the public from the inclusion of offensive and harmful material in such services; and
 - (f) the application, in the case of all television and radio services, of standards that provide adequate protection to members of the public and all other persons from both –
 - (i) unfair treatment in programmes included in such services; and

- (ii) unwarranted infringements of privacy resulting from activities carried on for the purposes of such services.”

5.9 Section 3(3) of the Act provides that in performing its principal duties, Ofcom must have regard, in all cases, to:

“(a) the principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed; and

(b) any other principles appearing to Ofcom to represent the best regulatory practice.”

5.10 Section 3(4) of the Act sets out a number of principles which Ofcom must have regard to in performing its principal duties where it appears to Ofcom that they are relevant, including the desirability of promoting competition in the relevant markets and the desirability of encouraging investment and innovation in the relevant markets.

5.11 In performing the principal duty of furthering the interests of consumers specifically, section 3(5) of the Act provides that Ofcom must have regard, in particular, to the interests of those consumers in respect of choice, price, quality of service and value for money.

5.12 Where it appears to Ofcom that any of its general duties under section 3 of the Act conflict in the resolution of a dispute, Ofcom has the discretion to secure that the conflict is resolved in the manner it thinks best in the circumstances.³¹ Similarly, Ofcom has the discretion to secure that any conflict of the Community requirements set out in section 4 of the 2003 Act are resolved in the manner it thinks best in the circumstances.³² Where it appears to Ofcom in the exercise of its dispute resolution functions that any of its general duties under section 3 of the 2003 Act conflict with one or more of its duties under section 4 of the 2003 Act, priority is given to the duties set out in section 4 of the 2003 Act.³³

5.13 Having taken account of representations from the parties, the regulatory objectives and Community requirements which Ofcom considers to be relevant to this dispute are set out in the summary tables in section 7 below³⁴. Key among them are those concerned with consumer interests and the promotion of competition.

³¹ Section 3(7) of the 2003 Act. Note that where Ofcom resolves a conflict in an important case between the duties in sections 3(1)(a) and 3(1)(b) it must publish a statement setting out the nature of the conflict; the manner in which they have resolved to resolve it; and the reasons for their decision to resolve it in that manner (section 3(8) 2003 Act). A matter is ‘important’ if it involves a major change in the activities carried on by Ofcom; or it is likely to have a significant impact on persons carrying on businesses in any of the relevant markets; or it is likely to have a significant impact on the general public in the UK or a part of the UK; or it otherwise appears to Ofcom to have been of unusual importance.

³² Section 4(11) of the 2003 Act.

³³ Section 3(6) of the 2003 Act.

³⁴ BT made representations that a relevant principle is set out at Section 3(4) of the 2003 Act that Ofcom must have regard to the desirability of preventing crime and disorder, in this case fraud, referring to AIT. However, we do not consider this principle to be relevant in this dispute as AIT is not fraud.

5.14 Ofcom also exercises its regulatory functions according to the following regulatory principles:

- Ofcom will regulate with a clearly articulated and publicly reviewed annual plan, with stated policy objectives;
- Ofcom will intervene where there is a specific statutory duty to work towards a public policy goal which markets alone cannot achieve;
- Ofcom will operate with a bias against intervention, but with a willingness to intervene firmly, promptly and effectively where required;
- Ofcom will strive to ensure its interventions will be evidence-based, proportionate, consistent, accountable and transparent in both deliberation and outcome;
- Ofcom will always seek the least intrusive regulatory mechanisms to achieve its policy objectives;
- Ofcom will research markets constantly and will aim to remain at the forefront of technological understanding; and

5.15 Ofcom will consult widely with all relevant stakeholders and assess the impact of regulatory action before imposing regulation upon a market.

Section 6

Ofcom's analysis and reasoning

Approach to resolving these disputes

6.1 As set out at paragraph 3.11 above the scope of this dispute is as follows:

“The scope of the dispute is to assess the level of charges payable by BT for call termination on 0870 numbers in respect of each of the TCPs included in the dispute. Specifically, Ofcom will consider whether:

With effect from the date that the changes to the regulatory regime applicable to calls to 0870 numbers as set out in the NTS Statement come into effect, the termination charges proposed by BT or, where appropriate, the TCPs are reasonable terms and conditions for the purposes of the end-to-end connectivity obligation.

In considering whether the proposed charges constitute reasonable terms and conditions, Ofcom will consider the responsibility of operators for additional interconnection charges, including transit (TWIX) and circuit charges.”

6.2 In the TRD core issues judgment of 20 May 2008, the CAT gave guidance as to the approach that Ofcom should take in resolving disputes in accordance with its statutory duties and the Community requirements. In the light of that guidance and the CAT's interpretation of the reasonableness requirement in the end-to-end connectivity obligation as set out in paragraph 2.36 above, our approach to resolving this dispute can be broken into the three steps set out below.

Step (i) – consideration of BT's proposed termination charges

6.3 Under this step, we have looked at the reasons for BT's proposed change to its termination charges for 0870 calls and considered whether those reasons are justified by asking:

- Do the revised terms and conditions strike a fair balance between the parties?
- Are the revised terms and conditions reasonable in the light of Ofcom's regulatory objectives and Community requirements under sections 3 and 4 of the Act which are relevant to this dispute?

Step (ii) – consideration of the TCPs' alternative proposals

6.4 Under this step, we have examined the reasons given by the TCPs for objecting to the proposed change and considered whether those reasons are justified by asking:

- Do the alternative terms and conditions proposed by the TCPs strike a fair balance between the parties?

- Are the alternative terms and conditions reasonable in the light of Ofcom's regulatory objectives and Community requirements under sections 3 and 4 of the Act which are relevant to this dispute?

Step (iii) – consideration of the termination charges appropriate to resolve this dispute

- 6.5 Ofcom does not consider that the charges proposed by BT or the various alternatives proposed by other parties in dispute are appropriate for resolving this dispute (see from paragraph 6.8). We therefore propose to resolve the dispute by determining the appropriate termination charges.
- 6.6 In assessing what those charges might be, we have had regard to the following factors:
- the relationship of price to cost;
 - benchmarking;
 - identification of relevant regulatory objectives in sections 3 and 4 of the Act and Community requirements and the extent to which the proposed resolution achieves them; and
 - consistency of approach. In particular:
 - whether there are relevant ex ante obligations which affect the position of the parties on the market; and
 - whether the proposed action is consistent with Ofcom's approach on similar issues in the past (whether in relation to matters which pre- or post-date the dispute).³⁵
- 6.7 Ofcom's consideration of BT's proposed 0870 termination charges is set out at paragraphs 6.8 to 6.81 below. The 0870 termination charges proposed by other parties in dispute are discussed at paragraphs 6.82 to 6.101 below. Ofcom's analysis of the 0870 termination charges appropriate for resolving this dispute is set out from paragraphs 6.102 below.

Step (i) – consideration of BT's proposed termination charges

Background

- 6.8 BT's OCCN of 4 May 2007, in which it set out the termination charges that it proposed to pay to TCPs for 0870 calls, was issued in response to Ofcom's policy proposal to restore the link between retail charges for 0870 calls and those for geographic calls. BT considers that implementation of such a policy is only possible if the termination charges for such calls are based on geographic call charging principles.
- 6.9 BT's proposed 0870 termination charges are based on average termination charges for geographic calls in March 2007. BT broke down the overall average charge to Single Tandem and DLE interconnect termination charges in line with the actual

³⁵ http://www.catribunal.org.uk/files/Judgment_TRDs_200508.pdf, paragraphs 175 onwards.

geographic terminating traffic which was terminated via these methods during March 2007³⁶.

- 6.10 In its response to our 10 November 2008 information request, BT updated the termination charges it proposed using the same methodology. These are set out in

³⁶ BT's dispute referral 6 July 2007

Table 4 above.

Views of the parties

- 6.11 In its response to the 2008 consultation on 0870³⁷, BT stated that it supported the principle of geographic based call charges for 0870 calls (including their eligibility for unmetered calling packages and other price discounts). BT submitted that its proposed termination charges have been set at a level in order to enable it to align charges for 0870 calls with those for geographic calls. It has further argued that because NTS traffic is “owned” by the TCPs, they should have the responsibility for meeting transit and circuit charges. To hold otherwise would be likely to result in a change in the routing principle for 0870 calls from near-end to far-end handover and that would result in very large levels of circuit re-arrangements both at the interconnect level and internally.
- 6.12 On 16 January 2009, BT put 0845 and 0870 calls into its consumer calling packages. In the case of 0870 calls, BT informed us that this was done in anticipation of the 0870 policy changes and the determination of these disputes.
- 6.13 In their individual responses to our November 2008 information requests, [X] and [Y] submitted, however, that BT’s proposed charges are [X] also, the TCPs contend, this will result in a wealth transfer from the TCPs to BT which unfairly favours BT’s origination business.

Step (i) – analysis and conclusion

- 6.14 In assessing whether the termination rates proposed by BT strike a fair balance between the parties and are reasonable in the light of Ofcom’s regulatory objectives and Community requirements, we have considered first the costs that are incurred in terminating an 0870 call and whether they should be recovered by the TCP through the termination charge.
- 6.15 The costs of terminating an 0870 call can be broken down into three distinct categories. These are:
- **geographic call termination costs**, namely those costs which would be incurred by the TCP to terminate an equivalent geographic call under far-end handover arrangements
 - the **additional conveyance costs** incurred by the TCP to terminate an 0870 call arising from “near-end handover”
 - certain **specific additional costs** associated with the termination of an 0870 calls relating to:
 - interconnection circuits
 - transit (TWIX)
 - IN DIP access
 - outpayments which may under current revenue sharing arrangements be made by the TCP to an SP.

37 <http://www.ofcom.org.uk/consult/condocs/0870calls/responses/BT.pdf>

- 6.16 In establishing whether these costs should be recovered through 0870 termination charges, we have had regard to the objectives of Ofcom's 0870 policy of re-establishing the link between charges for 0870 calls and those for geographic calls. These objectives, improving pricing transparency in order to achieve consumer and competition benefits, dovetail with key aspects of Ofcom's statutory duties and the Community requirements, as discussed below. We consider that those objectives are most likely to be achieved if costs are recovered, as far as possible, in a way consistent with the recovery of costs of the termination of geographic calls, thereby enhancing BT's incentives to align its retail charges for 0870 calls with those for geographic calls.
- 6.17 We have also considered the extent to which Ofcom's principles of pricing and cost recovery set out below are relevant and whether they provide good grounds for each of the categories of cost identified above to be recovered in a different way to that suggested by the objective of aligning prices.
- 6.18 These principles of pricing and cost recovery were developed by Oftel in the context of number portability, endorsed by the Monopolies and Mergers Commission³⁸ and have subsequently been used by Ofcom in analysing various pricing issues.³⁹ The framework provides a structured way to identify relevant considerations and assess trade-offs between them.
- 6.19 The principles are as follows:
- **Cost causation:** the cost should be recovered from those whose actions cause the costs to be incurred at the margin;
 - **Distribution of benefits:** the costs should be recovered from the beneficiaries, especially where there are externalities;
 - **Practicability:** the mechanism for cost recovery needs to be practicable and relatively easy to implement;
 - **Effective competition:** the mechanism for cost recovery should not undermine or weaken the pressure for effective competition;
 - **Reciprocity:** where services are provided reciprocally, charges should also be reciprocal; and
 - **Cost minimisation:** the mechanism for cost recovery should ensure that there are strong incentives to minimise costs.
- 6.20 As it is usually efficient for charges to reflect costs, the cost causation principle will normally carry most weight in the assessment of where costs should be recovered, unless there are good reasons for not doing so in a particular case. In this case, for the reasons set out below, cost causation does not always provide a clear answer as

³⁸ *Telephone Number Portability: A Report on a reference under s13 of the Telecommunications Act 1984* (MMC, 1995).

³⁹ See for example: *Determination under Section 190 of the Communications Act and Direction under Regulation 6(6) of the Telecommunications (Interconnection) regulations 1997 for resolving a dispute between Orange Personal Communications Services Ltd. ('Orange') and British Telecommunications plc ('BT') concerning the cost sharing arrangements for Customer Sited Interconnect ('CSI') links connection and rental charges*

to where the costs listed at paragraph 6.15 should be recovered. We have therefore considered the application of the other cost principles to the extent they are relevant.

- 6.21 In the context of this dispute, we note that the goal of aligning retail 0870 and geographic call prices is intended to improve transparency of retail pricing for 0870 calls. This, in turn, should enhance competition by increasing the ability of consumers to exercise choice. Therefore, the application of the effective competition principle suggests in each case an outcome consistent with the objective of aligning prices, namely that the cost should be recovered on the same basis as for geographic call termination in order to encourage alignment of retail charges.
- 6.22 We consider the cost recovery question in relation to each of three cost categories we have identified in paragraphs 6.23 to 6.61 below, by reference to the policy objective of aligning 0870 and geographic call charges and the application of the cost recovery principles. We do not refer explicitly to a cost recovery principle in relation to a particular cost element where we do not believe it is relevant.

Geographic call termination costs

- 6.23 Once a call to an 0870 number has been translated, the service required to terminate the call is equivalent to that required to terminate a call to a geographic number, save that an 0870 call may be conveyed further by a TCP than a geographic call because of near-end handover. Under far-end handover, a geographic call is handed over to the TCP at the switch nearest the destination customer. The costs of conveying a call from this switch to the customer then represent the minimum costs that a TCP would incur in terminating an 0870 call. Our starting point for calls which are handed over at a tandem switch is therefore the cost of far-end single-tandem termination for geographic calls. This then represents a "floor" for termination payments for 0870 calls handed over beyond the first single tandem switch to enable an efficient TCP to recover the relevant costs of terminating such calls through the termination charge, as with a geographic call.
- 6.24 Reflecting the cost elements which are common to 0870 call termination and geographic call termination in their respective termination charges in the same way is most likely to result in achievement of the objective of aligning the retail prices of geographic and 0870 calls.
- 6.25 In addition, it is likely to achieve a good balance between Ofcom's six principles of pricing and cost recovery, set out above, because these principles underpin the current interconnection charging regime, which governs geographic termination charges.
- 6.26 We also note that a number of providers, including BT, have said that it is appropriate for the termination charges for 0870 and geographic calls to be aligned, at least as a starting point, although they differ as to the need for adjustment to reflect specific features of 0870 calls.

Additional conveyance costs associated with near-end handover

- 6.27 As noted above, the costs of geographic call termination do not reflect the additional conveyance costs incurred by the TCP in respect of an 0870 call arising from near-end hand-over.
- 6.28 Note that these additional costs are costs which would have been borne by the OCP in the case of a far-end handover call. If a call from BT to a TCP is made using near-

end handover rather than far-end handover, BT (the OCP) will generally require less inter-tandem conveyance capacity and will incur lower costs as a result. This conveyance is instead provided (or paid for) by the TCP, which incurs higher costs.

- 6.29 Making an allowance for the additional costs of near-end handover in 0870 termination charges is therefore consistent with the objective of aligning the retail prices of geographic and 0870 calls.
- 6.30 In addition, to do so is likely to achieve a good balance between Ofcom's six principles of pricing and cost recovery, set out above. Allowing for the additional cost to the TCP arising from near-end handover is consistent with the principle of cost causation to the extent that it means that charges will more closely reflect the usage made of the networks of the OCP and TCP respectively. By supporting the alignment of retail 0870 and geographic call prices, it will also promote the principle of effective competition.
- 6.31 Accordingly, our provisional view is that the costs relevant to the assessment of the termination charge for 0870 calls should include an adjustment to geographic termination costs which takes account of near-end handover.

Specific additional costs in dispute

- 6.32 As noted at paragraph 3.11 above, one of the issues in the scope of the dispute is whether certain additional cost elements associated with the termination of an 0870 call are the responsibility of BT, as OCP, or the TCP; and therefore whether they should be recoverable through the 0870 termination charge. These costs are:
- circuit charges;
 - transit (TWIX);
 - IN DIP access; and
 - outpayments which may be made to the SP under existing revenue-sharing arrangements.

Circuit charges

- 6.33 The circuits in question are the interconnection circuits connecting the OCP's network to the TCP's network. The current convention for NTS calls is that the TCP pays for the interconnection circuits, whilst for geographic calls the OCP pays for the interconnection circuits. This is because under current NTS regulation, the TCP purchases origination from BT (as OCP) and as such the interconnection point between networks is deemed to be at the edge of BT's network. The TCP's network therefore extends to include the "links" between networks.⁴⁰ For geographic calls, however, the opposite applies: BT, as OCP, purchases termination from the TCP and therefore interconnection takes place at the "edge" of the TCP's network and BT owns the "links".

⁴⁰ Links provide the handover capacity from the BT network and the TCP's Points of Connection. They also include circuits which BT has installed for traffic management purposes where interconnection capacity sought by operators exceeded the limits BT had laid down for operator switched traffic through any one switch.

- 6.34 In line with the policy objective of aligning prices and the effective competition principle, it would appear appropriate for BT as OCP to bear the costs of interconnection circuits so that, as far as possible, the underlying costs of call origination for 0870 calls and geographic calls are aligned.
- 6.35 This is also consistent with cost causation to the extent that the current arrangements for geographic calls set out in paragraph 6.23 above reflect the application of the cost causation principle.
- 6.36 We have also considered whether it would be practicable to depart from the current arrangements for NTS calls, where TCPs are responsible for circuit charges. Under the current arrangements, 0870 calls and all other NTS calls are conveyed over the same links. Were the responsibility for ownership of circuit charges for 0870 calls to change from TCPs to OCPs, OCPs would have to install additional links to carry 0870 traffic. This is because there is currently no basis for OCPs and TCPs to separate out the responsibility for charges associated with 0870 calls which are conveyed over existing links from circuit charges associated with other NTS calls which are also conveyed over these links. The requirement for new links would be a non-trivial investment for OCPs. This suggests that, in the interests of practicability and cost minimisation, circuit charges should remain the responsibility of the TCP (see step iii) from paragraph 6.102 for our proposed methodology for assessing interconnection circuit costs).
- 6.37 However, these principles can be made consistent with the objective of aligning prices by including an allowance for the costs incurred by TCPs in relation to interconnection circuits in the termination charge for 0870 calls. This cost recovery mechanism is practicable and easy to implement. Furthermore, it should not undermine TCPs' incentives to minimise costs, given that TCPs will continue to own the interconnection circuit and be responsible for the costs actually incurred. Incentives to minimise costs are maintained because the allowance included in the charge is based on an appropriate benchmark rather than the TCPs own costs.
- 6.38 Taking these considerations in the round, we therefore consider that an allowance for the recovery of the costs associated with the provision of interconnection circuits for 0870 calls should be recoverable through the termination charge.

TWIX

- 6.39 TWIX is the term for the transit charge levied by a transit operator for a call that is originated on the network of an OCP and routed via another operator's network for termination on the network of a TCP, when the transit operator is neither the OCP nor the TCP.
- 6.40 We understand that where 0870 calls are originated on BT's network, transit is not required and therefore the TWIX does not arise. In resolving this dispute, we nevertheless consider it appropriate to consider whether TWIX should be recovered from the OCP or the TCP for the following reasons. First, the point was put in issue by BT's OCCN of 4 May 2007 and in its dispute submission and is within the scope of the dispute (see paragraph 3.11 above). Second, where 0870 calls are originated on the network of another OCP, that OCP invariably has no contractual relationship with the TCP but instead contracts with the transit operator (often BT), which, in turn, contracts with the TCP for termination of the call. Hence, the TCPs, which are party to this dispute, may receive the 0870 termination charge, the subject of this dispute, from BT either in its capacity as OCP or as transit operator. In the latter case, responsibility for BT's TWIX will have an impact on the termination charge the TCPs

receive and therefore is a matter that needs to be resolved. Last, we are able to take account of the relevant interests of OCPs in this issue through the consultation and publication of this draft determination.

- 6.41 The TCP is currently responsible for the transit payment for 0870 calls terminated on its network. However, as regards geographic calls, it is the OCP which pays for transit. Accordingly, in line with the objective of aligning prices and the effective competition principle, it would appear appropriate for transit charges to be borne by the OCP.
- 6.42 This also appears to be consistent with the principle of cost causation. As it is the OCP that would decide how to route the call using a transit service, perhaps choosing between different competing transit providers, it is a result of the OCP's actions that transit charges are incurred.
- 6.43 Historically, the overriding principle of who bears responsibility for these costs was that the CP that retained the revenue should pay for transit. Thus the OCP paid for transit for geographic calls as it received the retail revenue (after deduction of costs) to originate the geographic call, and the TCP paid for transit for NTS calls as it received the retail revenue for terminating the NTS call. Under the revised regulatory arrangements for 0870 calls set out in the NTS Policy Statement, the OCP will retain any surplus left after deducting costs from the retail revenue for calls to 0870 numbers rather than retaining only a cost-based origination charge, as it would under the current arrangements (in particular, the NTS "call origination condition"). This suggests that the costs associated with the payment of transit charges should be included within the costs of the OCP as it will be the party to benefit from the additional revenues under the new regulatory framework. This is consistent with the principle of distribution of benefits.
- 6.44 In referring this dispute BT submitted that, although the route taken by the call is the decision of the OCP, the call is still an NTS call and may need an IN DIP. Both current capacity and existing routing plans are in place to route calls efficiently to the TCP's nominated switches where these IN platforms sit. BT stated that changing the commercial position on who pays the transit is likely to involve a large amount of circuit and routing re-arrangements for both BT and TCPs, since the OCP would be likely to try to reduce the transit charge by routing calls differently.

- 6.45 As noted above, TCPs currently pay TWIX for 0845 and 0870 calls while OCPs are responsible for it in relation to 0844 and 0871 calls. We are not aware that this has led to different interconnection arrangements for 0845/70 and 0844/71 calls respectively. Instead, available evidence suggests that OCPs have routing plans which deal with NTS calls in general.⁴¹ We therefore consider there is unlikely to be mass re-circuiting if responsibility for TWIX changes from the TCP to the OCP for 0870 calls. If it were the case that some call re-routing would result from Ofcom's proposal, then it may be possible for OCPs to use their existing 0844/71 capacity for 0870 traffic.
- 6.46 Furthermore, many operators are in practice both originators and terminators of traffic and so use interconnection circuits to convey traffic in both directions. The share of interconnection circuit costs borne by the interconnecting operator will then be determined according to the net amount of traffic sent to or received from BT and, where traffic is approximately in balance, the net effect of changing responsibility from TCP to OCP will be approximately zero. There may then be no net charging implications of changing responsibility for circuit costs which adds weight to Ofcom's view that mass rearrangement of circuits would not arise from making TWIX the responsibility of the OCP for 0870 calls
- 6.47 We also note that although 0870 call volumes remain material, they have fallen significantly in recent years - approximately 50% lower than two years ago.
- 6.48 Finally, in reaching a view on where responsibility for TWIX should lie for 0870 calls, we have also taken into account the fact that that our proposed termination rates identified under step (iii) vary according to the extent of use made of the OCP's network up to the point of handover (which, for NTS calls, is selected by the TCP).
- 6.49 Where the OCP hands 0870 calls over to the TCP before the Single Tandem layer, the proposed rate is adjusted to reflect the fact that the TCP bears the additional cost of the local-tandem conveyance (arising from near-end DLE handover). Where calls are handed over at the far-end double tandem layer, then the proposed rate is equivalent to the minimum cost of termination at the far-end for a geographic call, as described above at paragraph 6.23, plus circuit charge costs.
- 6.50 This 'ladder' of charges provides appropriate incentives for the TCP to interconnect efficiently with the OCP or transit operator. The adjustments for different points of handover minimise any incentive for the TCP to reroute 0870 call traffic through alternative interconnection circuits/points.
- 6.51 In conclusion, we think it unlikely that significant costs will be incurred as a result of the proposed arrangements for TWIX in the light of:
- available evidence on routing plans for calls to the 0844/0871 ranges;
 - the possibility that the charging implications for CPs that both originate and terminate 0870 calls may net out to zero or offset each other to leave, at most, a relatively small imbalance;

⁴¹ This point was confirmed by conversations with THUS, Cable & Wireless and BT on 19 February 2009. We understand that the only exception to this general rule is where a CP asks for certain types of NTS traffic to be re-routed for specific purposes/events, such as high volume phone-ins, where extra resilience is required.

- the decline in 0870 traffic and
- the new proposed “ladder” of charges.

6.52 We therefore consider that transit charges should fall to the OCP.

IN DIP

6.53 IN DIP is an industry term for the translation of an NTS number into a geographic number to facilitate call termination on the destination number. Calls to 0870 number ranges will continue to require number translation after the changes to the regulatory regime applicable to the 0870 number range. This is an activity which is necessarily performed by the 0870 number range owner (i.e. the TCP), to enable the call to be terminated at the correct geographic destination.

6.54 Currently, the IN DIP is carried out on the TCP’s network, for which the costs are borne by the TCP. Calls to 0870 number ranges will continue to require number translation via the IN platform after the changes to the regulations for the 0870 number range. It is BT’s view that as this is an activity which is required by the 0870 number range owner, to enable the call to be terminated on their network, then the charge for this activity should be the responsibility of the TCP only. BT submitted that a number of TCPs have indicated that they consider these charges to be the responsibility of the OCP.

6.55 IN DIP costs are only incurred by calls to NTS numbers (and are borne by the TCP) and do not arise in geographic calls. Accordingly, its recovery through the termination charge for 0870 calls would be out of line with the termination charging arrangements for geographic calls and, since it is not an immaterial cost, may prejudice the achievement of the policy objective. Likewise, the effective competition principle indicates that these costs should be borne by the TCP.

6.56 Cost causation does not clearly determine who should pay the cost of IN DIP. On the one hand, it appears appropriate for IN DIP costs to be included in the costs of the TCP (since it is caused by the TCP providing an 0870 number) and appropriate for that cost to be recovered from the NTS SP, since it has made the IN DIP necessary by choosing to locate its service on an NTS number range. On the other hand, it might be argued that IN DIP costs are only incurred because a caller consumer (a customer of the OCP) calls an NTS number.

6.57 Likewise, the outcome of the distribution of benefits principle is neutral, given that arguments can be made either way as to whether the beneficiary of number translation is the NTS SP or the caller.

6.58 Accordingly, in line with the objective of aligning prices and the effective competition principle, we have therefore concluded that IN DIP costs should be borne by the TCPs and should not be recovered through the termination charge.⁴²

⁴² Should a service provider not be willing to pay the higher price for 0870 hosting services which would result from IN DIP costs being passed through, there are different price points available to it on other NTS number ranges. These achieve a different balance of cost recovery between callers and service providers and enable service providers to select the balance which they regard as most reflective of the balance of benefits between the caller and the NTS SP. For a more detailed discussion of the implications of this for market definition see the NCCN500 statement published 1 August 2008.

Outpayments

- 6.59 Under current revenue sharing arrangements, the TCP may make an outpayment to an SP in respect of an 0870 call. This outpayment is equal to the difference between the revenues received by the TCP from the 0870 call (which are determined by competition in NTS hosting) and the network and other costs which the TCP has to cover. The current level of outpayments reflects the current, relatively high level of 0870 termination payments passed by BT to the TCP. Enabling the TCP to recover outpayments to SPs through the termination charge would undermine the policy objective of aligning such charges with geographic calls. As explained in paragraph 6.93 below, such an approach would deter BT incorporating 0870 calls in call packages because of the risk of “arbitrage” (artificial inflation of traffic). We therefore consider that outpayments to SPs should not be recovered through the termination charge.

Conclusion on costs that may be recovered through the 0870 termination rate

- 6.60 In the light of our considerations above, we conclude that an appropriate termination charge should be sufficient to recover:
- i) the costs which would be incurred by the TCP to terminate an equivalent geographic call under “far-end handover” arrangements
 - ii) the additional conveyance costs incurred by the TCP to terminate an 0870 call arising from “near-end handover”
 - iii) an allowance for the recovery of the costs associated with the provision of interconnection circuits for 0870 calls
- 6.61 BT’s proposed charges make some allowance for i) although the amount is somewhat lower than we regard as appropriate. This appears to be a result of the method which BT has used to calculate termination costs, which is based on average outturn termination charges for geographic calls and so does not necessarily reflect a traffic pattern which is representative of 0870 calls. Moreover, BT’s proposal makes no allowance for ii) or iii). Our provisional view, therefore, is that the rates proposed by BT do not strike a fair balance between the parties.

Ofcom’s statutory duties and the Community requirements

- 6.62 Our assessment of the extent to which the termination charges proposed by BT will contribute to the achievement of each of the relevant regulatory objectives and Community requirements is set out below and in summary form in Table 12 below. This assessment is informed by our analysis of the NTS hosting/termination market set out in section 3 above.
- 6.63 We consider BT’s proposed rates in the light of:
- our duties to further the interests of consumers;
 - our duties to promote competition; and
 - other considerations to which we must have regard, such as the desirability of encouraging investment and innovation in relevant markets and certain Community goals such as development of the European internal market.

Furthering the interests of consumers

- 6.64 As noted above, BT has said that, in line with Ofcom's policy proposal, its proposed rates were set at a level to enable it to align its charges for 0870 calls with those for geographic calls. A key objective of Ofcom's 0870 policy proposal was to improve pricing transparency and consumer protection for consumers originating 0870 calls. It is therefore necessary to consider the extent to which the termination rates proposed by BT will contribute to that objective.
- 6.65 NTS SPs purchasing hosting services on the 0870 number range from TCPs are also consumers. In accordance with Ofcom's principal duty of furthering the interests of consumers in relevant markets, it is also necessary to consider the impact of BT's proposed rates on SPs.
- 6.66 As regards the setting of termination rates for 0870 calls, the interests of caller consumers and NTS SPs do not necessarily coincide. Setting termination rates in a way which will allow retail prices to be aligned with geographic call charges will increase pricing transparency for consumers but may require that NTS SPs pay TCPs for 0870 termination or incur costs by migrating to another number range. Furthermore, TCPs have argued that the migration of SPs to other number ranges will also incur costs for caller consumers, as result of the inconvenience and confusion that is likely to arise (for example, misdialling costs). We must therefore, in resolving the dispute, strike a fair balance between these competing consumer interests.
- 6.67 The charges that have been proposed by BT will enable BT to align retail prices for 0870 calls with geographic rates. The cheaper calls and enhanced transparency that will result will be in the interests of consumers originating calls on BT's network. However, BT's proposed termination rates for 0870 calls will operate to the disadvantage of TCPs and their customers, by reducing the size of termination payments. [3<], for example, has commented that BT's proposed rates would not cover its costs of terminating 0870 calls and that these would have to be passed on to its SP customers.
- 6.68 In the impact assessment for the NTS Statement, Ofcom concluded that the consumer benefits stemming from the 0870 proposals would be:
- An improvement in consumer welfare resulting from an improvement in pricing transparency for 0870 calls;
 - an improvement in consumer protection stemming from the cessation of revenue sharing, leading to a reduced risk of scams and better consumer confidence in 0870 numbers; and
 - some residual benefit to consumers from lower retail prices for 0870 calls.
- 6.69 It was estimated that the consumer benefits that will result from 0870 proposals would outweigh the costs associated with the migration of 0870 hosting services to other NTS number ranges (including misdialling costs). That calculation derived from an estimate (based on information provided by approximately 600 SPs in response to formal information requests and additional questionnaires from Ofcom) that between 45 – 55 % of 0870 traffic would migrate to other number ranges as a result of the proposals.

- 6.70 In the 2009 Statement Ofcom updated its impact assessment for the 0870 proposals and made a final assessment of its proposals. This reconfirmed the earlier finding about the likely level of migration resulting from the proposals. In reaching this view, Ofcom took into account that the 0870 termination rates proposed in this document and considering that they were set at a level that would enable BT to align 0870 call charges with those for geographic calls.
- 6.71 The level of termination charges is likely to determine the share of costs that TCPs seek to recover from SPs, which, in turn, may influence the incentives for SPs to migrate to other number ranges. Hence, if 0870 termination charges are unduly low, it is possible that the level of migrations may be higher than that estimated in the impact assessment. This would compromise the achievement of the anticipated benefits of the 0870 policy as well as resulting in higher migration costs.
- 6.72 It has not been possible in determining this dispute to establish the sensitivity of migration to the level of termination payments or to determine whether the termination charges proposed by BT are so low that the level of migrations would be higher than that anticipated, to an extent which would prejudice the consumer benefits of enhanced transparency stemming from geographically aligned prices for 0870 calls and the other benefits.. Furthermore, it is clear that they will not enable the TCPs to cover the three cost elements that we concluded in paragraph 6.61 should be recovered through 0870 termination charges. These costs are likely to be passed through to NTS SPs and may increase the TCPs' and NTS SPs' incentives to migrate to other number ranges. Given this, we are not satisfied that BT's proposed termination rates clearly strike a fair balance between the competing interests of caller consumers and NTS SP consumers.

Promoting competition

- 6.73 Another benefit of the pricing transparency that should flow from Ofcom's policy of re-establishing the link between retail charges for 0870 calls and those for geographic calls is that it should increase consumers' ability to exercise choice and so contribute to more effective competition. While BT's proposed rates were set at a level to enable it to price 0870 calls in line with its geographic call charges, we consider, for the reasons set out in paragraph 6.72 above, that there is a risk that the proposed rates are so low that they will increase migrations to other NTS number ranges to a level above that anticipated in the 0870 policy impact assessment. Since revenue-sharing remains available on these alternative NTS number ranges and there is less price transparency as a result, increased migration will reduce the effectiveness of pricing transparency on the 0870 number range and hence its potential to enhance competition.
- 6.74 A number of TCPs have argued that [>] and this will have an adverse effect on competition between TCPs. For the reasons set out at paragraph 6.80 below, on the currently available evidence we consider that they are unlikely to have a distortionary effect on competition between TCPs or cause an inefficient reduction in the range of services available.
- 6.75 Both Cable & Wireless and THUS have said that the impact of such termination rates on BT would be much less because of its strong position in the retail origination market and this would damage competition in the termination market. Such a contention would appear to depend on the assumption of anti-competitive conduct by BT. In the absence of any evidence to support that assumption, the risk of an adverse effect on competition in the provision of termination services perceived by certain TCPs has not been taken into account in this assessment.

- 6.76 Taking these considerations in the round, we are not satisfied that BT's proposed rates are set at a level that will effectively promote competition.

Other considerations under Ofcom's statutory duties and the Community requirements

- 6.77 BT's proposed termination rates will reduce TCPs' revenues from the termination of 0870 calls. In line with Ofcom's duty to have regard to the desirability of encouraging investment and innovation in relevant markets, we have considered what impact this might have on their willingness to invest and ability to innovate. We have concluded that, notwithstanding the reduced 0870 termination revenues and the increased costs they may face as a result of migrating to other number ranges, it should not have a material adverse impact for the following reasons.
- 6.78 The termination rate paid to the TCP does not restrict the maximum revenue which a TCP can earn from providing NTS termination/hosting services, even if the 0870 number range is considered in isolation. This is because the TCP would be able to recover costs not recovered from the OCP by requiring payments from NTS SPs on the 0870 number range. This is what happens on some other NTS number ranges where the termination charge is relatively low – most obviously 0800, where all costs are recovered from the NTS SP. Alternatively, NTS SPs can relocate to other number ranges where termination charges are higher and revenue sharing continues.
- 6.79 Certain TCPs (notably [X]) have said that their international call services on 0870 numbers would no longer be viable at the termination rates proposed by BT and should they migrate to other NTS number ranges, they would no longer be accessible to overseas callers. We have therefore considered, in line with Ofcom's Community requirements, whether BT's proposed termination rates would promote the development of the European internal market and the interests of all EU citizens.
- 6.80 Similar points were raised in response to Ofcom's 0870 policy proposals (see paragraphs 4.47 – 4.51 and Annex 4 of the April 2006 statement and paragraphs 4.4 and 4.9 of the May 2008 consultation). We estimated in 2006 that the switching of 0870 NTS to other NTS number ranges might result in a reduced level of international access, affecting at most 2.75% of 0870 traffic. Since then, overseas access to alternative number ranges has improved – all UK international carriers have opened access to the 0844 and 0871 ranges and are in the process of informing their overseas counterparts of their availability and costs. We therefore consider that the impact on overseas callers of BT's proposed termination rates is minimal and does not outweigh other considerations under Ofcom's regulatory objectives and the Community requirements, namely consumer protection and the promotion of competition, which are in the interests of all EU citizens, should they point to a different outcome.

Conclusion on application of Ofcom's statutory duties and Community requirements

- 6.81 In assessing whether the rates proposed by BT are reasonable in the light of Ofcom's statutory duties and the Community requirements, we have given particular weight to Ofcom's principal duty of furthering the interests of consumers in relevant markets, where appropriate by promoting competition. Given our findings in paragraphs 6.73 to 6.78 and 6.77 to 6.80 above, we are not satisfied that BT's proposed termination rates are reasonable.

Step (ii) – consideration of TCPs’ alternative proposals

Background

- 6.82 Alternative termination charges were proposed by Cable & Wireless, THUS⁴³, Band-X (now Invomo), IVResponse and FleXtel in response to BT’s OCCN. Cable & Wireless and THUS have subsequently withdrawn their proposals and so they have not been considered at this stage of the analysis. We have considered at step (iii) below the extent to which they may provide relevant benchmarks for the candidate termination rates we have calculated, as discussed from 6.153 below.
- 6.83 As detailed in section 4 above, in the individual responses to our November 2008 information requests, the TCPs have put forward a number of reasons for objecting to BT’s proposals, including:
- the charges unfairly benefit OCPs at the expense of the TCPs;
 - the charges will entrench BT’s strong position in retail call origination;
 - TCPs’ customers will either incur the costs of termination not covered by BT’s proposed charges and additional costs associated with the new contracts and billing systems that will be required, or additional marketing costs associated with migrating to a different number range;
 - the proposed charges are less than termination charges for geographic calls and do not reflect the conveyance costs incurred by the TCP as a result of near-end handover for 0870 calls;
 - the proposed charges would result in the withdrawal of international call services on 0870 numbers.

BT’s comments on alternatives proposed by other parties in dispute

- 6.84 BT has said that the alternative charges put forward by Band-X/Invomo, IVResponse and FleXtel would prejudice its ability to include 0870 calls in its existing flat rate call packages and would be likely to lead to an increase in the charges for such packages or the exclusion of certain calls from them. As noted previously, in anticipation of the changes to the 0870 policy, from 16 January 2009, BT’s flat-rate consumer calling packages include 0870 calls. [3<].

A single set of charges or different charges for different TCPs?

- 6.85 As set out above, alternative termination charges were proposed by various TCPs. While some TCPs indicated that they would be content with a single set of charges, others argued in favour of different charges, given the range of customers and services provided on the 0870 number range.
- 6.86 Our first step was therefore to consider whether it would be appropriate to set different termination charges for different (types of) TCPs. We considered whether it was appropriate to set different rates for the two broad types of operator identified above (island TCPs and network TCPs), or to set rates on a per-provider basis.

⁴³ Though these have been withdrawn.

- 6.87 We asked BT, first, whether such an option would be technically possible⁴⁴. BT confirmed that this would be technically feasible although it identified a number of problems with such an approach. In particular, BT submitted that the impact of per-provider 0870 termination rates would also have to be addressed for transit traffic and submitted that we would have to consider the impact differential rates would have on Number Portability of 0870 numbers.
- 6.88 We went on to consider whether differential charging would be consistent with the approach taken elsewhere. The call termination reciprocal charging agreement means that charges for geographic call termination are undifferentiated, to the extent that they are based on BT's costs and not those of the TCP. BT does not pay termination charges differentiated by TCP for calls on the 03, 08 and 09 number ranges.⁴⁵ To introduce differential charges for 0870 termination would not therefore be consistent with industry convention and regulatory practice elsewhere.
- 6.89 The pricing transparency that the 0870 policy is intended to promote could be compromised by setting differential 0870 termination charges. Differential 0870 termination charges might lead BT to charge different retail prices for 0870 calls to different TCPs. This would reduce price transparency for consumers calling 0870 numbers, who would face different retail charges for different 0870 numbers, at least some of which must therefore be different from the price of geographic calls.
- 6.90 We recognise that a single set of charges has the potential to lead certain TCPs to choose not to continue offering 0870 services. If so, it may be island operators that are more likely to exit, because of their higher network costs (see paragraph 2.22 above). The share of 0870 termination of such operators is estimated at no more than 15% (see paragraph 2.24 above). However, first, island operators may be able to continue providing 0870 services to the extent that they offer services better tailored to the needs of their NTS SPs and if such customers are willing to pay for their higher costs. Second, if they were to exit, it would arise from their cost inefficiency relative to fully interconnected network TCPs. Third, there is scope to migrate to other NTS number ranges within the NTS termination/hosting market. Fourth, even if existing TCPs were to switch away from 0870 NTS hosting, the segment would remain open to competition. Given low barriers to entry, TCPs could readily switch back to the 0870 number range in response to higher prices or lower costs of service provision. Therefore, on the currently available evidence we consider that a single set of charges for all NTS TCPs is unlikely to have a distortionary effect on competition or cause an inefficient reduction in the range of services available.
- 6.91 Taking these considerations into account, we have provisionally concluded that a single ladder of charges payable to all the TCPs which are party to this dispute is appropriate.

⁴⁴ BT's response to our November 2009 information request.

⁴⁵ Although differential rates are set for Mobile Network Operators (MNO's), those rates were the subject of a market review and a finding of SMP in termination held by the individual MNOs. Note also that in the last mobile charge control review statement it was stated that "Ofcom considers that it is desirable to move towards a position where a single charge control is applied to all MNOs", although H3G ended up with a slightly higher rate. See http://www.ofcom.org.uk/consult/condocs/mobile_call_term/statement/statement.pdf. See also http://www.competition-commission.org.uk/appeals/communications_act/mobile_phones_determination.pdf

Step (ii) – conclusion

- 6.92 Table 13 summarises our assessment of the extent to which the alternative termination charges proposed by the TCPs will contribute to the achievement of Ofcom's relevant regulatory objectives and Community requirements. That assessment is informed by the analysis of the NTS hosting/termination market set out in section 3 above.
- 6.93 All the termination rates proposed by the TCPs, are above a level at which revenue sharing could continue because they are above the no-arbitrage ceilings identified in Table 9 below (and therefore significantly above the level necessary to cover the costs which we deem should be recovered through the termination charge). As discussed at paragraph 6.93 below, rates above the no-arbitrage ceilings increase to an unacceptable level the risk that traffic to 0870 numbers could be artificially inflated so as to earn revenues as a result of arbitrage. Such a risk would prejudice BT's willingness to incorporate 0870 calls in its retail call packages and hence would undermine Ofcom's policy objective of restoring the link between charges for 0870 calls and geographic calls.
- 6.94 We remain of this view, notwithstanding BT's decision to include 0870 and 0845 calls in its calling plans from 16 January 2009, while revenue-sharing arrangements remain in place and while the payments received by TCPs in respect of 0870 calls under those arrangements are materially above the no-arbitrage ceiling.⁴⁶ BT has told us that the decision was taken in anticipation of the 0870 policy statement of 23 April 2009 and the determination of these disputes. In its response to our 30 January information request, BT submitted that it has put in place a number of mitigations [X].
- 6.95 [X].
- 6.96 [X].
- 6.97 BT continues to believe that the most effective, simple and justifiable process to mitigate the [X] AIT and arbitrage risks is to lower the termination payments on both number ranges to geographic levels as quickly as possible.
- 6.98 [X]. In addition we consider that if termination charges for 0870 calls are above the no-arbitrage ceiling, this may prevent BT from aligning 0870 retail rates with the retail rates for geographic calls for 0870 calls made outside of the calling plans.
- 6.99 As discussed above, the impact assessment for the 0870 policy found that the alignment of 0870 retail rates with geographic call prices would achieve consumer benefits which outweighed the cost disadvantages (for example the increased costs faced by TCPs and SPs choosing to migrate to other NTS number ranges). The enhanced transparency that will result will also improve consumers' ability to exercise choice and thereby promote effective competition.
- 6.100 On the basis that the termination charges proposed by the TCPs could prejudice the alignment of retail charges for geographic and 0870 calls by BT, this would

⁴⁶ As regards 0870 calls, the Day termination charge is currently 6.4909ppm. As regards 0845 calls, the risk of arbitrage appears to be less than for 0870 calls. BT's retail prices for 0845 calls outside of calling plans are cheaper than geographic calls. BT has also said that it will be reviewing the amount it pays for 0845 termination to reflect its revised rates.

compromise the achievement of the consumer and competition benefits identified as flowing from the 0870 policy.

- 6.101 For these reasons, we are not satisfied that the alternative charges strike a fair balance between the parties nor that they are reasonable in the light of the relevant regulatory objectives and Community requirements.

Step (iii) – consideration of the termination charges appropriate to resolve this dispute

Introduction

- 6.102 Ofcom has concluded that neither the 0870 termination charges proposed by BT, nor any of the alternatives proposed by other parties to the dispute, are appropriate for the purposes of resolving this dispute. Ofcom has therefore gone on to consider what 0870 termination charges are appropriate for resolving this dispute.

- 6.103 As set out at paragraph 6.6 above, we propose to resolve the dispute by determining the appropriate termination charges. In assessing what those charges might be, we have had regard to the following factors⁴⁷:

- the relationship of price to cost;
- benchmarking;
- identification of relevant regulatory objectives in sections 3 and 4 of the Act and Community requirements and the extent to which the proposed resolution achieves them; and
- consistency of approach. In particular:
 - whether there are relevant ex ante obligations which affect the position of the parties on the market; and
 - whether the proposed action is consistent with Ofcom's approach on similar issues in the past (whether in relation to matters which pre- or post-date the dispute).

Relationship of price to cost

- 6.104 We set out in paragraphs 6.23 to 6.61 above our approach to determining the costs that we considered should be recoverable by the TCP through the 0870 termination charge. We concluded an appropriate termination charge should be sufficient to recover:

- i) The costs which would be incurred by the TCP to terminate an equivalent geographic call under “far-end handover” arrangements
- ii) The additional conveyance costs incurred by the TCP to terminate an 0870 call arising from “near-end handover”

⁴⁷ http://www.catribunal.org.uk/files/Judgment_TRDs_200508.pdf, paragraphs 175 onwards

- 6.105 an allowance for the recovery of the costs associated with the provision of interconnection circuits for 0870 calls should be recoverable through the termination charge
- 6.106 We have used the wholesale charges payable to BT for geographic call termination as these are the costs incurred by TCPs in terminating a far-end handover call. These are subject to BT's Network Charge Control (NCC) which applies from October 2005 until September 2009.⁴⁸ The control was set to allow BT to recover, through its network charges, its efficiently incurred costs on a fully-allocated cost (FAC) basis including its cost of capital.
- 6.107 These charges enable us to estimate the geographic termination costs of an efficient network TCP. An island operator, which has few points of interconnection, is likely to pass a large proportion of 0870 calls which it translates to BT for termination, and, moreover, is likely to require conveyance over BT's network for relatively long distances, using significant amounts of single tandem or double tandem termination. A network operator which interconnects with BT at numerous locations will convey the translated call over its own network as far as possible. In this case, using BT's charges will allow the TCP to benefit from any greater efficiency which it has compared to BT or to an island operator and so gives good incentives for cost minimisation. We have therefore estimated geographic costs based upon NCC prices for BT's standard conveyance and termination services (which as noted in the previous paragraph are intended to reflect FAC).
- 6.108 There are two alternative methodologies for assessing the conveyance costs associated with near-end handover and other additional costs falling to the TCPs, one based on incremental costs and one based on fully allocated costs. In the following section we consider which of these alternatives represents the outcome that best fulfils Ofcom's various objectives in resolving disputes.

Identifying options for resolving the dispute

- 6.109 We have looked at two approaches to estimating the near-end adjustment, which generated two candidate sets of rates for resolving this dispute:
- **Option 1:** 0870 termination charges based on BT's wholesale charges for geographic termination, plus the incremental costs of the additional conveyance required for 0870 calls and of the interconnection circuits discussed at 6.104 above;
 - **Option 2:** 0870 termination charges based on BT's wholesale charges for geographic termination and the additional conveyance required for 0870 calls, plus additional costs including interconnection circuit costs at FAC
- 6.110 Option 1 and Option 2 take a similar approach to estimating the costs of geographic termination at far-end handover as both use BT's NCC prices for standard conveyance services. However, Option 1 and Option 2 differ in one important respect: their approach to estimating the adjustment for near-end handover for 0870 calls and circuit charges. Option 1 estimates additional conveyance costs for near-end handover on an incremental cost basis (including for interconnection circuits).

⁴⁸ Ofcom is currently consulting on proposals for the NCC from September 2009. See *Consultation on proposed charge controls in wholesale narrowband markets*, 19 March 2009, published at: http://www.ofcom.org.uk/consult/condocs/review_bt_ncc/.

Option 2 estimates the additional conveyance costs and interconnection circuit costs at FAC.

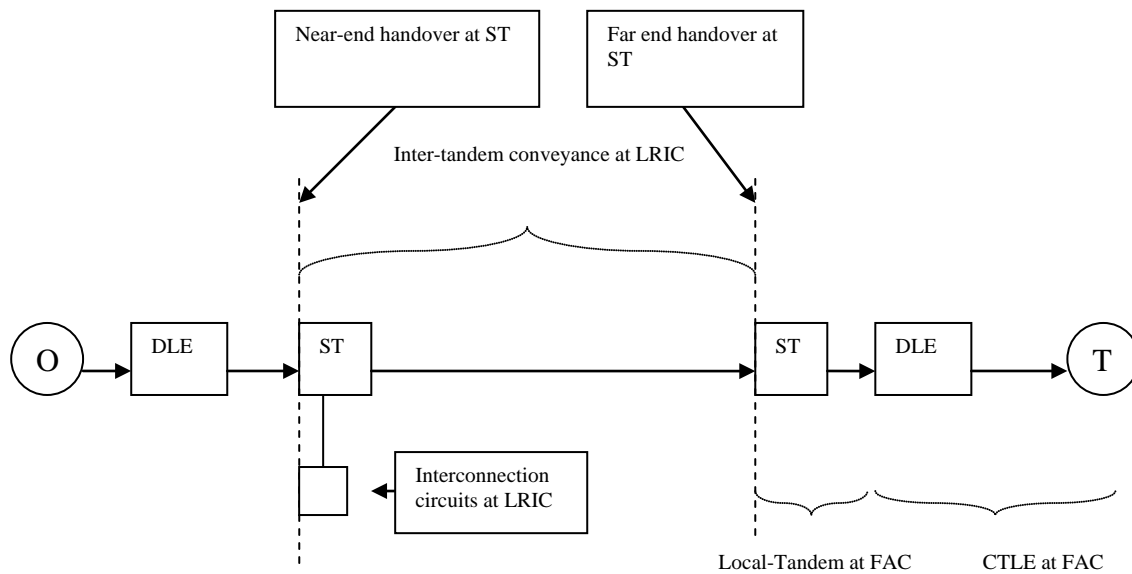
- 6.111 A further consideration is the need to ensure that AIT does not undermine the desired alignment of retail prices for 0870 and geographic calls. As a cross-check, we therefore go on to derive a “no-arbitrage ceiling”, above which the availability of additional revenue that may be shared by TCPs with NTS SPs in the form of outpayment would create an unacceptable risk of AIT.
- 6.112 Option 1 is set out at paragraphs 6.113 to 6.143 below. Option 2 is set out at paragraphs 6.144 to 6.146 below. The no-arbitrage ceiling is set out at paragraphs 6.147 to 6.151 below.

Option 1: Incremental cost approach

- 6.113 The NTS policy calls for greater pricing transparency. This includes both 0870 calls in fixed price packages and for 0870 calls outside packages (i.e. ppm charges).
- 6.114 For calls which are charged per minute, we consider that retail prices are most likely to be aligned if the efficient end-to-end marginal costs of 0870 and geographic national calls are also aligned. This is because, if the retail provider seeks to maximise profits, it will set prices to reflect marginal costs and the price elasticity of demand. If the termination charge is set to align marginal costs (to the extent possible) the retail operator is likely to align retail prices (provided there are no marked differences in price elasticity). This option seeks to achieve that alignment by calculating a rate based on BT’s NCC prices for geographic termination (far-end handover) plus the marginal (in practice incremental)⁴⁹ cost of additional conveyance costs arising from near-end handover (based on BT’s competitively determined prices) and other relevant costs (e.g. incremental costs of interconnection circuits based on BT’s NCC prices). See Figure 4 illustrating this approach.
- 6.115 Note that these additional costs are costs which would have been borne by the OCP in the case of a far-end-handover call. If a call from BT to a TCP is made using near-end handover rather than far-end-handover, BT as OCP will generally require less inter-tandem conveyance capacity. The cost which it saves as a result is the incremental cost of this capacity. This conveyance is instead provided by the TCP which incurs some incremental cost as a result. BT’s retail end-to-end costs for a near-end-handover call will then be aligned with those for a far-end-handover call if the payment to the TCP includes an amount equal to the incremental costs of the inter-tandem conveyance that is provided by the TCP instead of BT.

⁴⁹ Marginal cost is a special case of incremental cost with an increment of 1 unit of output.

Figure 4: Incremental cost approach



6.116 However, under this approach, the TCP will only be able to recover the incremental costs of inter-tandem conveyance arising from near-end handover through the termination rate (paid by the OCP). Any common costs will have to be met from the TCP's own customers, for example the NTS SP on the 0870 number range. This means that the TCP may choose to operate on another number range where higher outpayments are available if, for example, the NTS SP does not wish to contribute to the recovery of the TCP's common costs.

6.117 We have not attempted to estimate the incremental costs of inter-tandem conveyance for a network operator using a bottom-up approach to costing a representative network. We do not consider that such a detailed lengthy exercise of this nature would be appropriate and proportionate in a dispute. Ofcom has instead considered a number of different possible approaches to estimating the incremental costs of inter-tandem conveyance services in the following paragraphs. The approaches considered are:

- i) Using LRIC:FAC ratios based on BT accounting data
- ii) Applying cost-volume elasticities to FAC
- iii) A rule of thumb that LRIC is approximately 50% of FAC

6.118 Ofcom understands that BT's LRIC:FAC ratios are derived from an analysis of the costs that BT considered to be incremental over a relatively large volume of call minutes, significantly larger than the volume of calls to each 0870 operator, for example. These generate estimates of LRIC:FAC of 75%. In general, the larger the size of the volume increment, the larger the proportion of costs that are incremental.

6.119 For example, where there are economies of scale, the marginal costs (i.e. for a very small volume increment) are lower than the average costs. This has been noted in previous regulatory decisions, for example by Oftel in its *Determination of fixed portability costs and charges and statutory consultation on proposed modifications to BT's Licence to give effect to charge controls for portability*.

- 6.120 A cost-volume elasticity is defined as the percentage increase in costs for a 1% increase in volume, or the ratio of marginal cost to average cost. CVEs in telecommunications are typically significantly less than one, reflecting economies of scale. In setting the current NCC in 2005, Ofcom assumed, as a central case, a cost-volume elasticity of 0.25 for inland conveyance (network) costs, with upper and lower cases of 0.3 and 0.2 respectively.
- 6.121 Ofcom's view is that BT's LRIC:FAC ratios are likely to overstate the ratios appropriate to estimating the incremental costs of inter-tandem conveyance for the purposes of this dispute. The CVEs, on the other hand, may be thought of as providing a lower bound, as they reflect marginal costs. It might therefore be reasonable, in balancing the interests of all parties to use ratios that lie midway between the ratios provided by BT and the CVEs previously used by Ofcom for similar costs in order to derive estimates of LRIC. In calculating the charges under Option 1, Ofcom therefore applied an average LRIC:FAC ratio of 0.50.
- 6.122 This ratio should be applied to the FAC costs to estimate the LRIC. Ofcom considers that for the purposes of this dispute, BT's competitively determined prices for inter-tandem conveyance can be viewed as the best available rough proxy for the FAC costs incurred by an efficient network TCP providing these services. This is because such prices will generally allow for the recovery of the incremental costs of providing the service (including a reasonable rate of return on capital) and a reasonable contribution to the recovery of common costs, as does FAC. Accordingly, Ofcom estimates incremental costs for inter-tandem conveyance and circuit costs (related to the near-end adjustment) by applying a factor of 50% to BT's competitively determined prices. However, we note that competitive prices do not necessarily equal FAC (they could be above or below it, although they will generally be above LRIC) and the need to rely on this rule of thumb to estimate incremental costs may be a drawback of Option 1.
- 6.123 Ofcom considers that this approach offers a reasonable guide to the incremental routing costs for a network operator.
- 6.124 TCPs will need to convey and terminate 0870 calls at varying distances from the point of handover, and may use other CPs' networks for some or all of this conveyance and termination.⁵⁰ Accordingly, for the purpose of calculating termination rates where there is near-end handover, we have weighted the costs of termination by a representative traffic profile to ensure that they reflect the weighted average costs for all calls which require conveyance and termination.
- 6.125 In determining a weighted average geographic termination rate, we have considered a range of possible traffic profiles including profile information provided by an island TCP and a network TCP.
- 6.126 We consider that the traffic weights for a network operator are likely to be a fairer proxy for the underlying efficient costs that should be recovered under a proposed 0870 termination rate. For instance, the proportion of double tandem traffic would be much higher for an island operator than for a network based operator because all the post-translation geographic traffic emanates from a single point so that only traffic destined for DLEs would follow single tandem routing. A significant proportion of traffic will therefore need to travel large distances (including double tandem) before being terminated. We note that this potential inefficiency (also referred to as

⁵⁰ As noted previously, TCPs offering 0870 services will typically need to hand over 0870 calls to BT for conveyance, and sometimes also for the final leg of the call to the NTS SP.

tromboning) does not arise in respect of a network TCP, which will by virtue of its significant interconnection minimise the distance that geographic traffic must travel for onward termination. We have therefore placed more weight on traffic profiles for a network TCP. These traffic weights are provided in Table 5 below.

- 6.127 We note that the bulk of traffic is managed through a single tandem switch (i.e. only [X]% of traffic is carried as double tandem traffic). This is likely to differ from the traffic profile for an island operator.
- 6.128 We note that some island operators may choose the location of their interconnection to BT's network to minimise the amount of geographic termination, include minimising double tandem, given the single point of interconnection, but their incremental costs will still be above those of a network operator.

Table 5: Possible traffic weightings for estimating geographic termination costs

Termination Service	Traffic weighting
DLE	[X]
ST	[X]
Double Tandem (short)	[X]
Double Tandem (medium)	[X]
Double Tandem (long)	[X]

Source: Network Operator, Ofcom

- 6.129 The traffic weightings above may be used to determine the routing costs of termination for handover to the TCP at a ST point of handover. By weighting the conveyance elements by traffic weights, we can then estimate a reasonable weighted incremental cost that an operator would need to cover in order to take its aggregate 0870 traffic at the ST point, and convey that traffic to its (various) destination(s).
- 6.130 The traffic weightings take into account:
- the proportions of conveyance and termination services (i.e. DLE termination and LTC (local tandem conveyance)) needed for far-end handover and
 - the proportions of conveyance and termination services (i.e. ITC) needed to adjust for near-end handover.
- 6.131 Accordingly, where traffic is handed to the TCP at the first Single Tandem, Ofcom has simultaneously estimated the (weighted) costs of geographic termination at the far-end and the adjustment for (weighted) costs of near-end handover.

- 6.132 In addition, and as discussed earlier, Ofcom considers that interconnection circuit costs borne by the TCP should be recoverable by the TCP through the termination rate. Accordingly, Ofcom's estimated termination costs include estimated interconnection costs (on an incremental cost basis in this option).
- 6.133 This provides a "ST baseline" for the calculation of the appropriate termination rate at the near-end.
- 6.134 It is important to note that the weighted average geographic cost is assumed to be the same regardless of the point of handover. This is because the distance over which the call is terminated is independent of the distance over which the call is originated (up to the point where the call is handed over to the TCP for onward termination). This feature of 0870 calls explains why, under revenue-sharing arrangements, 0870 calls have typically been handed over at the near-end (i.e. so as to minimise origination costs).
- 6.135 However, if, under the new arrangements, the TCP were to receive the same termination payment regardless of where it interconnects, there would be no incentive on the TCP to continue to interconnect efficiently (e.g. at the near-end) with OCP networks.
- 6.136 Accordingly, we propose that the ST baseline should be adjusted according to the point of handover, in order to ensure our proposed termination rates provide appropriate incentives for efficient interconnection with OCPs (including at near-end points of handover). Therefore, where an OCP carries a call over a shorter conveyance distance (e.g. up to near-end DLE) or a greater conveyance distance (e.g. using inter-tandem conveyance up to far-end points of handover), the TCP payment should be adjusted to reflect the lesser or additional conveyance (and therefore costs) incurred by the OCP.
- 6.137 First, an adjustment is made to the ST baseline to account for the greater costs incurred by the TCP where the call is handed over at the DLE. In this case, the TCP will incur an additional cost to convey the call from the DLE to its NTS switch for number translation (it is not likely to have an NTS switch at each DLE). We therefore consider that it is relevant to estimate a separate weighted geographic cost to reflect the additional cost that would need to be incurred by the TCP when conveying the call from DLE to single tandem. This cost is in addition to the call termination costs incurred by the TCP in respect of the geographic leg of the call after the call reaches the single tandem point. Second, as discussed from paragraph 6.114, the calculation of the termination rate for far-end handover, is based on a floor derived from BT's wholesale charges for far-end single tandem termination for geographic calls plus the cost of interconnection circuits (at LRIC).
- 6.138 We have not applied a ladder for far-end points of handover using the same approach as for near-end DLE handover. Were we to use that approach, we would need to subtract inter-tandem conveyance rates from the ST baseline cost. This would generate a steep ladder with potentially negative termination rates for longer inter-tandem conveyance. While that might further incentivise efficient interconnection by the TCP, we have concluded that it would not strike a fair balance between the parties, taking account of the underlying objective of aligning retail prices for 0870 calls with those for geographic calls.
- 6.139 First, we consider that the case for such further incentives is not apparent. TCPs already have interconnection circuits in place and are unlikely to re-circuit 0870 traffic for that proportion of their traffic requiring far-end handover.

6.140 Second, Ofcom considers that a steep rate ladder with potentially negative rates for far-end handover would not provide for the same cost recovery for the TCP as an equivalent geographic call, where it would receive payment for ST Termination at far-end handover. As the ladder would not provide for this equivalence in cost recovery, it is not consistent with the policy objective of aligning 0870 and retail prices in respect of far-end handover.

6.141 Accordingly, taking account of the need for the proposed termination rates to incentivise efficient interconnection with the underlying objective of aligning geographic and 0870 retail call prices, we have concluded that, in order to strike a fair balance between the interests of the parties, a ladder of rates starting from a floor based on BT's wholesale charges for far-end single tandem termination for geographic calls is more appropriate.

6.142 Table 6 below summarises the methodology we have applied:

Table 6: Methodology for estimating a termination rate at relevant points of interconnection

point of handover	adjustment
DLE	ST baseline + Local-Tandem conveyance
ST (near-end)	ST baseline
ST (far-end - short)	ST far-end geographic termination + interconnection circuit costs
ST (far-end – medium)	ST far-end geographic termination + interconnection circuit costs
ST (far-end -long)	ST far-end geographic termination + interconnection circuit costs

Source: BT standard conveyance services

6.143 Applying this methodology, Ofcom determines the weighted geographic termination charges on an incremental basis to be as set out in Table 7 below:

Table 7: Weighted geographic termination charges on an incremental near-end handover basis (ppm)

<i>Point of handover (described in terms of the origination service on BT's network prior to handover)</i>	D	E	W
DLE	0.56	0.27	0.21
ST (near-end)	0.45	0.22	0.17
ST (far-end - short)	0.38	0.18	0.14

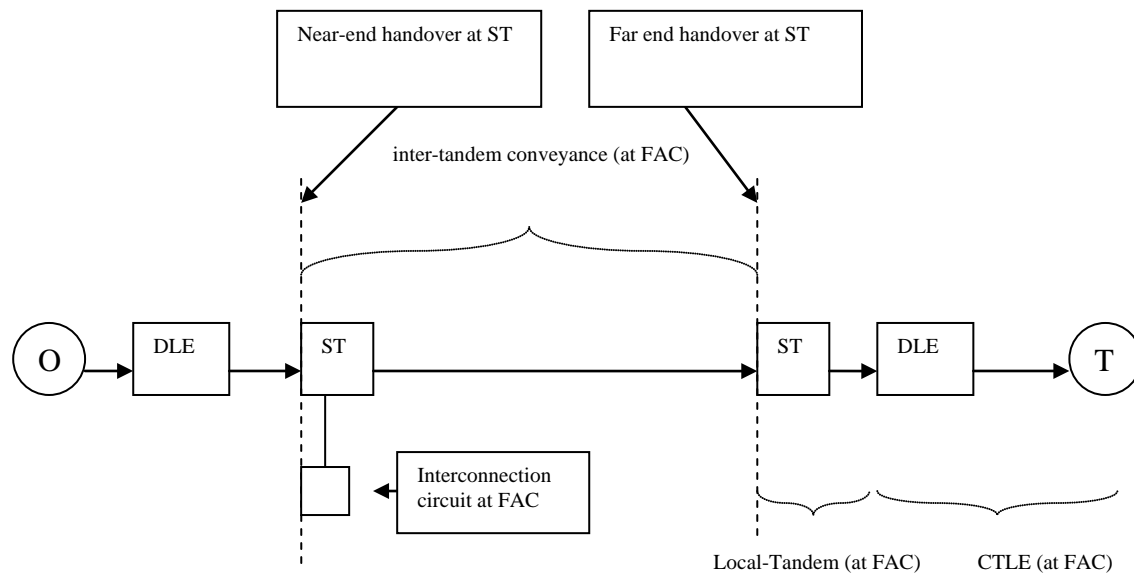
ST (far-end – medium)	0.38	0.18	0.14
ST (far-end –long)	0.38	0.18	0.14

Option 2: Fully allocated cost approach

6.144 We consider that the incremental approach sets out the minimum costs that a TCP should be allowed to recover through the termination charge. However it would introduce an inconsistency between the charges for 0870 termination and those for BT's other network services which include an allowance for the recovery of common costs. In the case of inter-tandem conveyance, in which BT no longer has SMP, charges are unregulated and reflect competitive pressure. It could therefore be undesirable in effect to include, in the charge for 0870 termination, an amount less than the competitively determined price for inter-tandem conveyance.

6.145 Therefore, we have calculated a termination charge that allows for the recovery of costs based on BT's NCC prices for geographic termination (related to far-end handover) *plus* BT's competitively determined prices for inter-tandem conveyance (related to near-end handover). Ofcom considers both regulated NCC and competitively determined prices roughly approximate FAC. As outlined previously, Ofcom also considers that competitively determined prices can reasonably be expected to allow recovery of the incremental costs of inter-tandem conveyance (including a reasonable rate of return on capital) and a reasonable contribution to the recovery of common costs. Figure 5 below provides an illustration of this approach. BT's regulated⁵¹ and competitively determined charges are equivalent to the costs of an efficient operator and therefore appropriate to determine the amount which a TCP should reasonably be able to recover through termination charges. By contrast, to allow higher termination charges to reflect the costs of an inefficient operator would create poor incentives for cost minimisation and could, in some circumstances, jeopardise the achievement of the intended pricing transparency benefits.

⁵¹ Note that the NCC was set on the assumption that BT would reduce its real unit costs year on year by an amount to reflect the general efficiency gains which an efficient operator would make, and the elimination of any inefficiency existing at the start of the charge control period.

Figure 5: Wholesale charge (Fully allocated cost) approach for near-end handover

6.146 For the purpose of calculating the near-end ST baseline and upward adjustment for handover at the DLE, we have applied the same weights explained in paragraphs 6.124 to 6.129 above to account for the average distance that 0870 calls must be conveyed where the TCP takes them at the near-end ST point for number translation and onward conveyance. Table 8 below sets out the resulting termination charges. As with Option 1, we have calculated termination rates for calls handed over at the far-end on the basis of a floor derived from BT's wholesale charges for far-end single tandem termination for geographic calls plus circuit costs (FAC-based under this option).

Table 8: Weighted geographic termination charges on an FAC near-end handover basis

<i>Point of handover (described in terms of the origination service on BT's network prior to handover)</i>	D	E	W
DLE	0.67	0.31	0.25
ST (near-end)	0.56	0.26	0.20
ST (far-end - short)	0.41	0.19	0.15
ST (far-end – medium)	0.41	0.19	0.15

ST (far-end –long	0.41	0.19	0.15
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Cross-check: arbitrage ceiling

- 6.147 Ofcom's concern in removing 0870 calls from the scope of the NTS Call Origination Condition was to ensure that outpayments made by TCPs through revenue sharing were below a level that would encourage AIT (a form of arbitrage). Such arbitrage could undermine Ofcom's aim of restoring the geographic link by placing the sustainability of retail call packages at risk. There are various ways in which this arbitrage might occur. For example arbitrageurs could configure computers to repeatedly dial calls to an 0870 number.
- 6.148 The 0870 calls made by the arbitrageur are in effect priced at zero at the margin in inclusive call packages, so BT earns no additional revenue from these calls. However, BT does incur additional costs for all additional 0870 call minutes made by an arbitrageur, through the provision of additional call origination and termination services, and particularly any outpayment to the NTS SP. If such artificially inflated 0870 traffic were to occur at significant levels, BT could incur significant losses such that it would be forced to raise the price of retail call packages or to remove 0870 calls from packages, to the detriment of geographic call customers.
- 6.149 As a cross-check against Options 1 and 2, Ofcom has calculated a 'no-arbitrage ceiling', which is the rate above which the risk of arbitrage becomes unacceptable. That is to say, we consider that a rate which is above the arbitrage ceiling would raise an unacceptable level of risk of arbitrage activity, and hence would not achieve a fair balance between the parties.
- 6.150 As noted above, we remain of this view, notwithstanding BT's decision to include 0870 and 0845 calls in its calling plans from 16 January 2009 (see paragraph 6.94)
- 6.151 The methodology Ofcom used in calculating the no-arbitrage ceiling is set out in full at Annex 4. The relevant no-arbitrage ceiling for the Single Tandem point of handover for time of day periods is shown in the table below.

Table 9: No-arbitrage ceilings (ppm)

<i>Elements of ceiling</i>	D	E	W
weighted geographic routing costs (ST point)	0.34	0.16	0.12
number translation (network)	[X]	[X]	[X]
number translation (retail)	[X]	[X]	[X]
arbitrageur costs	0.12	0.12	0.12
Single Tandem no-arbitrage ceiling (near-end)	0.68	0.46	0.42

Source: Ofcom calculations (see Annex 4)

Identifying options: conclusion

6.152 In the above section, we identified two options, plus a cross-check. These are:

- A charge based on the **costs of termination of geographic calls plus the relevant additional costs of termination of 0870 calls on an incremental cost basis**. Under this option, the TCP will be able to recover incremental costs of inter-tandem conveyance arising from near-end handover and interconnection circuits through the termination rate.
- A charge based on the **costs of termination of geographic calls plus the relevant additional costs of termination of 0870 calls on a fully allocated cost basis**. Under this option, we have calculated a termination charge that allows recovery of costs related to near-end handover and interconnection circuits by using the relevant BT wholesale charges. This rate falls between the lower incremental rate and higher arbitrage ceiling rates noted above, and would allow a TCP to make a contribution towards other costs involved in terminating 0870 calls.
- A rate that we have termed the “**no-arbitrage ceiling**”. This no-arbitrage ceiling represents a level above which a charge would be unreasonable, since any charges above this rate would carry an unacceptable risk of encouraging arbitrage activity on 0870 number ranges, as well as undermining BT’s ability to maintain the alignment of 0870 and geographic retail call charges.

Benchmarking

6.153 At paragraph 186 of its TRD core issues judgment the CAT states that:

“Benchmarking is a useful tool and OFCOM should consider the value of comparisons put forward by the parties and what they show about the reasonableness of the charges or other terms and conditions being proposed.”

6.154 Ofcom has therefore considered whether there are any relevant benchmarks against which the proposed termination charges identified above may be compared. In particular, we asked the parties whether they consider that there are any benchmarks that Ofcom should take into account⁵². In their responses to our information requests, the parties have identified a number of potentially relevant benchmarks which are considered below.

6.155 FlexTel suggested that Ofcom’s changes to the 0870 policy, implies that a comparable benchmark charge is that for 0800 numbers:

“Comparison of with the existing 0800 service demonstrates beyond reasonable doubt that call termination rates are provably the wrong tool to influence the retail pricing of call. There is no need for an impact assessment, here is a measurable and long established data set i.e. the Mobile tariff tables for 0800.”

6.156 However Ofcom does not consider FlexTel’s suggestion to be a relevant benchmark as the termination rates we are determining in this dispute are for 0870 calls originating on BT’s network, and not on a mobile operator’s network. On BT’s network, 0800 numbers are free to the caller and the NTS SP pays the TCP who

⁵² Our information requests sent to the parties in November 2008

pays the originator for the call. In contrast, we expect calls to 0870 will be paid for by the originating caller and BT will pay the TCP to terminate the call.

- 6.157 BT submitted that a relevant benchmark is the fixed geographic call termination charge. Ofcom considers that this is a suitable starting point as a benchmark but requires adjustments reflective of the routing and interconnection costs involved in a call to an 0870 number as set out above. These adjustments are aimed at achieving a fair balance between the parties while facilitating the achievement of the underlying policy objective of aligning charges for 0870 calls with geographic rates.
- 6.158 Gamma Telecom submitted that an appropriate benchmark for assessing reasonableness is the pricing applied to 03 numbers which retail at geographic rates. Given that a key objective in setting the termination rates for 0870 numbers is to enable BT to charge 0870 calls at geographic rates, this suggests that termination charges for 03 numbers might provide a suitable benchmark for 0870. However, we have provisionally concluded that in the context of the present dispute, the termination rates for 03 numbers should not be relied upon as a benchmark for determining the 0870 termination rates.
- 6.159 This is because 03 numbers were only recently introduced by Ofcom and traffic levels are currently very low in comparison to 0870. As traffic grows on the 03 number range, we anticipate that termination rates are likely to be subject to further revision before they stabilise. Discussions at the NTS Focus Group noting that some communications providers were uncomfortable with BT's termination rates for 03 calls but did not wish to delay implementation and also noting the ability to re-negotiate the charges after implementation tend to support that view.
- 6.160 Furthermore, we note that the termination rates for 03 numbers match exactly the rates proposed in BT's OCCN of 4 May 2007 in relation to 0870 termination charges. Leaving aside the fact that BT itself has updated these proposed rates, for the reasons set out in paragraphs 3.18 above, we consider that in the context of this dispute 0870 termination rates set at this level do not strike a fair balance between the parties since they do not enable the TCPs to recover certain costs incurred in the termination of a geographic call. Nor, as set out in Table 12 below, do we consider that they are reasonable in the light of Ofcom's regulatory objectives and the Community requirements, given the possibility that they will increase the rate of migrations from 0870 to other NTS number ranges above the minimum necessary to achieve alignment and possibly to a level which undermines the benefits anticipated in the 0870 policy impact assessment.
- 6.161 In addition, Ofcom considered a benchmark against another non-geographic number range such as 0871 and 0845 termination charges. However, Ofcom does not consider such benchmarks to be relevant in the present case since calls to 0870 numbers will no longer follow the same charging principles as those which apply to other non-geographic numbers subject to the NTS Condition following the changes to the regulatory regime. Under the BT NTS Call Origination Condition, TCPs are able to determine the retail prices for 0871 calls with BT allowed to retain an amount to cover its costs of origination. Following the changes to the regulatory regime, retail charges for 0870 calls will be set by the OCP according to the level of termination charge payable. BT has included 0845 calls in its fixed price packages despite the absence of plans to change the interconnection regime for these calls. However, we do not consider 0845 termination rates provide a relevant benchmark for future 0870 termination rates. Current 0845 rates would not form such a benchmark as the inclusion of 0845 calls in packages is itself likely to result in significant reductions in 0845 termination rates, under the current NTS charging regime. In addition, BT's

proposals do not provide certainty about future retail pricing of 0845 calls or packages. Termination charges for calls to non-geographic numbers would therefore not be a relevant benchmark for termination charges for calls to 0870 numbers following the changes to the applicable regulatory regime.

- 6.162 Although Cable & Wireless and THUS have withdrawn the termination rates they proposed in response to BT's OCCN, we have considered to what extent they are comparable to the rates we have calculated. [X] adopted a similar methodology to the approach we consider strikes a fair balance between the parties, since they were based on geographic termination charges with an adjustment for near-end handover. We note that the rates proposed by [X] are not materially dissimilar to our FAC-based charges, with the differences between the two, as regards near-end handover (single tandem and DLE) rates, being within a range of [X]ppm.
- 6.163 The rates [X] proposed for near-end handover are close to our Option 1 charges, calculated on an incremental near-end handover basis. However, its proposed rates for far-end handover take account of conveyance charges paid to BT. In addition, it has proposed an allowance in respect of IN DIP costs. For the reasons set out in paragraph 6.23 above, we consider a floor based on geographic costs of termination for 0870 termination rates at the far-end and the exclusion of IN DIP costs would be more likely to strike a fair balance between the parties and achieve the objective of aligning retail prices for 0870 calls with those for geographic calls. Given these variations in [X]'s methodology, we have reservations about the value of [X]'s proposed rates as a useful benchmark.

Ofcom's statutory obligations and regulatory principles

Introduction

- 6.164 Option 1 and Option 2, together with the no-arbitrage ceiling, are set out in Table 10 below.

Table 10: Summary of options for resolving this dispute (Single Tandem rate, ppm)

	D	E	W
Option 1: Incremental approach to near-end handover	0.45	0.22	0.17
Option 2: FAC approach to near-end handover	0.56	0.26	0.20
No-arbitrage ceiling	0.68	0.46	0.42

- 6.165 Options 1 and 2 represent termination rates which may be appropriate for resolving this dispute. In order to establish this, we have considered both of these and the no-arbitrage ceiling in light of benchmarks put forward by the parties in dispute, before assessing the extent to which the various options would be fair as between the parties and reasonable in the light of Ofcom's statutory obligations and regulatory

principles. We have concluded, in the round, that Option 2 represents the outcome that is most reasonable as between the parties to the dispute and best outcome, for the reasons set out in the following paragraphs. Our analysis fulfils Ofcom's statutory duties, regulatory principles and Community obligations. We therefore start with Option 2 before considering Option 1 and the no-arbitrage ceiling.

Option 2

- 6.166 Under this option, charges payable by BT to other providers for the termination of calls to 0870 numbers are set at a rate that provides for the recovery of geographic termination costs related to far-end handover at FAC, an adjustment for near-end handover based on FAC, and recovery of interconnection circuit costs at FAC.

Furthering the interests of consumers

- 6.167 Under this option, the 0870 termination charges we are proposing are set at a level that is below the no-arbitrage ceiling and that we consider will enable BT to continue to include 0870 calls in inclusive packages, and to price 0870 calls at the same rate as calls to geographic numbers, ensuring greater retail price transparency for consumers. At the same time, the termination rates enable TCPs to recover costs arising from near-end handover of 0870 calls and certain additional costs that are met by the OCP in relation to geographic calls and hence strike a balance between the consumer interests of callers and NTS SPs. For the reasons set out above, we consider this is consistent with the recovery of termination costs for geographic calls and therefore should minimise the chances that the determination of this dispute will raise the level of migrations to other NTS number ranges above that anticipated by the 0870 policy impact assessment. We therefore consider that the termination charges proposed under this option should contribute to the achievement of the consumer benefits identified in the 0870 policy impact assessment and hence are consistent with Ofcom's principal duty at Section 3 of the 2003 Act to further the interests of consumers in relevant markets.

Promotion of competition

- 6.168 The enhanced transparency that will result from charging 0870 calls at geographic rates will better enable consumers to exercise choice, thereby promoting competition in retail calls markets. For the reasons set out above, we do not consider that the proposed solution will result in the level of migration to other NTS number ranges where revenue sharing remains available exceeding that anticipated in the 0870 policy impact assessment, so as to reduce the effectiveness of price transparency on the 0870 number range.
- 6.169 While the charges proposed under this option are at a level which some TCPs have said would deter the provision of 0870 services that they currently offer, we do not consider on the available evidence that this is likely to have a distortionary effect on competition or cause an inefficient reduction in the range of services available for the reasons given in paragraph 6.73 above.
- 6.170 Nor do we consider that there is evidence to support the contention that the termination rates will have a lesser impact on BT in comparison to other TCPs and thereby damage competition in the supply of termination services, as set out in paragraph 6.73 above.
- 6.171 We are therefore satisfied that the rates proposed under this option are pro-competitive, in line with the principle set out at Section 3(4) of the 2003 Act that

Ofcom must have regard to the desirability of promoting competition in the relevant markets, as well as Ofcom's duty under section 4 of the 2003 Act to promote competition in communications markets in accordance with the Framework Directive.

Other considerations under Ofcom's statutory duties and the Community requirements

6.172 The points made in paragraphs 6.77 to 6.80 in relation to BT's proposed termination rates are equally applicable here.

6.173 For these reasons, we are satisfied that the termination rates proposed under Option 2 are fair as between the parties and are reasonable in the light of Ofcom's statutory objectives and the Community requirements.

Option 1

6.174 Option 1 like Option 2, is below the no-arbitrage ceiling and would enable BT to continue to price 0870 calls at the same rate as calls to geographic numbers, and to include 0870 calls in inclusive packages and would therefore support Ofcom's principal duty at Section 3 of the 2003 Act to further the interests of consumers in relevant markets, and the competition related duties set out at paragraph 6.63.

6.175 It might be argued that Option 1 more accurately captures the incremental cost borne by network TCPs carrying inter-tandem traffic over their own networks. However, Option 1 would be likely to result in TCPs seeking to recover a greater share of costs from NTS SPs which, in comparison to Option 2, would increase their incentives to migrate to other NTS number ranges and so potentially reduce the consumer and competition benefits flowing from greater pricing transparency. When compared to Option 2, we have provisionally concluded, therefore, that Option 1 does not strike as fair a balance between the parties and is not as reasonable in the light of our regulatory objectives and the Community requirements.

The no-arbitrage ceiling

6.176 As discussed at paragraphs 6.147 to 6.151, the no-arbitrage ceiling provides a cross-check for Options 1 and 2. Because the no-arbitrage ceiling would result in the highest charges for 0870 termination and consequently the least need to pass costs on to NTS SPs, the likelihood that migrations to other NTS number ranges would increase above the level anticipated by the 0870 policy impact assessment is lower than with Option 1. However, Ofcom does not consider that it represents an appropriate rate in itself, for the following reasons.

6.177 First, the calculation of the no-arbitrage ceiling takes account of costs which are not incurred in the course of legitimate 0870 termination. The relationship of price to cost is therefore weak.

6.178 As regards Ofcom's statutory objectives and Community requirements, the no-arbitrage ceiling would, like Ofcom's proposed solution, enable BT to continue to price 0870 calls at the same rate as calls to geographic numbers, and to include 0870 calls in inclusive packages and would therefore support Ofcom's principal duty at Section 3 of the 2003 Act to further the interests of consumers in relevant markets, and the competition related duties set out at paragraph 6.63. However, the higher cost to BT under the no-arbitrage ceiling means that BT's incentives to do so are less than under Ofcom's proposed solution, creating a risk that (at some time) retail prices for 0870 calls could be increased above geographic call prices. Therefore, the

extent to which the no-arbitrage ceiling would fulfil Ofcom's section 3 and 4 consumer and competition related duties is comparatively less.

- 6.179 Ofcom notes that the price of inclusive call packages may rise in response to improved value added within the package to the customer, in contrast to the risk of arbitrage, which could create pressure for a rise in the price of the call package. Accordingly, a rise in the price of the call package would not necessarily be inconsistent with the 0870 policy for this reason.

Consistency of approach

Whether there are relevant ex ante obligations which affect the position of the parties on the market

- 6.180 In view of the assessment above, we are satisfied that the rates proposed are reasonable for the purposes of the End-to-End obligation and are consistent with Ofcom's 0870 policy of aligning retail charges for 0870 calls with geographic rates.

Ofcom's provisional conclusion

- 6.181 For the reasons set out in the previous section, Ofcom's provisional conclusion is that Option 2 (0870 charges reflective of the costs of geographic termination on a fully allocated cost basis) is the best outcome in terms of striking a fair balance between the parties and being reasonable in the light of Ofcom's regulatory objectives and the Community requirements as set out in section 7 below.
- 6.182 Finally, this document clearly sets out the parties' arguments and Ofcom's reasoning that leads to this proposed conclusion. We also note the opportunities that the parties have had to comment on Ofcom's policy proposals in relation to 0870. They will also have an opportunity to comment on the specific termination rates proposed in the draft determination. Accordingly, our proposed rates for determining this dispute are transparent, accountable, proportionate, consistent and targeted.
- 6.183 The applicable rates under Option 2 are summarised in Table 11.

Table 11: Proposed range of 0870 NTS termination charges for various points of handover (ppm)

<i>Point of handover (described in terms of the origination service on BT's network prior to handover)</i>	D	E	W
DLE	0.67	0.31	0.25
ST (near-end)	0.56	0.26	0.20
ST (far-end - short)	0.41	0.19	0.15

ST (far-end – medium)	0.41	0.19	0.15
ST (far-end –long	0.41	0.19	0.15

Next steps

- 6.184 Stakeholders are invited to comment on Ofcom's proposed resolution of this dispute by close of business on 7 May 2009.
- 6.185 Annex 1 below explains how stakeholders can submit comments on Ofcom's proposed resolution of this dispute. Ofcom's consultation principles are set out at Annex 2 below, while Ofcom's standard coversheet for consultation responses is included at Annex 3 below.

Section 7

Summary tables

Table 12: Assessment of BT's proposed termination charges against Ofcom's regulatory objectives and Community requirements

Factor	Assessment
<p>Relevant objectives and Community requirements:</p> <p>PRINCIPAL DUTY: further the interests of citizens in relation to communications matters and further the interests of consumers in relevant markets, where appropriate by promoting competition.</p>	<p>We are not satisfied that the termination rates proposed by BT are set at a level that strike a fair balance between competing consumer interests for the reasons set out in paragraphs 6.64 - 6.72 nor that they will effectively promote competition for the reasons set out in paragraphs 6.73.</p>
<p>Section 3(4) of the 2003 Act sets out a number of principles which Ofcom must have regard to in performing its principal duties where it appears to Ofcom that they are relevant, including:</p> <ul style="list-style-type: none"> the desirability of promoting competition in the relevant markets; the desirability of encouraging investment and innovation in the relevant markets; 	<p>For the reasons set out in paragraph 6.74, we consider that BT's rates are unlikely to have a distortionary effect on competition between TCPs. However, as explained at paragraph 6.72 we consider that they could increase migrations to other NTS number ranges where revenue-sharing remains available, above the level anticipated in the 0870 policy impact assessment, and this would reduce the effectiveness of pricing transparency on the 0870 number range and its potential to enhance competition. For this reason, we are not satisfied that BT's proposed rates would effectively promote competition.</p> <p>For the reasons given at paragraph 6.77, we consider that BT's proposed rates would not have a material adverse effect on TCPs' willingness to invest and ability to innovate.</p>
<p>In performing the principal duty of furthering the interests of consumers specifically, section 3(5) of the 2003 Act provides that Ofcom must have regard, in particular, to:</p> <ul style="list-style-type: none"> the interests of those consumers in respect of choice, price, quality of service and value for money. 	<p>As explained in paragraph 6.74, we consider that BT's termination rates are unlikely to have a distortionary effect on competition or cause an inefficient reduction in the range of services available.</p>

Factor	Assessment
<p>RELEVANT OFCOM GOALS:</p> <ul style="list-style-type: none"> the availability throughout the United Kingdom of a wide range of electronic communications services; 	<p>As explained in paragraph 6.74, we consider that BT's termination rates are unlikely to have a distortionary effect on competition or cause an inefficient reduction in the range of services available.</p>
<p>COMMUNITY GOALS:</p> <ul style="list-style-type: none"> to promote competition in communications markets; to contribute to the development of the European internal market; to promote the interests of all European Union citizens; not to favour one form of electronic communications service over another. to encourage, to the extent Ofcom considers it appropriate, the provision of network access and service interoperability for the purposes of securing efficiency and sustainable competition in communications markets and the maximum benefit for the customers of communications network and services providers. 	<p>We are not satisfied that the termination rates proposed by BT are set at a level that strike a fair balance between competing consumer interests for the reasons set out in paragraphs 6.64 - 6.72 nor that they will effectively promote competition for the reasons set out in paragraph 6.73.</p> <p>Although there is some evidence that overseas callers may not be able to access 0870 services should they migrate to other number ranges, for the reasons given in paragraph 6.80, we consider that the impact on overseas callers of BT's proposed termination rates is minimal and does not outweigh other considerations under Ofcom's regulatory objectives and the Community requirements, namely consumer protection and the promotion of competition, which are in the interests of all EU citizens.</p>

Table 13: Assessment of TCPs' proposed termination charges against Ofcom's regulatory objectives and Community requirements

Factor	Assessment
<p>Relevant objectives and Community requirements:</p> <p>PRINCIPAL DUTY: further the interests of citizens in relation to communications matters and further the interests of consumers in relevant markets, where appropriate by promoting competition.</p>	<p>As explained in paragraphs 6.93 - 6.101, all the alternative charges proposed by the TCPs are above the no-arbitrage ceiling and therefore risk compromising the achievement of consumer and competition benefits.</p>
<p>Section 3(4) of the 2003 Act sets out a number of principles which Ofcom must have regard to in performing its principal duties where it appears to Ofcom that they are relevant, including:</p> <ul style="list-style-type: none"> the desirability of promoting competition in the relevant markets; the desirability of encouraging investment and innovation in the relevant markets; 	<p>For the reasons set out in paragraph 6.73, we concluded that termination rates that might result in some TCPs exiting from the 0870 number range was unlikely to lead to a distortion of competition or cause an inefficient reduction in the range of services available.</p> <p>However, as noted above, the rates proposed by the TCPs could prejudice BT's willingness to align 0870 retail rates with those for geographic calls and this would compromise the achievement of competition benefits flowing from enhanced transparency.</p> <p>For the reasons given at paragraph 6.77, we consider that none of the TCPs' proposed rates would have a material adverse effect on their willingness to invest and ability to innovate.</p>
<p>In performing the principal duty of furthering the interests of consumers specifically, section 3(5) of the 2003 Act provides that Ofcom must have regard, in particular, to:</p> <ul style="list-style-type: none"> the interests of those consumers in respect of choice, price, quality of service and value for money. 	<p>For the reasons set out in paragraph 6.73, we concluded that termination rates that might result in some TCPs exiting from the 0870 number range was unlikely to lead to a distortion of competition or cause an inefficient reduction in the range of services available.</p> <p>However, as noted above, the rates proposed by the TCPs could prejudice BT's willingness to align 0870 retail rates with those for geographic calls and this would compromise the achievement of competition benefits flowing from enhanced transparency.</p>

Factor	Assessment
<p>RELEVANT OFCOM GOALS:</p> <ul style="list-style-type: none"> the availability throughout the United Kingdom of a wide range of electronic communications services; 	<p>For the reasons set out in paragraph 6.73, we concluded that termination rates that might result in some TCPs exiting from the 0870 number range was unlikely to lead to a distortion of competition or cause an inefficient reduction in the range of services available.</p> <p>However, as noted above, the rates proposed by the TCPs could prejudice BT's willingness to align 0870 retail rates with those for geographic calls and this would compromise the achievement of competition benefits flowing from enhanced transparency.</p>
<p>COMMUNITY GOALS:</p> <ul style="list-style-type: none"> to promote competition in communications markets; to contribute to the development of the European internal market; to promote the interests of all European Union citizens; not to favour one form of electronic communications service over another. to encourage, to the extent Ofcom considers it appropriate, the provision of network access and service interoperability for the purposes of securing efficiency and sustainable competition in communications markets and the maximum benefit for the customers of communications network and services providers. 	<p>For the reasons set out in paragraph 6.73, we concluded that termination rates that might result in some TCPs exiting from the 0870 number range was unlikely to lead to a distortion of competition or cause an inefficient reduction in the range of services available.</p> <p>However, for the reasons given in paragraphs 6.93 - 6.101, the rates proposed by the TCPs could prejudice BT's willingness to align 0870 retail rates with those for geographic calls and this would compromise the achievement of consumer and competition benefits flowing from enhanced transparency.</p> <p>To the extent that the switching of 0870 international telephone services to other NTS number ranges will reduce the access of overseas callers to these services, we consider the impact of that outcome to be minimal, for the reasons set out in paragraph 6.80 above. It does not outweigh other considerations under Ofcom's regulatory objectives and the Community requirements, namely consumer protection and enhanced competition, which are in the interests of all EU citizens.</p>

Table 14: Assessment of Option 2 - costs of termination of geographic calls plus the relevant additional costs of termination of 0870 calls on a fully allocated cost basis ("FAC – based termination charges") against Ofcom's regulatory objectives and Community requirements

Factor	Assessment
<p>Relevant objectives and Community requirements:</p> <p>PRINCIPAL DUTY: further the interests of citizens in relation to communications matters and further the interests of consumers in relevant markets, where appropriate by promoting competition.</p>	<p>We are satisfied that these termination rates are set at a level that strikes a fair balance between competing consumer interests for the reasons set out in paragraphs 6.107 and that will effectively promote competition for the reasons set out in paragraphs 6.168 - 6.171 .</p>
<p>Section 3(4) of the 2003 Act sets out a number of principles which Ofcom must have regard to in performing its principal duties where it appears to Ofcom that they are relevant, including:</p> <ul style="list-style-type: none"> the desirability of promoting competition in the relevant markets; the desirability of encouraging investment and innovation in the relevant markets; 	<p>We are satisfied that these termination rates are pro-competitive for the reasons set out in paragraphs 6.168 - 6.171.</p> <p>For the reasons given at paragraph 6.77, we consider that FAC-based termination rates would not have a material adverse effect on their willingness to invest and ability to innovate.</p>
<p>In performing the principal duty of furthering the interests of consumers specifically, section 3(5) of the 2003 Act provides that Ofcom must have regard, in particular, to:</p> <ul style="list-style-type: none"> the interests of those consumers in respect of choice, price, quality of service and value for money. 	<p>For the reasons set out in paragraph 6.168, we concluded that termination rates that might result in some TCPs exiting from the 0870 number range was unlikely to lead to a distortion of competition or cause an inefficient reduction in the range of services available.</p> <p>For the reasons set out in paragraphs 6.168, we consider that FAC-based termination charges should facilitate the achievement of competition benefits flowing from enhanced pricing transparency.</p>
<p>RELEVANT OFCOM GOALS:</p> <ul style="list-style-type: none"> the availability throughout the United Kingdom of a wide range of electronic communications services; 	<p>For the reasons set out in paragraphs 6.168, we consider that FAC-based termination charges should facilitate the achievement of competition benefits flowing from enhanced pricing transparency.</p>

Factor	Assessment
<p>COMMUNITY GOALS:</p> <ul style="list-style-type: none"> • to promote competition in communications markets; • to contribute to the development of the European internal market; • to promote the interests of all European Union citizens; • not to favour one form of electronic communications service over another. • to encourage, to the extent Ofcom considers it appropriate, the provision of network access and service interoperability for the purposes of securing efficiency and sustainable competition in communications markets and the maximum benefit for the customers of communications network and services providers. 	<p>We are satisfied that these termination rates are set at a level that strikes a fair balance between competing consumer interests for the reasons set out in paragraphs 6.107 and that will effectively promote competition for the reasons set out in paragraphs 6.168 - 6.171 .</p> <p>To the extent that the switching of 0870 international telephone services to other NTS number ranges will reduce the access of overseas callers to these services, we consider the impact of that outcome to be minimal, for the reasons set out in paragraph 6.80 above. It does not outweigh other considerations under Ofcom's regulatory objectives and the Community requirements, namely consumer protection and enhanced competition, which are in the interests of all EU citizens.</p>

Annex 1

The Draft Determination

Dispute between BT and those operators listed in Annex 1 to this Determination

Determination under sections 188 and 190 of the Communications Act 2003 (“2003 Act”) for resolving a dispute between British Telecommunications Plc (“BT”) and those operators listed in Annex 1 to this Determination concerning the charges for 0870 call termination.

WHEREAS—

(A) section 188(2) of the 2003 Act provides that, where Ofcom has decided pursuant to section 186(2) of the 2003 Act that it is appropriate for it to handle the dispute, Ofcom must consider the dispute and make a determination for resolving it. The determination that Ofcom makes for resolving the dispute must be notified to the parties in accordance with section 188(7) of the 2003 Act, together with a full statement of the reasons on which the determination is based, and publish so much of its determination as (having regard, in particular, to the need to preserve commercial confidentiality) they consider appropriate to publish for bringing it to the attention of the members of the public, including to the extent that Ofcom considers pursuant to section 393(2)(a) of the 2003 Act that any such disclosure is made for the purpose of facilitating the carrying out by Ofcom of any of its functions;

(B) section 190 of the 2003 Act sets out the scope of Ofcom’s powers in resolving a dispute which may, in accordance with section 190(2) of the 2003 Act, include—

- a) making a declaration setting out the rights and obligations of the parties to the dispute;
- b) giving a direction fixing the terms or conditions of transactions between the parties to the dispute;
- c) giving a direction imposing an obligation, enforceable by the parties to the dispute, to enter into a transaction between themselves on the terms and conditions fixed by Ofcom; and
- d) for the purpose of giving effect to a determination by Ofcom of the proper amount of a charge in respect of which amounts have been paid by one of the parties to the dispute to the other, giving a direction, enforceable by the party to whom sums are to be paid, requiring the payment of sums by way of adjustment of an underpayment or overpayment;

(C) on 19 April 2006, Ofcom published a statement entitled *NTS: A Way Forward*⁵³ (‘the NTS Statement’) which sought to re-establish the link between 0870 call charges and geographic call charges and to remove the regulatory support for revenue sharing on the 0870 number range. In the NTS Statement, Ofcom indicated that those changes would be introduced 18 months from the date of the conclusion of the wider Numbering Review. The Numbering Review Statement was published on 27 July 2006 and Ofcom therefore

⁵³ see http://www.ofcom.org.uk/consult/condocs/nts_forward/statement/statement.pdf

anticipated that the changes to the regime for 0870 numbers would come into effect by 1 February 2008;

(D) on 4 May 2007, in anticipation of the changes to the regulatory regime for the 0870 number range, BT issued an Operator Charge Change Notice to, inter alia, the operators listed at Annex 1, proposing charges payable by BT for call termination on the 0870 number range with an effective date of 1 February 2008;

(E) The operators listed at Annex 1 have either failed to accept or rejected the charges proposed by BT in its Operator Charge Change Notice and, in certain cases, proposed an alternative basis for charges for call termination on the 0870 number range;

(F) on 7 July 2007 BT referred disputes with each of the operators listed at Annex 1 to Ofcom for dispute resolution. On 31 August 2007, Ofcom decided it was appropriate for it to handle the disputes referred by BT together;

(G) having considered the submissions of all the parties to the disputes referred by BT, Ofcom set the scope of the issues in dispute to be resolved as follows—

'The scope of the dispute is to assess the level of charges payable by BT for call termination on 0870 numbers in respect of each of the TCPs included in the dispute. Specifically, Ofcom will consider whether:

With effect from the date that the changes to the regulatory regime applicable to calls to 0870 numbers as set out in the NTS Statement come into effect, the termination charges proposed by BT or, where appropriate, the TCPs are reasonable terms and conditions for the purposes of the end-to-end connectivity obligation.

▪In considering whether the proposed charges constitute reasonable terms and conditions, Ofcom will consider the responsibility of operators for additional interconnection charges, including transit (TWIX) and circuit charges.'

(H) A non-confidential draft determination was sent to the parties on 16 November and published on Ofcom's website on 19 November 2007.

(I) On 18 December 2007 Ofcom announced that it was suspending its consideration of this dispute, pending the judgment of the Competition Appeal Tribunal ('CAT') in relation to the appeal against Ofcom's determination of disputes between T-Mobile and BT, O2 and BT, Hutchison 3G and BT and BT and each of Hutchison 3G, Orange Personal Communications Services and Vodafone relating to fixed to mobile and mobile to mobile termination ("TRD appeals"). Following the publication of the CAT's judgments of 20 May 2008 and 15 August 2008 in the TRD appeals, Ofcom reopened its consideration of this dispute. In the light of those judgments, Ofcom reconsidered the issues in this dispute afresh and has not resolved the dispute along the lines outlined in its 16 November draft determination.

(J) On 2 May 2008 Ofcom published a further consultation on 0870 numbers entitled *Changes to 0870*⁵⁴ ('the May 2008 Consultation'). In this consultation, Ofcom reconfirmed its intention to proceed with changes to 0870 proposed in the NTS Statement, subject to stakeholder comments. Ofcom also proposed to modify its proposals for 0870 numbers in one respect, removing the requirement for pricing announcements in favour of certain price publication obligations.

⁵⁴ <http://www.ofcom.org.uk/consult/condocs/0870calls/0870condoc.pdf>

(K) On 23 April 2009, Ofcom published a statement entitled *Changes to 0870* (0870 Statement) in which it confirmed the proposals from the May 2008 Consultation. Ofcom specified that the changes would take effect from 1 August 2009 in order to give CPs time to revise their interconnection charges. The changes will therefore take effect on 1 August 2009.

(L) In order to resolve this dispute, Ofcom has considered, among other things, the information provided by the parties and Ofcom has further acted in accordance with its duties set out in Section 3 of, and the six Community Requirements set out in Section 4 of the 2003 Act.

(M) A fuller explanation of the background to the dispute and Ofcom's reasons for making this Determination is set out in the explanatory statement accompanying this Determination; and

NOW, therefore, Ofcom makes, for the reasons set out in the accompanying explanatory statement, this Determination for resolving this dispute—

I Declaration of rights and obligations, etc.

- 1** That the charge payable by BT to each of the operators listed at Appendix 1 for the termination of calls to 0870 numbers shall be the charges set out in Appendix 2 until such time as alternative charges are in place.

II Binding nature and effective date

- 2** This Determination is binding on BT and the operators listed at Appendix 1 in accordance with section 190(8) of the 2003 Act.
- 3** This Determination shall take effect on the date on which the changes to the regulatory regime applicable to the 0870 number range as set out in the 0870 Statement come into effect.

III Interpretation

- 4** For the purpose of interpreting this Determination—
- a)** headings and titles shall be disregarded; and
 - b)** the Interpretation Act 1978 shall apply as if this Determination were an Act of Parliament.
- 5** In this Determination—
- a)** **'2003 Act'** means the Communications Act 2003 (c.21);
 - b)** **'BT'** means British Telecommunications plc, whose registered company number is 1800000, and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 736 of the Companies Act 1985, as amended by the Companies Act 1989;
 - c)** **'Daytime Traffic'** means call traffic originating on or transiting BT's network during the period of time between 0800 and 1800 on Monday to Friday;

Draft determinations to resolve 0870 call termination rate disputes between BT and various operators

- d) **'Evening Traffic'** means call traffic originating on or transiting BT's network which is not either Daytime Traffic or Weekend Traffic;
- e) **'Weekend Traffic'** means call traffic originating on or transiting BT's network during the period of time between 2400 on Friday and 2400 on Sunday; and
- f) **'Ofcom'** means the Office of Communications;

Neil Buckley

Director of Investigations

A person duly authorised in accordance with paragraph 18 of the Schedule to the Office of Communications Act 2003

[] 2009

Appendix 1

Operator Name (Registered)	Registered number	Registered address
Affiniti Integrated Solution Limited	2817039	Telephone House 37 Carr Lane Hull HU1 3RE
Cable & Wireless U.K.	01541957	Waterside House Longshot Lane Bracknell Berkshire RG12 1XL
Cheers International Sales Limited	6288825	Britannia House 1-11 Glenthorne Road London W6 0LH
Colloquium Limited	SC142248	100 Union Street Aberdeen AB10 1AR
COLT Telecommunications	02452736	Beaufort House 15 St Botolph Street London EC3A 7QN
Energis Communications Limited	02630471	Waterside House Longshot Lane Bracknell Berkshire RG12 1XL
Easynet Group Limited	03137522	44-46 Whitfield Street London W1T 2RJ
Opal Telecom Limited	03849133	Stanford House, Garrett Field Birchwood Warrington WA3 7BH
Oxygen8 Communications UK Limited	03383285	19 Cato Street Birmingham B7 4TS
Redstone Communications Limited	03021292	80 Great Eastern Street London EC2A 3RS
Syntec Limited	03529985	18 The Avenue West Ealing W13 8PH London
Telxl Limited	04249562	Highfield House 1562 Stratford Rd Hall Green Birmingham West Midlands B28 9HA
Thus Group Holdings plc	SC192666	1 - 2 Berkeley Square 99 Berkeley Street Glasgow G4 7HR
1RT Group Limited	05150214	2 Woodland Drive Barnt Green West Midlands

Operator Name (Registered)	Registered number	Registered address
		B45 8FX
Aggregated Telecom Limited	03882936	Willow Court 7 West Way Botley Oxford OX2 0JB
Invomo Limited	6267056	130 City Road London EC1V 2NW
Flexitel Limited	02772380	Griffin Court 24-32 London Road Newbury Berkshire RG14 1JX.
Gamma Telecom Holdings Limited	4287779	8-10 New Fetter Lane London EC4A 1RS
Inclarity Limited	02673204	7th Floor Olympic Office Centre 8 Fulton Road Wembley Middlesex HA9 0NU
Edge Telecom Limited	03101247	Global House 2 Crofton Close Lincoln LN3 4NT
IV Response Limited	04318927	57-61 Mortimer Street London W1W 8HS
Prodigy Internet Limited	03828160	217 Portobello Sheffield S1 4DP
Sala Trading Ltd	03617973	121 Edgware Road London W2 2HX
Magrathea Telecommunications Limited	04260485	Albany House 14 Shute End Wokingham Berkshire RG40 1BJ
Skytel Limited	04227994	78 Chorley New Road Bolton BL1 4BY
Vectone Network Limited	05445235	58 Marsh Wall London E14 9TP

Appendix 2

Charges payable by BT for termination of calls to 0870 numbers (ppm) at various points of handover.

<i>Point of handover (described in terms of the origination service on BT's network prior to handover)</i>	D	E	W
DLE	0.67	0.31	0.25
ST (near-end)	0.56	0.26	0.20
ST (far-end - short)	0.41	0.19	0.15
ST (far-end – medium)	0.41	0.19	0.15
ST (far-end –long	0.41	0.19	0.15

The table above sets out the proposed termination charges for handover at single tandem. Termination charges for various points of handover will be adjusted to reflect additional conveyance charges.

Annex 2

TCPs referred by BT on 7 July 2007

Affiniti Integrated Solution Limited
Cable & Wireless U.K.
Cheers International Telecom Limited
Colloquium Limited
COLT Telecommunications
Energis Communications Limited
Easynet Group
Magrathea Telecommunications Limited
Opal Telecom Limited
Opera Telecom Ltd
Redstone Communications Limited
Syntec UK Limited
Thus plc
Tiscali UK Limited

Annex 3

TCPs referred by BT on 6 August 2007

1RT Group Limited
Aggregated Telecom Limited
Band-X Limited
Flextel Limited
Gamma Telecom Holdings Limited
GMK Telecom Ltd
Inclarity plc
Interweb Design Limited
IV Response Limited
PNC Telecom
Prodigy Internet Limited
Sala Trading Ltd
Skytel Limited
Telxl Limited
Vectone Network Limited

Annex 4



Derivation of the no-arbitrage ceiling

A4.1 [REDACTED].

Figure 6 Arbitrage scams [Confidential]

[REDACTED]

A4.2 [REDACTED]. In reaching its provisional conclusion in the present disputes, Ofcom has sought, consistently with its policy position set out in the NTS Statement, to ensure that such arbitrage opportunities do not arise and this is reflected in its approach.

Methodology

A4.3 For the purpose of deriving the no-arbitrage ceiling we have taken into account the costs of a TCP which is a network operator fully interconnected to BT's network.⁵⁵ Such a TCP will be interconnected with BT at many points.

A4.4 Ofcom notes that the fully interconnected operator will be more efficient at routing and terminating call traffic and will have the lowest possible termination costs. The relevance of this is that Ofcom must consider the lowest termination rate at which arbitrage becomes an unacceptable risk. Where the TCP is fully interconnected, this means that the TCP will be able to take the call (from BT) at the near-end (i.e. at the near-end to the point of call origination), carry the traffic over its own network, and hand the call back to BT at the far-end (i.e. close to the call destination). The network operator's costs will therefore reflect its own incremental costs of carrying traffic over its network. A TCP with fewer points of interconnection would be required to purchase termination and conveyance from BT at BT's standard network charges, certain of which are subject to Network Charge Controls. As the Network Charge Controls reflect BT's fully allocated costs (including an allowance for the cost of capital) and not LRIC (which are taken into account in the assessment of a fully interconnected TCP), we consider that a TCP purchasing conveyance and termination from BT will incur higher incremental costs than a fully interconnected network operator in terminating an 0870 call. We therefore consider that the costs of a fully interconnected network operator represent the costs of an efficient operator for these purposes.

A4.5 The estimated geographic termination costs above do not take into account the risk of arbitrage, and assume that retail customers will make a payment to BT equal to the headline retail rate for national calls. If this were the case in reality, no arbitrage could occur since the costs to an arbitrageur of making retail 0870 calls would exceed the available TCP revenues such that any revenue share available to the arbitrageur would be insufficient to cover its costs. However, as previously discussed, in light of the inclusion of calls to 0870 numbers in flat rate call packages, the determination of a charge at the levels proposed by some operators may facilitate arbitrage as the retail call costs payable by an arbitrageur would be significantly reduced. We have therefore conducted an assessment of the level of termination charges which reduce the risk of undesirable arbitrage by ensuring that

⁵⁵ There are approximately 70 points of interconnection with BT's fixed line network upon which charges for termination are based.

any outpayment available to arbitrageurs would be too low to provide arbitrage incentives.

- A4.6 An important determinant of the scope for AIT is the price at which a profit-maximising network TCP would be prepared to provide termination services to SPs. As long as the termination price it receives exceeds the incremental cost, it will be profit enhancing for the network TCP to take up additional SP business. A network TCP can increase its profits overall as long as the termination price is above incremental cost. Any price above incremental cost will make at least some contribution to common cost recovery, and so reduce the amount of common costs to be recovered from its other customers.
- A4.7 We therefore consider that the risk of arbitrage begins when there is a profit margin above incremental cost. Accordingly, we consider that an incremental cost approach to deriving the no-arbitrage ceiling is the relevant benchmark.
- A4.8 For the arbitrageur to make a profit, the termination rate must be sufficient to cover its costs as well as the TCPs. The addition of these TCP and arbitrageur costs will lead to the determination of a ceiling above which it is possible for arbitrage to occur, since the level of outpayment would be sufficient for an arbitrageur to obtain a profit thus ensuring that the incentive to engage in arbitrage would be present.
- A4.9 The no-arbitrage ceiling must also allow for different points of handover along BT's network, at which traffic which is originated on BT's network is taken from BT's network. These points of handover are:
- DLE (i.e. local exchange), and;
 - ST (near-end)
 - ST (far-end – short)
 - ST (far-end – medium)
 - ST (far-end – long).
- A4.10 In order to calculate the no-arbitrage ceiling we have taken into account three costs, namely:
- Routing costs;
 - Costs of number translation (including interconnection circuit costs); and
 - The costs of an arbitrageur engaging in AIT activity.
- A4.11 By adding together the costs, we have estimated a ceiling below which the revenue share available to the arbitrageur is so low that the incentives to arbitrage are minimised.

Costs of conveyance to the termination point

- A4.12 As discussed above, we have not attempted to estimate the incremental costs of a network operator using a bottom-up approach to costing a representative network. Rather, we have used a rule of thumb approach to estimate the costs of conveying the call to the point of termination, converting BT's standard charges to LRIC using a

FAC:LRIC ratio of 50 per cent (see below). We consider that this approach offers a reasonable guide to the incremental costs of conveyance for a network operator.

- A4.13 As discussed above, TCPs will require termination for NTS calls which will require different distance related termination services⁵⁶ (i.e. some calls require short, some medium and some long inter-tandem conveyance). Accordingly the costs of termination have been weighted by a representative traffic profile to ensure that they reflect the weighted average costs for all calls which require conveyance and termination. We have used similar weightings to those set out above in Table 5 .
- A4.14 Applying this methodology, we have calculated the weighted average geographic termination charges as set out in the following table:

Table 15 Weighted geographic termination charges (ppm)

Geographic termination services	D	E	W
Call Termination Local Exchange rate	0.2292	0.1049	0.0826
Single Tandem	0.2870	0.1314	0.1034
Double Tandem - Short	0.4120	0.1886	0.1485
Double Tandem - Medium	0.4988	0.2284	0.1798
Double Tandem - Long	0.6187	0.2832	0.2230
Weighted geographic termination rate (Single Tandem)	0.34	0.16	0.12

Source: BT carrier price list, Ofcom

Number translation costs

- A4.15 Ofcom has previously estimated the standalone costs (SAC) of supplying NTS termination and hosting services (including estimates of the SAC for number translation costs relevant to a network TCP) in the *NCCN 500* investigation.⁵⁷ This analysis was constructed for the purpose of assessing an allegation of excessive pricing, for which a comparison of price and SAC was necessary. In the absence of alternatives, we have used this analysis as the basis for our estimate of number translation costs in this dispute.
- A4.16 In *NCCN 500*, Ofcom estimated number translation costs based on the average total cost (ATC) of supplying NTS termination and hosting services based on an island TCP technology (i.e. with limited interconnection with BT's network). This technology was then scaled, so that the TCP's service capacity was similar to that of a large network TCP (equivalent to BT's scale of operation in terms of traffic volumes handled, peak capacity and quality of service). The resulting unit cost was then used to approximate a single estimate of the SAC of supplying NTS termination/hosting.

⁵⁶ As noted, TCPs offering 0870 services will typically need to hand over 0870 calls to BT for conveyance, and sometimes also for the final leg of the call to the SP.

⁵⁷ http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ccases/closed_all/cw_823/NCCN_500.pdf

- A4.17 Ofcom considers that the estimate of SAC derived in *NCCN 500* is a relevant starting point for deriving the long-run LRIC number translation costs for a network TCP in the current dispute. This is because the SAC estimate derived in *NCCN 500* is relevant to the case where NTS termination and hosting services are supplied by a network TCP. This seems a reasonable approach to take given that the unit cost was derived assuming a similar scale of operation to that of a network based TCP (albeit using a smaller TCP technology).
- A4.18 For the reasons noted above, we have therefore used as the starting point an analysis based on the SAC of supplying NTS termination/hosting developed in the *NCCN 500* investigation.

SAC estimates of number translation costs

- A4.19 In a multi-product firm, the incremental costs of a service are 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.
- A4.20 Incremental cost can be contrasted with the SAC of a service which is the cost of providing that particular service on its own, and with 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. Where there are no common costs, incremental and stand alone costs are the same. Where there are common costs, the stand alone cost of a service is the sum of the incremental cost of the service plus all of the costs which are common between that service and other services. In this case there are said to be economies of scope, that is, total costs are reduced by producing a number of services together, because common costs then have to be incurred only once. The *NCCN 500* model yields an estimate of the SAC of NTS termination/hosting since by definition it is a stand-alone business providing no other services.
- A4.21 The *NCCN 500* model, based on a hypothetical operator using the same kind of technology as an island TCP is modelled as not having a national network fully interconnected with that of BT. The rationale for this is that such a level of infrastructure is possessed only by communications providers offering a broad range of services over their networks (e.g. BT and Cable & Wireless). It is highly unlikely that a firm offering only NTS call termination/hosting, even at BT's scale, would find it economic to build and maintain its own national network.
- A4.22 Ofcom's analysis therefore assumes that the operator (terminating/hosting NTS calls) has a minimal network and buys from BT such network conveyance services as it requires (for example geographic call termination).
- A4.23 The operator is modelled as having three interconnections (for network resilience) to one single BT Digital Main Switching Unit (DMSU), of which any two are of a sufficient size to carry all traffic. If one of the three routes into BT's network was to become unavailable (for example, because of problems in the ducting which contains the data cables) the hypothetical single product firm would be able to carry the same total volume of traffic via the remaining two routes.
- A4.24 In order to handle such volumes, Ofcom's model is based on 'carrier class' switches, i.e. the type of switch that would be used by large communications providers such

as BT or Cable & Wireless. Although smaller providers of NTS call termination/hosting may use inexpensive PC-based switches, these components would not reliably be able to provide services at the scale being considered, both because of the volumes handled and the quality of service provided by large dedicated switches (which would be demanded by large NTS service provider customers for whom, as discussed above, continuity of service is likely to be business critical).

- A4.25 Ofcom determined that four suitably configured Ericsson AXE10 switches would be required to service the volume of traffic expected at the busiest periods. To provide a degree of resilience, the three-site configuration detailed above was modelled with two such switches at each site. This configuration provides a capacity of 50 per cent more than the peak traffic expected during high call traffic times enabling the network to cope with the failure of a single switch or of an entire site. Estimates of the various costs related to the sites (such as cabling and fire suppression) were also included in the model.
- A4.26 Ofcom's model also included the control software and hardware elements needed to provide NTS call termination/hosting. These include a service control platform ('SCP'), which directs the translation of NTS calls into geographic calls and provides some hosting services, such as automated voice response and intelligent routing. The model also included an interconnection billing system which records details about the ingress and egress of all calls and is used to verify payments from BT to the hypothetical single product firm for NTS call termination/hosting and the payments made by the hypothetical single product firm to BT for geographic call termination. These primary systems are located at one site with backups at another in case of site failure.
- A4.27 A significant element of the costs included in the model was the staff that would be needed to maintain, operate and develop the hypothetical single product firm's business. Provision was made for a dedicated team at each site, a central management team responsible for monitoring the operator's services 24 hours a day, a team responsible for implementing technical projects and maintaining the core systems, and developers responsible for bespoke software projects (either to maintain and improve the SCP and associated software or to develop bespoke systems which customers may require).
- A4.28 A cost of capital of 11.4 per cent in pre-tax nominal terms was used to annuitise all the capital expenditure. This is the cost of capital that BT faces for regulatory purposes outside its copper access network (for which the rate is 10%), and it is used as a reasonable assumption in the absence of evidence that the cost of capital differs to reflect the specific characteristics of the NTS termination/hosting business. However, BT is a large multi-product business, with many income streams, and such favourable access to capital may not therefore be available to a smaller single-product firm.
- A4.29 On this basis Ofcom considers that the SAC for the operator, based on a model of a standalone operator to provide NTS termination hosting services, is approximately [X]ppm. This is built up, as shown in Table 16.

Table 16 Standalone NTS number translation related costs

Operator costs (0845 and 0870 combined)	ppm (SAC)

Switch	[X<]
Site costs	[X<]
Operating and billing systems	[X<]
Interconnection circuit	[X<]
Number translation	[X<]
Operations and resources	[X<]
Total (SAC)	[X<]

Source, Ofcom, an Island operator

Conversion to LRIC of network operator

- A4.30 In the absence of better information we have used a SAC:FAC ratio of 50% to derive an estimate of the FAC of a network operator from the costs of the operator modelled in *NCCN 500*. The following discussion explains the basis for converting from an estimate of SAC costs to the FAC for a network operator.
- A4.31 As explained above, the operator modelled in *NCCN 500* is by definition a standalone business providing NTS termination/hosting. Its (average total) costs may therefore be thought of as an approximation to the SAC of NTS termination/hosting in a multi-product firm such as an operator with a large network. Such an operator will be able to benefit from economies of scope by spreading common costs over a large range of services. Its average total costs ('fully-allocated' costs) will therefore be below SAC. In this determination Ofcom has assumed that FAC is roughly 50 per cent of SAC (also see paragraphs A4.32-A4.41 below). This 50% ratio is also derived from the *NCCN 500* SAC model. In that context an estimate of retail costs on an SAC basis was derived from FAC data by doubling, implying an FAC:SAC ratio of 50%. Ofcom notes that in contrast to retail related number translation costs, only SAC data was available in respect of network related number translation costs in *NCCN 500*.
- A4.32 A 50% ratio was assumed for retail costs because this was approximately the ratio of (distributed) SAC (DSAC)⁵⁸ to FAC for BT network services in the relevant regulatory product groups for NTS termination for voice and data calls (regulatory accounting group codes P056 and P346, respectively). These yield ratios in the region of 2.4 to 2.8 which were rounded to 2 as using a lower ratio gave a conservative estimate of SAC for the purposes of the *NCCN500* investigation.
- A4.33 In that context, these comparators had two limitations: first, they relate to network rather than non-network costs, and second, they are based on DSAC not SAC. The first of these is not relevant in the context of this dispute, since we are applying the ratio to network rather than retail costs.
- A4.34 In relation to the second point, on the other hand, it is likely that DSAC is below the true SAC for any given service, due to the nature of the costing model used by BT.

⁵⁸ The version of SAC calculated by BT's incremental cost model is referred to as "distributed" SAC because costs which are common to services within one of three large increments are in effect distributed among the services within that increment.

This means that some (“intrabusiness”) common costs are distributed among all the services to which they are common (rather than added to the incremental costs of just the service in question, as required for a true SAC). As a result, a FAC:DSAC ratio of 50% could lead to an overestimate of FAC for network expenditure. On the other hand, the island operator is technically very different to BT, with its large network which gives rise to large fixed and common costs. On balance we believe that a ratio of 50% is reasonable as a central estimate but have conducted a sensitivity analysis of the effect on the arbitrage ceiling of lower ratios.

- A4.35 Ofcom notes that incremental costs will be below FAC as the former include no common costs (see paragraph A4.31). In this dispute, Ofcom has followed the rule of thumb that incremental costs are 50 per cent of FAC (see Section 6 and paragraphs A4.36 below).
- A4.36 In relation to retail costs, Ofcom sought retail costs relating only to the costs of call origination. Ofcom sought retail costs that were broken down by key categories including Sales Goods and Administration (‘SGA’) costs and overhead costs. These costs were provided on a FAC basis (meaning that adjustment from SAC is not necessary). Ofcom has derived BT’s LRIC costs from its FAC costs on the basis of a LRIC:FAC ratio of 50%.
- A4.37 As described in paragraph 6.102, Ofcom understands that BT’s proposed LRIC:FAC ratios are derived from an analysis of the costs that BT considered to be incremental over a relatively large volume of call minutes, significantly larger than the volume of calls to each 0870 Operator, for example. In general, the larger the size of the volume increment, the larger the proportion of costs that are incremental.
- A4.38 For example, where there are economies of scale, the marginal costs (i.e. for a very small volume increment) are lower than the average costs. This had been noted in previous regulatory decisions, for example by Oftel in its Determination of fixed portability costs and charges and statutory consultation on proposed modifications to BT’s Licence to give effect to charge controls for portability⁵⁹.
- A4.39 Economies of scale and scope in both network and non-network functions may be significant. For example, in the modelling used to inform the setting of BT’s retail price controls in 2002⁶⁰ and the network charge control in 2005, Ofcom used cost-volume elasticities of around 0.25, while in other cases Ofcom has used a CVE of around 0.45 for indirect costs.⁶¹ These CVEs reflect significant economies of scale in these activities (or, equivalently economies of scope in the services which the functions support). The CVE, which is the percentage change in total cost for a given (small) change in volume, can equivalently be expressed as the ratio of marginal cost to average costs.
- A4.40 Ofcom’s view is that BT’s LRIC:FAC ratios are likely to overstate the ratios applicable to the relevant increment for the purposes of this dispute. Ofcom considers however that it is also likely that the CVEs understate the applicable ratios, because they embody a volume increment that may be too small. Ofcom’s provisional view is that it would be reasonable to use ratios that lie midway between

⁵⁹ See paragraph 11.13 in

<http://www.ofcom.org.uk/static/archive/oftel/publications/pricing/2002/nupo0502.htm#ex>

⁶⁰ See ‘Protecting consumers by promoting competition: Oftel’s conclusions -20 June 2002’

⁶¹ See for example ‘Determination of fixed portability costs and charges and statutory consultation on proposed modifications to BT’s Licence to give effect to charge controls for portability’, May 2002 or ‘Wholesale Line Rental: Reviewing and setting charge ceilings for WLR services’, November 2005

the ratios provided by BT and the CVEs previously used by Ofcom for similar costs in order to derive estimates of LRIC. Ofcom therefore applies an average LRIC:FAC ratio for both network and retail costs of 0.50 to derive its central estimate of LRIC. However, we have also conducted an analysis of the effect on the arbitrage ceiling of ratios as low as 0.25.

- A4.41 In conclusion, Ofcom considers that a SAC:FAC ratio of 50% is an appropriate adjustment to make for a network operator. In turn, Ofcom considers the LRIC cost standard is the relevant standard for the arbitrage ceiling test for a network operator and hence applies an additional adjustment to reflect a FAC:LRIC ratio of 50 per cent. Accordingly, Ofcom's central estimate of the network related NTS translation costs is approximately []ppm for the network operator on a LRIC basis.

Table 17 Network related number translation costs (ppm)

	SAC	SAC:FAC	FAC:IC
Adjustment ratio		50%	50%
ppm cost	[]	[]	[]

Source: Ofcom, island operator

- A4.42 Ofcom notes that a proportion of network related number translation costs relate to switching and interconnection circuit costs, for which costs could be said to be determined by peak capacity requirements. For the purpose of applying the no arbitrage ceiling test, Ofcom has applied a time of day gradient to allow for a proportionately greater share of these costs to be recovered in the daytime period. This gradient is based on the relativities of geographic termination charges as set out in Table 17.
- A4.43 To estimate retail related number translation costs for a minimum cost network TCP, Ofcom has had regard to modelling work previously undertaken in the NCCN 500 investigation⁶². In that investigation, Ofcom sought to estimate standalone retail costs for an island TCP that was, under an assumption of a contestable market, competing for BT's customers by providing the same level and quality of service as BT.
- A4.44 For that purpose, Ofcom took BT's own estimates of its retail NTS termination/hosting costs at FAC. These FAC costs were based on regulatory accounting product groups for NTS voice and data. BT's FAC costs were then adjusted to reflect the equivalent standalone costs for an island TCP. The adjustment (a retail uplift factor of 2) was applied. The underlying FAC cost was estimated at []ppm.
- A4.45 In this determination however, we are interested in estimating the minimum possible retail costs for an efficient network TCP.
- A4.46 This is because the no-arbitrage ceiling identifies the minimum NTS termination/hosting costs above which a termination rate would support revenue sharing, thereby resulting in an unacceptable risk of arbitrage. Under conditions of profit maximisation, a network TCP will have an incentive to sign contracts to terminate traffic with SP's (including unknowingly arbitrageurs) where TCP's can at least cover their minimal incremental costs (including retail costs) for terminating

⁶²

http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ccases/closed_all/cw_823/NCCN_500.pdf

calls. Accordingly, the arbitrage ceiling should reflect the minimum possible efficient retail costs for a network TCP (i.e. minimum possible incremental costs).

A4.47 We have therefore modified the approach used for the NCCN 500 investigation by examining individual FAC costs reported by BT in their management accounts for retailing costs. We argue that some of these costs may be considered not to be relevant to an efficient network TCP. For example, in its estimate for those costs, Ofcom included a minimal set of costs:

- sales team and support costs,
- help desk
- marketing costs
- computing and software
- premises costs.

A4.48 These cost were examined and Ofcom took the view, based on cost categories identified above, that a minimum cost network TCP FAC could reasonably be proxied at roughly 50% of BT's estimated FAC costs. Hence we estimated a modified network TCP FAC at []ppm. We then converted the modified network TCP FAC to a LRIC basis using an adjustment of 50% (see from paragraph A4.36). Hence our central estimate of the minimum retail TCP LRIC is []ppm.

Margin for error

A4.49 We recognise that there is potential for a significant margin of error around our estimates of the relevant number translation costs. As described above, we have used an indirect method to derive this estimate, starting with the SAC of an island operator and then applying ratios to estimate, first, the FAC and ultimately the LRIC of a network operator. As well as the margin for error in the estimates of SAC, the adjustment ratios used to convert to LRIC are approximate only, reflecting our judgment in respect of these relationships. However, these cost estimates are based on the best available information to Ofcom, and on that basis Ofcom considers that it is reasonable to use these estimates in determining a termination rate.

A4.50 The calculation of the arbitrage ceiling necessarily rests on some assumptions, in particular concerning the relationship between SAC, FAC and LRIC, which are inevitably approximate. As the main concern is that the determined rate should not be above the arbitrage ceiling, our estimate already includes what we believe is likely to be a minimum estimate of retail costs (as set out in paragraphs A4.43-A4.48). In addition we have undertaken a further sensitivity analysis to test whether under more conservative assumptions the arbitrage ceiling could lie below the proposed rate.

A4.51 Ofcom has considered three sensitivities. First, Ofcom has assumed a more conservative adjustment factor to derive FAC (from SAC) of 2.8, based on the upper bound estimate of DSAC:FAC ratios (Sensitivity A) (see paragraphs A4.32-A4.34). Second, Ofcom separately estimates a more conservative adjustment factor to derive LRIC (from FAC) of 0.25 based on using CVE estimates (Sensitivity B) (see from paragraph A4.35). Finally, Ofcom applies both sensitivities (A and B) simultaneously to derive a lower bound estimate of the no-arbitrage ceiling (Sensitivity C).

A4.52 The following tables set out the sensitivity analysis.

Table 18: Number translation sensitivity analysis

Costs	D	E	W
No-arbitrage ceiling: central estimate	0.68	0.46	0.42
Proposed termination rate (FAC base)	0.56	0.26	0.20
No-arbitrage ceiling: Sensitivity A	0.64	0.43	0.39
No-arbitrage ceiling: Sensitivity B	0.57	0.37	0.33
No-arbitrage ceiling: Sensitivity C (A+B)	0.55	0.35	0.32

A4.53 Ofcom notes that the proposed FAC rate remains below the no-arbitrage ceiling for all sensitivities except for the case where both sensitivities are applied in respect of the Daytime rate. However, Ofcom considers that the rates are close enough that it does not consider the rate to be materially different to the lower bound (e.g. 0.555ppm compared to 0.550pm when assessed at three decimal places). Ofcom therefore considers that the proposed termination rate should be interpreted to have passed this sensitivity.

A4.54 Accordingly, Ofcom considers that taking into account both the central estimate of the no-arbitrage ceiling and the lower bound estimates as reflected in all sensitivities, the proposed FAC rate is not likely to create an unacceptable risk of arbitrage.

Costs of an arbitrageur

A4.55 [REDACTED].

A4.56 [REDACTED].

A4.57 [REDACTED].

Figure 7 Diagram of AIT

[X]

A4.58 [X].

A4.59 [X].

A4.60 [X]

A4.61 [X]

A4.62 [X]:

A4.63 [X].

A4.64 [X].

Results

A4.65 As outlined in this Annex, the no-arbitrage ceiling comprises 3 key elements:

- Routing costs (blended for various distance based termination services at Day, Evening and Weekend time of day rates);
- Number translation costs; and
- Costs of an arbitrageur.

A4.66 The relevant no-arbitrage ceiling for the Single Tandem point of handover, and by time of day period are shown in Table 19.

Table 19: No-arbitrage ceilings (ppm)

<i>Elements of ceiling</i>	D	E	W
weighted geographic routing costs (ST point)	0.34	0.16	0.12
number translation (network)	[X]	[X]	[X]
number translation (retail)	[X]	[X]	[X]
arbitrageur costs	0.12	0.12	0.12
Single Tandem no-arbitrage ceiling (near-end) – sum of above	0.68	0.46	0.42

Source: Ofcom calculations (see Annex 4)

Annex 5

Calculation of Option 1 and Option 2 rates

A5.1 This Annex provides a detailed set of tables outlining all calculations undertaken to derive Option 1 and Option 2 rates. Specifically, this section explains the following three elements of the Option 1 and Option 2 rates:

- geographic termination
- near-end handover adjustment; and
- interconnection circuits.

Option 1: termination rate with LRIC estimate for near-end handover and interconnection

Near and far-end handover

A5.2 The costs of terminating a call under far-end handover arrangements and the adjustment for near-end handover set out above are calculated simultaneously. This reflects the fact that a proportion of all traffic terminated needs additional conveyance due to handover at the near-end.

A5.3 The tables below illustrate this calculation for the near-end Single Tandem, point of handover

Table 20: Deriving the near-end adjustment and far-end geographic termination costs (ppm)

	D	E	W	Traffic weights
Call Termination Local Exchange rate (NCC)	0.2292	0.1049	0.0826	[\propto]
Local Tandem Conveyance (NCC)	0.3447	0.1578	0.1242	[\propto]
Inter-tandem Conveyance - Short (LRIC)	0.4697	0.2150	0.1693	[\propto]
Inter-tandem Conveyance - Medium (LRIC)	0.5566	0.2548	0.2006	[\propto]
Inter-tandem Conveyance - Long (LRIC)	0.6764	0.3097	0.2438	[\propto]
Weighted conveyance and termination prices	0.4185	0.1968	0.1545	100%

Source: BT Wholesale carrier price list, Network operator, Ofcom

Interconnection circuit costs

- A5.4 Ofcom then derives the cost of interconnection circuits. Ofcom has previously estimated the costs of interconnection circuits for an island TCP buying in termination services from BT. This model was used in Ofcom's NCCN 500 investigation, Ofcom has modified this analysis to reflect a higher proportion of In-Span Interconnection circuits to reflect the relevance of the efficient costs of a network TCP upon which the determined rate is to be based.
- A5.5 Ofcom assumes that interconnection circuits bought from BT by a fully interconnected TCP would largely reflect ISI circuits (approximately 70%), while the rest comprise CSI circuits (30%). Ofcom assumes that in respect of CSI circuits, the distance between BT's exchange and the TCP's network is approximately 1km, and for ISI circuits, approximately 100 metres. Accordingly, Ofcom has assumed that the per km charge of £23 and per 100 metres charge of £68.75 is on average incurred for each CSI and ISI circuit, respectively. In respect of CSI circuits, Ofcom has assumed that TCP's incur additional connection and fixed rental elements.
- A5.6 Connection costs were annuitised (over five years at a WACC of 11.4%) to arrive at an annuity Capex estimate. Fixed rental costs are multiplied by the estimated number of interconnection circuits (as modelled for an island TCOP matching BT's service capabilities and buying in all network conveyance and termination from BT. Per kilometre rental costs were multiplied by the estimated number of interconnection circuits and the distance between the entrant's site premises and BT's network. We have assumed that this distance could be 100 metres, but note the charging structure is per Kms and so have assumed the fee paid is not pro rated (as if the distance was 1km). Total interconnection costs (including an annuitised connection, fixed rental and per kilometre rental costs) were then added together. The total estimated interconnection cost was then expressed in pence per minute ("ppm") by dividing through by total BT terminated (ie BT-BT and OCP-BT) traffic minutes.
- A5.7 The following table sets out the relevant charging parameters and implied interconnection circuit costs.

Table 21: Interconnection charging parameters and implied ppm price

	ISI	CSI
Connection charge (£)		1,001
Rental – fixed (£)		1,124
Rental – per m/per km (£)	68.75	23
Period (years)	-	5
Proportion (%)	70	30
Weighted circuit price (ppm)	0.0486 (FAC)	
Conversion factor LRIC:FAC = 50%	0.0243 (LRIC)	

- A5.8 Ofcom has then dimensioned the interconnection circuits according to the weighted conveyance and termination prices for Day, Evening and Weekend each as a

proportion of the sum of the prices (see Table 1). The following interconnection circuit costs are estimated for Day, Evening and Weekend.

Table 22: Interconnection circuit prices (at LRIC) (ppm)

	D	E	W
Interconnection circuit prices	0.031	0.018	0.014

A5.9 Ofcom then adds the weighted conveyance and termination prices and the interconnection circuit prices to derive the Option 1 rate at the Single Tandem point of handover.

Table 23: Option 1 rate at Single Tandem point of handover

	D	E	W
Weighted conveyance and termination prices	0.4185	0.1968	0.1545
Interconnection circuits	0.031	0.018	0.014
Option 1 rate (Single Tandem point of handover)	0.45	0.22	0.17

A5.10 Ofcom has then derived the equivalent rate for different points of handover reflecting either the additional or lesser conveyance undertaken by the OCP in transporting the call to the TCP. The basis for the adjustments are as follows.

Table 24: Methodology for adjusting Option 1 rate for different points of handover

Point of handover	adjustment ⁶³
DLE	ST base + local - tandem
ST (near-end)	None (ST base)
ST (far-end)	ST far-end geographic termination + interconnection circuit costs
ST (far-end – medium)	ST far-end geographic termination + interconnection circuit costs
ST (far-end – long)	ST far-end geographic termination + interconnection circuit costs

A5.11 The following table identifies the adjustments and Option 1 rate in ppm.

Table 25: Proposed adjustments and rates for 5 points of handover

Point of handover	Adjustment (ppm)			Option 1 rates		

⁶³Adjustments for standard conveyance should be made reflecting standard conveyance and interconnection circuit prices in full as listed in BT Wholesale's carrier price list.

	D	E	W	D	E	W
DLE	+0.1155	+0.0529	+0.0416	0.56	0.27	0.21
ST (near-end)				0.45	0.22	0.17
ST (far-end - long)	-0.1250	-0.0572	-0.0451	0.38	0.18	0.14
ST (far-end –medium)	-0.2119	-0.0970	-0.0764	0.38	0.18	0.14
ST (far-end – long)	-0.3317	-0.1519	-0.1196	0.38	0.18	0.14

Option 2- termination rate with FAC estimate for near-end handover and interconnection circuits

Near and far-end handover

- A5.12 In respect of the near-end and far-end handover adjustments, the calculation is undertaken simultaneously reflecting the fact that a proportion of all traffic carried over the far-end also needs conveyance from the near-end.
- A5.13 The tables below illustrate this calculation for the near-end Single Tandem, point of handover

Table 26: Deriving the near-end adjustment and far-end geographic termination costs (ppm)

	D	E	W	Traffic weights
Call Termination Local Exchange rate (NCC)	0.2292	0.1049	0.0826	[✕]
Local Tandem Conveyance (NCC)	0.3447	0.1578	0.1242	[✕]
Inter-tandem Conveyance - Short (FAC)	0.5947	0.2722	0.2143	[✕]
Inter-tandem Conveyance - Medium (FAC)	0.7684	0.3518	0.2770	[✕]
Inter-tandem Conveyance - Long (FAC)	1.0081	0.4615	0.3634	[✕]
Weighted conveyance and termination prices	0.4527	0.2073	0.1634	100%

Source: BT Wholesale, carrier price list, Network Operator, Ofcom

Interconnection circuit costs

A5.14 Ofcom then derives the cost of interconnection circuits. The method for estimating interconnection costs under Option 2 is similar to Option 1, except that no adjustment is made to the estimated FAC cost of interconnection circuit costs to convert to LRIC.

A5.15 The following table sets out the relevant charging parameters and implied interconnection circuit costs. We apply the same method as for Option 1 except we do not convert from FAC to LRIC (see paragraphs A5.4 - A5.6).

Table 27: Interconnection charging parameters and implied ppm price

	ISI	CSI
Connection charge (£)		1,001
Rental – fixed (£)		1,124
Rental – per m/per km (£)	68.75	23
Period (years)	5	5
Proportion (%)	70	30
Weighted circuit price (ppm)	0.0486 (FAC)	

A5.16 Ofcom interprets this as an estimate of average total costs or equivalently, FAC. Ofcom has then dimensioned the interconnection circuits according to the weighted conveyance and termination prices for Day, Evening and Weekend each as a proportion of the sum of the prices (see Table 9 below). The following interconnection circuit costs are estimated.

Table 28: Interconnection circuit prices (equivalent to FAC) (ppm)

	D	E	W
Interconnection circuit prices	0.063	0.030	0.023

A5.17 Ofcom then adds the weighted conveyance and termination prices and the interconnection circuit prices to derive the Option 2 rate at the single tandem point of handover.

Table 29: Option 2 rate at Single Tandem point of handover

	D	E	W
Weighted conveyance and termination prices	0.4921	0.2305	0.1812
Interconnection circuits	0.063	0.030	0.023
Option 2 rate (Single Tandem point of handover)	0.56	0.26	0.20

A5.18 Ofcom has then derived the equivalent rate for different points of handover reflecting either the additional or lesser conveyance undertaken by the OCP in transporting the call to the TCP. The basis for the adjustments are as follows.

Table 30: Methodology for adjusting Option 2 rate for different points of handover

Point of handover	adjustment ⁶⁴
DLE	ST base + local - tandem
ST (near-end)	None (ST base)
ST (far-end)	ST far-end geographic termination + interconnection circuit costs
ST (far-end – medium)	ST far-end geographic termination + interconnection circuit costs
ST (far-end – long)	ST far-end geographic termination + interconnection circuit costs

A5.19 The following table identifies the adjustments and Option 2 rate in ppm.

Table 31: Proposed adjustments and rates for 5 points of handover for Option 2

Point of handover	Adjustment (ppm)			Option 2 rates		
	D	E	W	D	E	W

⁶⁴ Adjustments should be made reflecting standard conveyance product prices in full as listed in BT Wholesale's carrier price list

DLE	+0.1155	+0.0529	+0.0416	0.67	0.31	0.25
ST (near-end)				0.56	0.26	0.20
ST (far-end - short)	-0.1250	-0.0572	-0.0451	0.41	0.19	0.15
ST (far-end –medium)	-0.2119	-0.0970	-0.0764	0.41	0.19	0.15
ST (far-end – long)	-0.3317	-0.1519	-0.1196	0.41	0.19	0.15

Annex 6

Responding to this consultation

How to respond

- A6.1 Ofcom invites written views and comments on the issues raised in this document, to be made by 5pm on 7 May 2009.
- A6.2 Ofcom strongly prefers to receive responses using the online web form at <http://www.ofcom.org.uk/consult/condocs/resolve0870calls/>, as this helps us to process the responses quickly and efficiently. We would also be grateful if you could assist us by completing a response cover sheet (see Annex 3), to indicate whether or not there are confidentiality issues. This response coversheet is incorporated into the online web form questionnaire.
- A6.3 For larger consultation responses - particularly those with supporting charts, tables or other data - please email tanya.rofani@ofcom.org.uk attaching your response in Microsoft Word format, together with a consultation response coversheet.
- A6.4 Responses may alternatively be posted or faxed to the address below, marked with the title of the consultation.
- Tanya Rofani
Competition Group
Riverside House
2A Southwark Bridge Road
London SE1 9HA
- Fax: 020 7981 3333
- A6.5 Note that we do not need a hard copy in addition to an electronic version. Ofcom will acknowledge receipt of responses if they are submitted using the online web form but not otherwise.
- A6.6 It would help if you can explain why you hold your views and how Ofcom's proposals would impact on you.

Further information

- A6.7 If you want to discuss the issues and questions raised in this draft determination, or need advice on the appropriate form of response, please contact Tanya Rofani on 020 7783 4342.

Confidentiality

- A6.8 We believe it is important for everyone interested in an issue to see the views expressed by consultation respondents. We will therefore usually publish all responses on our website, www.ofcom.org.uk, ideally on receipt. If you think your response should be kept confidential, can you please specify what part or whether all of your response should be kept confidential, and specify why. Please also place such parts in a separate annex.

- A6.9 If someone asks us to keep part or all of a response confidential, we will treat this request seriously and will try to respect this. But sometimes we will need to publish all responses, including those that are marked as confidential, in order to meet legal obligations.
- A6.10 Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to Ofcom to use. Ofcom's approach on intellectual property rights is explained further on its website at <http://www.ofcom.org.uk/about/account/disclaimer/>

Next steps

- A6.11 Following the end of the consultation period, Ofcom intends to publish a final determination.
- A6.12 Please note that you can register to receive free mail Updates alerting you to the publications of relevant Ofcom documents. For more details please see: http://www.ofcom.org.uk/static/subscribe/select_list.htm

Ofcom's consultation processes

- A6.13 Ofcom seeks to ensure that responding to a consultation is easy as possible. For more information please see our consultation principles in Annex 2.
- A6.14 If you have any comments or suggestions on how Ofcom conducts its consultations, please call our consultation helpdesk on 020 7981 3003 or e-mail us at consult@ofcom.org.uk . We would particularly welcome thoughts on how Ofcom could more effectively seek the views of those groups or individuals, such as small businesses or particular types of residential consumers, who are less likely to give their opinions through a formal consultation.
- A6.15 If you would like to discuss these issues or Ofcom's consultation processes more generally you can alternatively contact Vicki Nash, Director Scotland, who is Ofcom's consultation champion:

Vicki Nash
Ofcom
Sutherland House
149 St. Vincent Street
Glasgow G2 5NW

Tel: 0141 229 7401
Fax: 0141 229 7433

Email vicki.nash@ofcom.org.uk

Annex 7

Ofcom's consultation principles

- A7.1 Ofcom has published the following seven principles that it will follow for each public written consultation:

Before the consultation

- A7.2 Where possible, we will hold informal talks with people and organisations before announcing a big consultation to find out whether we are thinking in the right direction. If we do not have enough time to do this, we will hold an open meeting to explain our proposals shortly after announcing the consultation.

During the consultation

- A7.3 We will be clear about who we are consulting, why, on what questions and for how long.
- A7.4 We will make the consultation document as short and simple as possible with a summary of no more than two pages. We will try to make it as easy as possible to give us a written response. If the consultation is complicated, we may provide a shortened version for smaller organisations or individuals who would otherwise not be able to spare the time to share their views.
- A7.5 We will normally allow ten weeks for responses to consultations on issues of general interest.
- A7.6 There will be a person within Ofcom who will be in charge of making sure we follow our own guidelines and reach out to the largest number of people and organizations interested in the outcome of our decisions. This individual (who we call the consultation champion) will also be the main person to contact with views on the way we run our consultations.
- A7.7 If we are not able to follow one of these principles, we will explain why. This may be because a particular issue is urgent. If we need to reduce the amount of time we have set aside for a consultation, we will let those concerned know beforehand that this is a 'red flag consultation' which needs their urgent attention.

After the consultation

- A7.8 We will look at each response carefully and with an open mind. We will give reasons for our decisions and will give an account of how the views of those concerned helped shape those decisions.

Annex 8

Consultation response cover sheet

- A8.1 In the interests of transparency and good regulatory practice, we will publish all consultation responses in full on our website, www.ofcom.org.uk.
- A8.2 We have produced a coversheet for responses (see below) and would be very grateful if you could send one with your response (this is incorporated into the online web form if you respond in this way). This will speed up our processing of responses, and help to maintain confidentiality where appropriate.
- A8.3 The quality of consultation can be enhanced by publishing responses before the consultation period closes. In particular, this can help those individuals and organisations with limited resources or familiarity with the issues to respond in a more informed way. Therefore Ofcom would encourage respondents to complete their coversheet in a way that allows Ofcom to publish their responses upon receipt, rather than waiting until the consultation period has ended.
- A8.4 We strongly prefer to receive responses via the online web form which incorporates the coversheet. If you are responding via email, post or fax you can download an electronic copy of this coversheet in Word or RTF format from the 'Consultations' section of our website at www.ofcom.org.uk/consult/.
- A8.5 Please put any parts of your response you consider should be kept confidential in a separate annex to your response and include your reasons why this part of your response should not be published. This can include information such as your personal background and experience. If you want your name, address, other contact details, or job title to remain confidential, please provide them in your cover sheet only, so that we don't have to edit your response.

Cover sheet for response to an Ofcom consultation

BASIC DETAILS

Consultation title:

To (Ofcom contact):

Name of respondent:

Representing (self or organisation/s):

Address (if not received by email):

CONFIDENTIALITY

Please tick below what part of your response you consider is confidential, giving your reasons why

Nothing

Name/contact details/job title

Whole response

Organisation

Part of the response

If there is no separate annex, which parts?

If you want part of your response, your name or your organisation not to be published, can Ofcom still publish a reference to the contents of your response (including, for any confidential parts, a general summary that does not disclose the specific information or enable you to be identified)?

DECLARATION

I confirm that the correspondence supplied with this cover sheet is a formal consultation response that Ofcom can publish. However, in supplying this response, I understand that Ofcom may need to publish all responses, including those which are marked as confidential, in order to meet legal obligations. If I have sent my response by email, Ofcom can disregard any standard e-mail text about not disclosing email contents and attachments.

Ofcom seeks to publish responses on receipt. If your response is non-confidential (in whole or in part), and you would prefer us to publish your response only once the consultation has ended, please tick here.

Name

Signed (if hard copy)